International Organisations Research Journal, 2024, vol. 19, no 2, pp. 21–55
Original Article
doi:10.17323/1996-7845-2024-02-02

New Era of U.S. and the EU Protectionism: How Will It Affect East Asia?[1, 2]

S.-C. Park

Sang-Chul Park – Professor at Graduate School of Convergence Technology and Energy, Tech University of Korea; Korea, 429–793, Kyonggi-Do, Siheung-City, 2121 Jeongwang-Dong; scpark@tukorea.ac.kr

Abstract

Global political economy has been experiencing a new normal period through the COVID-19 pandemic and the Ukraine War since Jan. 2020. At the same time, the trade conflict between the USA and China has been continuing since the Trump Administration and even expanding to the technology conflict under the Biden Administration that has enhanced protectionism in the world trade. Due to these conflicts, discussions on de-globalization or re-globalization are raised. The two expected or unexpected historical events have resulted in a long wave of high inflation, energy and food crises, disorder of global supply chains etc. in the global economy, which is known as a new normal era shifted from low inflation, well-functioning global supply chains (GSCs) based on division of labor. In order to strengthen its economic and political leadership, the Biden government has upgraded the Trump's America First Policy to the Made in America Policy based on Chips and Science Act (CSA) and Inflation Reduction Act (IRA), which represent a new era of protectionism. In parallel, the EU has also considered to impose Net Zero Industry Act (NZIA) and other Acts. The research hypothesis is that protectionism in the name of economic security generates instability of the world trade. Its result may be negative impacts of some East Asian economies. This paper aims to analyze the new trend of protectionism in the USA and the EU. It also focuses on impacts of protectionism on East Asia in general and South Korea in particular.

Key words: Global economy and new normal, protectionism, trade and technology conflict, USA and the EU, East Asia

For citation: Park S.-Ch. (2024) New Era of U.S. and the EU Protectionism: How Will It Affect East Asia? *International Organisations Research Journal*, vol. 19, no 2, pp. 21–55 (in English). doi:10.17323/1996-7845-2024-02-02

[1] The article was submitted 14.11.2023.

[2] Translated by A. Ignatov, PhD in Political Science, Researcher, Centre for International Institutions Research of the Institute for Applied Economic Research, Russian Presidential Academy of National Economy and Public Administration (RANEPA).

Introduction

While there is ongoing debate among scholars about whether the world is heading for a new global order or a new Cold War, the global political economy has been experiencing "a new normal" that began in January 2020, during the period of the COVID-19 pandemic and the Ukraine War. At the same time, the trade conflict between the U.S. and China that emerged during the Trump administration has expanded into a technology conflict under the Biden administration and has increased protectionism in world trade. Due to these conflicts, questions on deglobalization or reglobalization are being raised. These two expected, or unexpected, historical events resulted in a long wave of high inflation, energy and food crises, and disorder of global supply chains (GSCs) in the global economy, which has established a new normal era, shifting away from low inflation and well-functioning GSCs based on division of labour [Benigno et al., 2022; IMF, 2023; Nye, 2022; OECD, n.d.].

To strengthen its economic and political leadership, the Biden government has upgraded from Trump's America First Policy to the Made in America Policy based on Chips and Science Act (CSA) and the Inflation Reduction Act (IRA), which represent a new era of protectionism. In fact, these legal frameworks aim to reshape the global supply and value chains, particularly in specific high-tech areas, and to restore domestic manufacturing industries generating new employment and economic growth. Moreover, they can contribute to controlling the emerging Chinese economic power in the world in general and in the Asia Pacific region in particular. In parallel, the European Union (EU) has also considered imposing the Net Zero Industry Act (NZIA), the Critical Raw Materials Act (CRMA), and the Carbon Board Adjustment Mechanism (CBAM), which are regarded as green protectionism toward external trade partners [European Commission, 2023a, 2023b; The White House, 2022a, 2023].

As such, the open and free global trade system based on the fair competition and free market economic system has been threatened by the second wave of protectionism led by the advanced economies, which claim that China provoked their protectionist approach due to its unfair competition for foreign companies, particularly in the large-sized battery and financial sectors in the domestic market, and generated the severe shock of the global supply chains under the zero COVID-19 policy based on low transparency of data. In fact, however, the core reasons for protectionism stem from the trade imbalance between the West and the East. Due to the various measures of protectionism under the Trump administration, the U.S. trade deficit with China declined from $418 billion in 2018 to $310 billion in 2020. However, it increased to $355 billion in 2021 and $382 billion in 2022. The EU trade deficit with China has followed the same pattern since 2012. It increased from 155 billion euros in 2018 to 396 billion euros ($432 billion) in 2022. In particular, the EU trade deficit with China widened during the pandemic period. It increased from 182 billion euros in 2020 to 396 billion euros in 2022, which is more than double [Eurostat, 2023; Statista, n.d.].

In addition to the mounting trade deficit with China, the U.S. and the EU are concerned about the rapid development of Chinese high-tech, particularly in AI, telecommunication, rare materials, and strategic raw materials related to the future-oriented technologies of the fourth industrial revolution that can contribute to China becoming not only the economic super power, but also the military and political super power in the near future, influencing the global trade system more than ever. Therefore, the EU identified China as an economic competitor and a systemic rival and simultaneously as a partner for cooperation and negotiation in the strategic outlook in 2019. Moreover, the EU has not regarded China as a developing country since then. The U.S. also regarded China as a strategic competitor in 2021 and has claimed that global institutions such as the World Bank and the International Monetary Fund (IMF) may not treat China as a developing country eligible to receive economic grants. As a result, competition between these three parties has intensified on a global scale, and their cooperation seems to be very limited in their trade relations. This could cause instability of world trade and increase production costs by reshaping the GSCs [Council on Foreign Relations, n.d.; European Union, 2022].

This article deals with the current global political economy, particularly in the new global trade trend. It discusses the second wave of protectionism in the U.S. and the EU, as well as China's response. Additionally, it focuses on the impacts of protectionism on East Asia in general and Korea in particular. Last, it analyzes the trade strategies of the U.S. and the EU to increase their firewalls to protect and revitalize their domestic markets. Various methods are used, such as critical analysis of literature, an inference method, cross-sectional analysis, and quantitative statistical analysis.

Most mainstream economists would agree with recent rebuttals to the scepticism about the liberal trading order in the global economic system. In fact, it is true that the intellectual and political support for free trade in the U.S. and elsewhere seems to be declining, and protectionism has started to resurge since the global financial crisis (GFC) in 2008 in many countries, particularly in the U.S. and the EU.

Economic theory suggests that comparative advantage and economies of scale create economic gains through efficiency based on the division of labour. Tariffs lead to competitive tariff retaliation, which results in a massive shrinkage in foreign trade and low global economic growth. Economic theory never urged that free trade is good for all industries and all people, but rather that the winners from free trade could afford to compensate the losers. As a result, everyone would be made better off because the aggregate gains are positive. Therefore, free trade can increase the national wealth of participating states [O'Rourke, Williamson, 2001; Rosen, 2008].

Economic theory also says that resources will flow to more efficient uses. However, this does not apply when governments and markets do not work well. While many East Asian economies grew rapidly after a shift to market economies, it is argued that they profited not from free trade but from export-oriented growth and high protectionism. Sub-Saharan Africa has generated low economic growth because its exports are mostly primary products, natural resources, intermediate goods, and labour forces. Moreover, bitterness in Latin America about neoliberalism focusing on free trade and globalization resulted in politically left-oriented governments and more state intervention. As a result, there is a perception in Latin America that global free trade based on the globalization process is unfair because it causes poverty instead of wealth. In addition, there is another view of modern economic growth as having produced divergences in many states during the 19th century and early 20th century, generating the current cross-country differences in economic performances in income per capita that result in different levels of wellbeing in the world today [Acemoglu, 2009; Lawrence, Weinstein, 1999; Ocampo, 2004].

Even in China, there is a strong policy, particularly since the GFC, of disinterest in further global liberalization and an emphasis on bilateral and mega free trade agreements (FTAs) in the Asia-Pacific region aimed at reducing U.S. influence there. Since the GFC, support for globalization worldwide has been clearly reduced, and it has become dramatically negative in the U.S. and the UK in particular [Boutin et al., 2011; Hillebrand et al., 2010].

P. Samuelson urged in 1972 [2004] that the aggregate gains from trade are not necessarily positive for all states. He expanded his idea further to claim that economic growth in the rest of the world can damage a country if it takes place in sectors that compete with its native exports having a comparative disadvantage. A state's relative and even absolute gross domestic product (GDP) per capita can fall in such a condition. R. Gomory and B. Baumol [2009] extended Samuelson's theory and argued that there are several possible equilibria with vastly different outcomes for countries involved in a modern free trade world and urged the U.S. to adopt protectionism in trade

However, L. Bhagwati [2009] criticized the use of Samuelson's explanation as a justification for U.S. protectionism. He also denied Gomory and Baumol's argument because the U.S. could not carry out effective industrial policies to remedy protectionism although their argument is true. P. R. Krugman and M. Obsfeld [2009] supported Bhagwati's critique that it is an empirical question rather than a fact as to whether the growth of East Asian countries has actually hurt advanced countries, although the theoretical possibility exists.

Economists have developed theoretical models for free trade and estimated welfare gains from reducing or eliminating trade barriers. In line with these models, Krugman, as well as C. Broda and D. E. Weinstein [2006], suggested that free trade benefits society through overall gains in quality and variety. However, this standard static growth from free trade has left trade promoters quite vulnerable because static growth models consider only short-run, partial equilibrium efficiency gains.

To deepen theoretical models finding long term efficiency gains and the contribution of free trade to economic growth, economists have developed dynamic models using cross-country regressions to estimate the impacts of trade liberalization. However, D. Acemoglu [2009] left the issue of trade and growth undecided because there are models that highlight both positive and negative effects of trade

on economic growth, so that empirical work must be conducted further. Furthermore, H. Lewer and J. J. van den Berg [2007] pointed out that both further development of dynamic models and additional empirical research are required. Additionally, linkages between trade and technology, as well as trade and institutional quality, must be further developed [Bradford, Greico, Hufbauer, 2006; Feenstra et al., 2009].

In this analysis, dynamic models are adopted, despite the necessity of further development, rather than static models because the former can explain the long-term benefits of free trade more precisely than the latter. Accordingly, the conservative dualism of trade theory explains why U.S. protectionism has emerged since the GFC; it accounts for the Trump and Biden governments' trade policy better than any other theoretical position. However, even dynamic models have a limited ability to explain sustainable global economic growth. Dynamic models based on long-term efficiency gains and economic growth can correct the direction of protectionism toward free trade. Furthermore, they also provide exposition because the trade imbalance between the U.S., the EU, and East Asian countries has widened in the 21st century, in particular [Dunn, 2015].

Review of U.S. Protectionism

Background

Several years of relatively high economic growth prior to the GFC and large income inequality after the crisis caused a rise in political populism in the EU and the U.S. that resulted in the Brexit referendum and the arrival of the Trump administration. Paradoxically, the two major pro-globalization leaders, the U.S. and the UK, have turned to a deglobalization process based on protectionism since the GFC, and the world has witnessed a combination of economic and political risks that could severely affect the global economy. Many states, particularly in East Asia, are concerned that deglobalization and protectionism could negatively impact their national economic growth strategies.

Major Reasons for U.S. Protectionism

Global trade has become more protectionist since the GFC, particularly after 2015, and the U.S.—the largest economy in the world—has led this trend, with significant effects on the global economy. Protectionist trade policy has always existed, even in the global free trade system. While tariffs on trade in advanced and developing countries have declined continuously since the 1980s, the use of non-tariff barriers started to increase in the 1990s. The U.S.' protectionism is regarded as in line with this trend and seriously impacts the global economy due to its economic size compared with others. There are three major reasons why U.S. protectionism has been strengthened recently, as follows.

The first may be that income inequality and distribution in the U.S. has risen since the 2000s. Economists are not sure yet whether free trade created income inequality. Some argue that free trade accounted for only about 20% of the increase in inequality in the 1970s and 1980s, when U.S. trade was mostly North-North (between developed countries). With the shift of trade relations to North-South (between developed and developing countries), a negative impact on low-wage workers in the U.S. took place after the 1990s. Whatever the cause of the rise in inequality, the fact is that the average real wage of production per hour has been stagnant since the 1980s. As a result, the wage increase in production has lagged the growth in real GDP per capita. Moreover, the share of pre-tax income in the top 1% increased from 10.5% in 1980 to over 20.2% in 2020, while its share of the bottom 50% declined from 20.5% to 10.2% during the same period. These shares accounted for 20% and 13% in 2015, respectively. This means that inequality increased radically when the COVID-19 pandemic began in December 2019. As a result, the level of inequality in 2020 was higher than in 1980 [Alvaredo et al., 2017; Piketty, 2014; York, 2023] (see Figure 1).

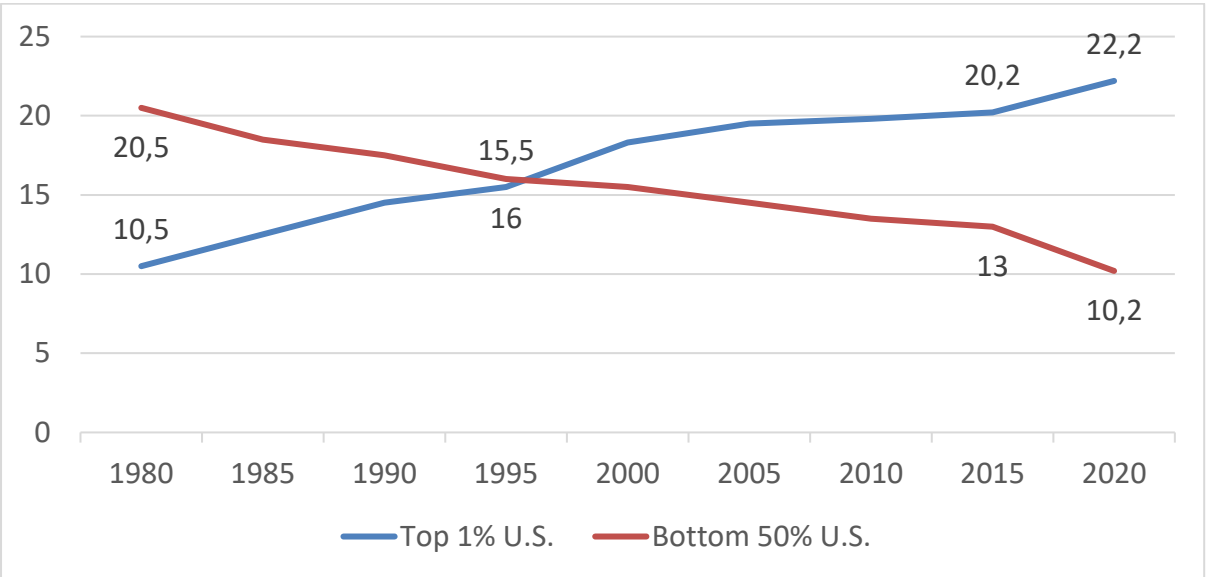

Figure 1. Share of Pre-Tax Income in the U.S. (1980–2020)

Source: M. Bouton et al. [2011] and Hillebrand [2010].

The second reason for increased U.S. protectionism may be the rise of East Asia, which changes trade relationships between the U.S. and East Asia. East Asian economies have grown since World War II largely due to trade expansion based on comparative competitiveness. Certainly, the U.S. and EU markets have also played significant roles in the rapid development of East Asian economies. The Japanese economy developed first, during the 1960s and 1970s, and the "Asian tigers"—Hong Kong, Singapore, Korea, and Taiwan"—followed over the 1980s and 1990s. China emerged in the 2000s.

The U.S. government had hoped Chinese membership in the World Trade Organization (WTO) would promote harmonious interdependence in the global trade system. In reality, however, the U.S. started to fear China as a strategic rival and a sense of vulnerability has been rising since China became the second largest economy in the world in 2010. The U.S. government and public possess a strong impression that China carries out unfair trade policies and regard Japan and Korea as more favourable trade partners in East Asia. In addition, the U.S. government emphasizes that China poses not only an economic, but also a multifaceted, threat to the United States. Chinese mercantilism and its comparative advantage weakened the U.S.' manufacturing sectors and industrial bases, which could disturb the domestic production of weaponry in time of war because U.S. defence firms rely on many outsourced productions from China [Bouton, 2011; Hillebrand, 2010].

Therefore, several trade restriction measures were implemented, even by the Obama government, that were tariff based but frequently regulatory. The Obama government added the Buy American clause to its economic stimulus programme in 2009. It was a protectionist policy designed to generate a maximum stimulus to the domestic economy. This trend has persisted, and it has been strengthened in the Trump and Biden governments via the America First and Made in America Policies in 2017 and 2021, respectively [Genereux, 2017; The White House, 2022b].

The third reason for the rise in U.S. protectionism may be the low degree of dependency of the U.S. economy on global trade, along with Brazil and China. The U.S. is the least global-trade-dependent economy in the world. Its trade share based on GDP in 2009, 2017, and 2021, accounted for 25%, 27%, and 25%, respectively, while the Chinese share of GDP was 45%, 38%, and 37%, respectively. Countries depending on exports as a primary source of growth could be directly and negatively impacted by import tariffs and other trade restrictions. In a protectionist context, small, open economies may be more vulnerable than large, closed ones. In the global trade system, the former may be Korea and Thailand in East Asia, or the Netherlands in Europe, while the latter may

be the U.S. and Brazil. This means that the U.S. economy may be the least affected by protectionism due to its low trade dependency and explains why the Obama, Trump, and Biden governments implemented their protectionist policies [Hofschire et al., 2017; The World Bank, n.d.] (see Figure 2).

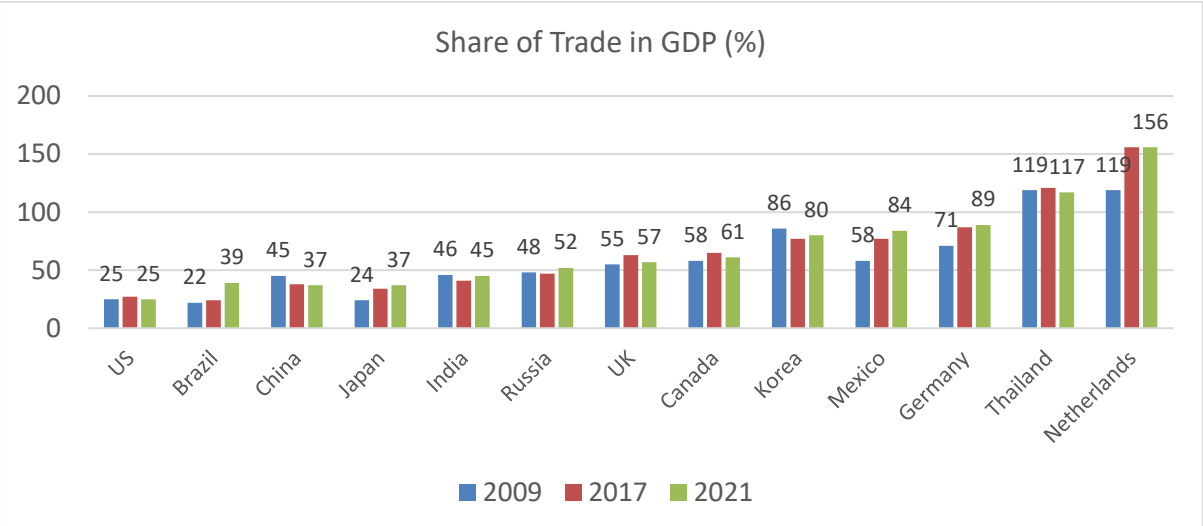

Figure 2. Trade Openness by Countries (2009, 2017, and 2021)

Source: World Bank [n.d.].

Trends of U.S. Protectionism

The Obama's Buy American provision included in the $787 billion economic stimulus act requires all public projects funded by the bill to use only U.S.-made products. Many local jurisdictions found that it was not easy to comply with the mandate because many products contained components from around; thus, the provision had a devastating impact on municipal procurement in general. Additionally, it could cause retaliating measures from other countries as well. Therefore, Republicans urged the Obama government to roll back the Buy American mandate that was regarded as U.S. protectionism [Palmer, 2009].

With the Trump administration in January 2017, U.S. protectionism in terms of trade focused on creating new jobs and attracting foreign direct investment (FDI) in the domestic market based on high tariffs for import goods and tax reduction for export goods. This version of U.S. protectionism was based on mercantilism, which regards world trade in terms of winners and losers based on a positive trade balance. Therefore, the U.S. government criticized China, Japan, Korea, and all free trade agreements such as North American Free Trade Agreement (NAFTA) and the Korea-U.S. Free Trade Agreement (KORUS FTA). Based on this simplistic analytical framework, President Trump ordered the withdrawal from the Trans-Pacific Partnership (TPP) and revamped NAFTA and KORUS FTA, which were revised as the United States-Mexico-Canada Agreement (USMCA) and new KORUS FTA in 2020. In line with this policy, the U.S. government weighed punitive tariffs against its major trade partners in general, and China in particular. It also pressured domestic firms to alter their economic decisions to invest abroad. In doing so, the U.S. government strongly signalled that it may reevaluate its roles in the global economic and geopolitical order [Feinman, 2016; Genereux, 2017; USTR, 2017a, 2017b].

The Biden government announced that the U.S. is committed to building a free and open Indo-Pacific region, which is more connected, prosperous, secure, and resilient. It is the U.S.' vision to launch the Indo-Pacific Strategy (IPS), recognizing the strategic value of an increasing regional role for the EU as well. The EU also responded by announcing its cooperation in the IPS in line with the

U.S strategy of democratic resilience for economic security. The IPS has five objectives: free and open IndoPacific, connections within and beyond the region, regional prosperity, Indo-Pacific security, and regional resilience to transnational threats [The White House, 2022c].

To implement this strategy, the Biden government pursued 10 core action plans until late 2023. For economic cooperation in the region, the Indo-Pacific Economic Framework (IPEF), as one of these action plans, was proposed in October 2021 in the annual East Asia Summit and was regarded as the centrepiece of the Biden administration's economic strategy in the region. The IPEF consists of four pillars of work: fair and resilient trade; supply chain resilience; infrastructure, clean energy, and decarbonization; and tax and anti-corruption. The U.S. Trade Representative (USTR) deals with the first pillar, while the Department of Commerce (DOC) is in charge of other three [Goodman, Arasaingham, 2022; Natalegawa, Poling, 2022] (see Table 1).

Despite the warm welcome by allies and partners in the region, the Biden administration will face challenges and trade-offs across each pillar due to the diversity of economies and political constraints across the region. The USTR announced that the trade pillar focuses on fair and resilient trade with high ambition, including binding commitments. However, it may be complicated because the IPEF will be an executive action rather than a traditional trade deal requiring congressional approval. This means that the U.S. administration cannot offer increased market access or any other concessions that would require amendments to U.S. laws. In fact, both the Democrats and the Republicans are against any form of new FTAs to open the domestic market. This has led to concerns among allies and partners that the IPEF could be vulnerable to U.S. domestic politics or future administrations because they could abandon the IPEF if it does not contribute to strengthening the U.S. national interests. Therefore, several partners may hesitate to sign on to high standard provisions on digital trade, labour, and environmental standards that do not provide some allies and partners with low and medium level of GDP per capita any short-term economic benefits and political interests [The White House, 2022d].

Table 1. Content and Administration Structure of the IPEF

Pillars	Major Work	Content	Administration in Charge
First	Fair and resilient trade	Labour, environment, digital standard, etc.	USTR
Second	Supply chain resilience	Five strategic industrial sectors: semiconductors, large-sized batteries, critical minerals and materials, and pharmaceutical products	DOC
Third	Infrastructure, clean energy and decarbonization	Cheaper renewable energy than fossil energy, financial support, Build Back Better World (B3W)	DOC
Fourth	Tax and anti-corruption	Least Clear & Least Attractive to Regional Partners: Global Minimum Corporate Tax Agreement (GMCT)	DOC

Source: Author's adaptation based on M. Goodman and A. Arasaingham [2022] and The White House [2022a, 2022d].

Accordingly, the Biden administration, and particularly the DOC, expects that the most developed economies in the region, such as Australia, Japan, Korea, New Zealand, and Singapore, could join the IPEF to actively reshape GSCs. This is especially the case for achieving greater autonomy over the four strategic industrial areas of semiconductors, large capacity batteries, critical minerals and materials, and pharmaceutical products—domains that can revitalize domestic manufacturing and strengthen supply chains. For this purpose, the U.S. Congress passed the Chips and Science Act (CSA) and the Inflation Reduction Act (IRA) to better guarantee sustainable economic and defence security, although there are some disputes between the U.S., Japan, Korea, and

the EU over the conditions of the CSA and the IRA. Among them, Japan, Korea, the U.S., and Taiwan are building the Chip 4 Alliance to prevent China's possible domination over the field. Australia, New Zealand, and Singapore, more specifically, have focused on the economic security aspects of the framework. By contrast, it is expected that India, seven Association of Southeast Asian Nations (ASEAN) states, and Fiji will seek to negotiate with the DOC on the other three pillars in terms that will maximize their economic and political interests. They would choose any pillars among the three for their own national interests, in an à la carte approach. As a result, the Biden government can use regional trade as a tool of economic security, in line with its Made in America Policy, based on reshoring national and international companies for revitalizing domestic manufacturing industries as well as reshaping the GSCs in strategic areas. This is a new form in the evolution of U.S. protectionism [Goodman, Arasaingham, 2022; Goodman, Reinsch, 2022; Natalegawa, Poling, 2022] (see Table 2).

Table 2. Evolution of U.S. Protectionism in Each Administration (2009–2021)

Administration	Obama (2009)	Trump (2017)	Biden (2021)
Policy	Buy American Policy	America First Policy	Made in America Policy
Characters and strategies	-Buying U.S. goods in government procurement -Impossible to buy all U.S. parts and components -Criticized by Republicans as protectionism	-High tariffs on imported goods from China and allies -Tax subsidies to U.S. exports -Supported by Democrats and Republicans: trade conflicts	-No mega FTAs, but IPEF -CSA + IRA -CHIP4 Alliances -Reshaping GSCs in strategic industrial sectors -Reshoring and rebuilding manufacturing -Consensus to check and control China between Democrats and Republicans

Source: Author's adaptation.

The IPEF affected the U.S. international trade balance positively in 2023. The U.S. goods and services deficit amounted to $773 billion, down $178 billion from $951 billion in 2022 because exports increased by $35 billion and imports declined by $143 billion during the same period. This reflected a decrease in goods deficit of $121 billion and an increase of a service surplus of $56 billion. As a result, the goods and service deficits declined from 3.7% of GDP in 2022 to 2.8% of GDP in 2023. The most deficits in goods were from industrial supplies and materials, consumer goods, and automotive vehicles, parts, and engines [U.S. Bureau of Economic Analysis, 2024] (see Figure 3).

The U.S trade in goods deficits were made mainly by the East Asian countries, such as China, Japan, Korea, Vietnam, Taiwan, India, Thailand, and Malaysia, as well as the neighbouring countries, Mexico and Canada. The third largest goods deficits were made by the EU in 2023, particularly Germany, Ireland, Italy, Austria, and France. Due to the IPEF, the deficit with China declined $102.9 billion to $274.4 billion in 2023, while the deficit with Mexico and Canada increased $21.9 billion to $152.4 billion and $12.2 billion to $67.9 billion, respectively, in the same year. In fact, the former decreased mostly among other major trade partners. This means that the IPEF based on the CSA and the IRA seems to function as planned to tackle strategic industries, particularly in semiconductor and large-sized batteries, which the Chinese government is keen to further develop for its high-tech industries [Goodman, Reinsch, 2022; U.S. Bureau of Economic Analysis, 2024].

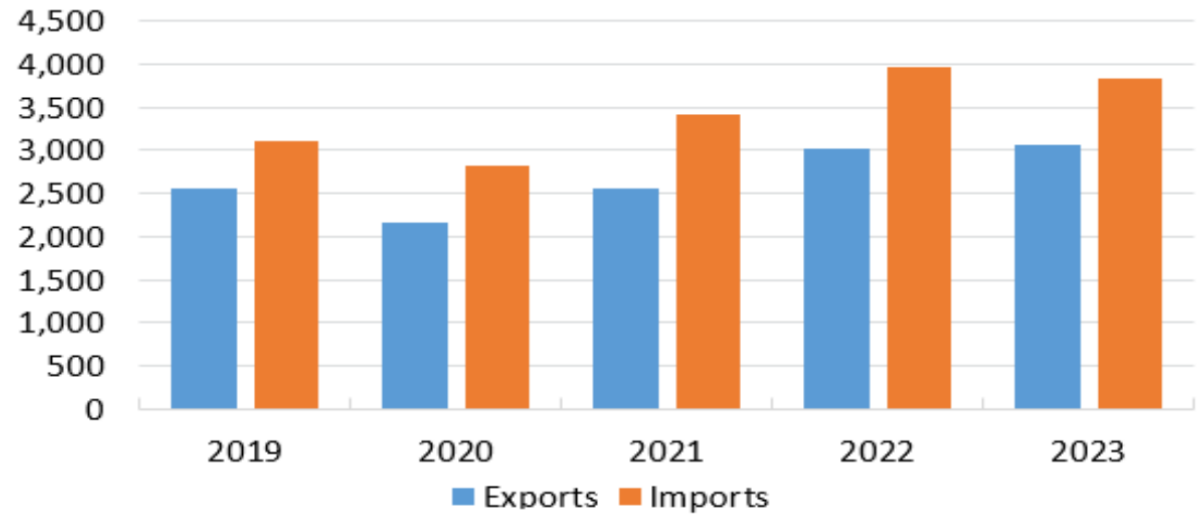

Figure 3. U.S. International Trade in Goods and Services (2019–2023, $ Billion)

Source: U.S. Bureau of Economic Analysis [2024].

China was the largest consumer of semiconductor products, with a share of 31.4% in the world in 2022, and had the largest share of imports with 15.3%, ahead of crude oil at 13.5%. The U.S. exported 36% of its products to China in the same year. Due to the IPEF, Chinese production, export, and import of semiconductor products declined to 11.6%, 12%, and 15.3%, respectively, in 2022. This trend continued, with declines to 1.4%, 5.8%, and 15.2%, respectively, from January to August in 2023 [Yu, 2023] (see Figure 4).

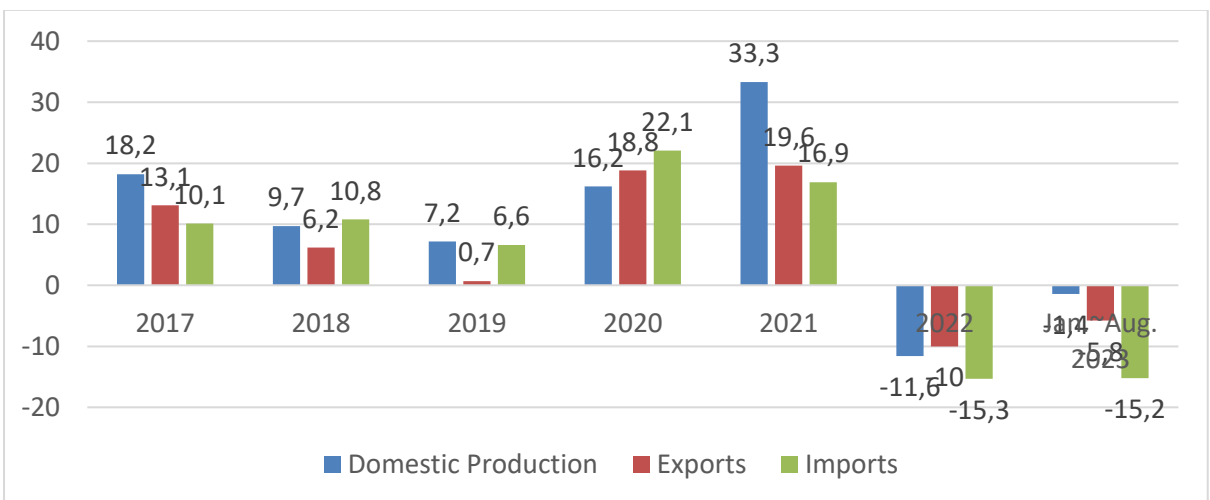

Figure 4. Semiconductor Products and Trade Trends in China (2017–August 2023, %)

Source: General Administration of Customs RC [n.d.] and Semiconductor Industry Association [2023].

The U.S. import of large-sized batteries (lithium-ion battery) increased continuously from 2020 to 2022. It increased from $4.81 billion in 2020 to $13.9 billion in 2022, nearly a tripled growth. The largest exporter was China, accounting for $9.3 billion; Korea and Japan followed with $1.3 billion

and $1 billion, respectively. This is the reason the IPEF allows U.S. allies to invest in the U.S. market for producing large-sized batteries directly, while prohibiting Chinese investments in this sector [Richter, 2023] (see Figure 5).

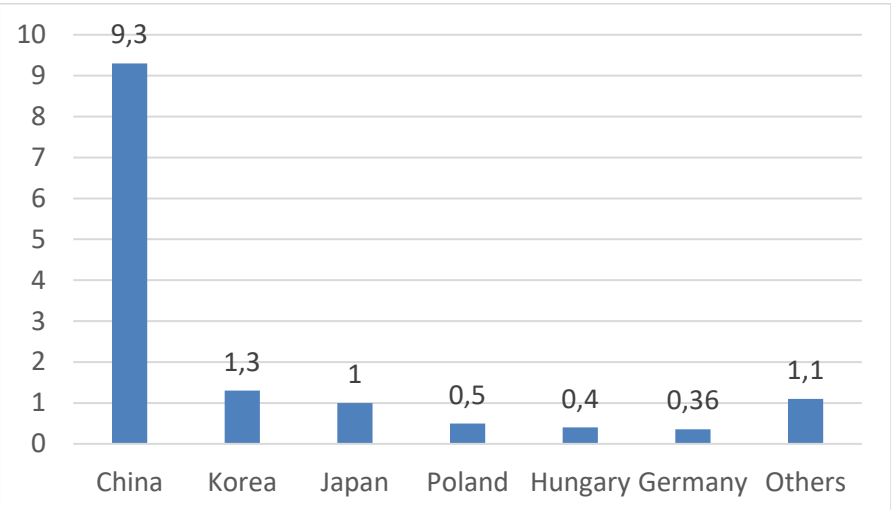

Figure 5. Major Exporters of Large-Sized Batteries to the U.S. (2022, $ Billion)

Source: UN Comtrade [n.d.].

The EU's Approach to Protectionism

Background

As explained, the GFC escalated existing anti-globalization sentiments and created views of opposition to liberalized trade resulting from neoliberalism. Under this condition, many countries attempted to curtail imports and impose other restrictions on trade. As a result, at Group of 20 (G20) leaders summits and the meetings of finance ministers and central bank governors, it was agreed to fight against all forms of protectionism and maintain open trade. Despite such a clear political economic statement by the major countries, the WTO addressed its official views on the new trend of increased trade protectionism as being a result of deepening global economic crisis.

In the past, the EU had concluded trade agreements mainly with neighbouring countries for building EU free trade zones, and with former colonies for trade diversion effects. Contrary to this, the U.S. and other states concluded ambitious bilateral free trade agreements based on competitive liberalization. In 2006, the EU's trade strategy turned to the global Europe that preferred to FTA partners based on market potential, level of protection against EU exports, and negotiations with EU competitors. After 2015, the EU implemented a new trade strategy called Trade for All. It aims mainly to deliver economic growth and new jobs without compromising core principles [Gstöhl, 2016].

EU's Trade Policy

The EU's trade policy for global Europe focused on bilateral FTAs and bloc-to-bloc agreements, particularly with ASEAN, the South American Trade Bloc (Mercosur), and the Gulf Cooperation Council (GCC). In the bilateral FTAs, the EU envisaged its possible important partners to include India, Japan, Russia, and Korea. Additionally, the EU also communicated with China about bilateral FTA talks. In fact, the EU regarded China as the single greatest test of Europe's capacity to generate economic growth and employment in the globalization of trade policy. As a result, a far-reaching FTA with Korea was signed in 2010 and ratified by the European Parliament. The EU-Korea FTA was the

first FTA with an Asian country, the first of the new generation of FTA, and a benchmark agreement [de Prado, 2014].

The GFC and the sovereign debt crisis hit the Europe 2020 Strategy following up on the renewed Lisbon Strategy. The Europe 2020 strategy was aimed at smart, sustainable, and inclusive growth. In this context, the strategy for trade, growth, and world affairs (TGWA) was regarded as an update of the EU's global Europe strategy since 2010. It emphasized reciprocity, particularly in relation to emerging economies, and that the EU's trade and foreign policies must be mutually reinforcing and encourage its partners to promote the respect of human rights, labour and environmental standards, sustainable development, and investment.

The target partners for the TGWA strategy were large economies such as the U.S., Japan, and Canada; individual ASEAN states were included because the bloc-to-bloc approach had failed. In the early 2010s, global trade was confronting protectionism, and global economic conditions were still sluggish. Therefore, major economies tried to set up mega FTAs such as the Regional Comprehensive Economic Partnership (RCEP) and the TPP. The EU was no exception and began talks on the Bilateral Investment Agreement (BIA) with China, while the U.S. engaged with the TPP. To strengthen cross-Atlantic economic cooperation, the EU opened negotiations for the Transatlantic Trade and Investment Agreement (TTIP) in 2013. These are all strategic responses to the changing global trade order [Gstöhl, 2016].

In the midst of increasing controversy over the TTIP due to the investor-state dispute settlement (ISDS) mechanism, the EU presented a new trade strategy called Trade for All in 2015. In the new strategy, the EU focused on more transparency, regulatory issues and dispute settlement in investment, and concerns about the external effects of FTAs. As a result, it generated higher transparency in the standard practice of TTIP and other negotiations and effectively extended to trade defence. The EU's strategic focus is to ensure trade agreements delivering concrete benefits to its economy and people— that is, economic growth and employment in the EU [European Commission, 2021].

To ensure fairness in open trade, the EU has used all possible tools to enforce commitments undertaken by FTA-concluded partners. It claims to have removed trade barriers and to prohibit unfair practices so as to safeguard a level playing field for EU companies. Moreover, the EU has enforced its rights through the dispute settlement in the WTO whenever necessary. In this context, the EU pursued 21 complaints in the WTO with 10 trade partners in 2017 and became the second most frequent user of the system, along with the United States. Additionally, trade defence instruments (TDI) have ensured that EU companies face fair competition in open trade. At the same time, the EU has increasingly focused on protecting against the U.S. protectionist measures strengthened by the Trump and Biden governments. Moreover, it has improved reciprocity with China and regarded it as a systemic competitor in 2018 [Titievskaia, 2019].

The EU works closely with stakeholders such as the European Commission, the European Parliament (EP), and its member states to implement and maximize opportunities created by FTAs. In fact, around 40% of the EU's total exports are covered by FTAs implemented or concluded. Therefore, it is imperative for the EU to manage its FTAs properly to generate economic growth and new employment [European Commission, 2017; Titievskaia, 2019] (see Table 3).

Moreover, the European Commission launched a public consultation to replace its outdated Trade for All policy in 2020. It sought to revise the EU's trade policy in the context of rising non-tariff barriers applied by China and the U.S., divergences related to subsidies and state-owned enterprises (SOEs), harsh trade conflicts, and the breakdown of the WTO dispute settlement mechanism in 2019, all of which systematically hinder the open and free trade system. Additionally, disruptions of global supply chains caused by Brexit and the COVID-19 pandemic have significantly weakened the global trade system. The EU implemented its new trade policy in 2021 to respond to these challenges. The European Commission's new trade policy is based on open strategic autonomy and the desire to be a trade actor in its own right, sharing the world around it in line with its own interests and values. Therefore, strategic openness means that the EU prefers to act multilaterally and with like-minded countries around the world. Accordingly, the EU does not have to choose between the U.S. and China but can find a way to cooperate with the two rival powers at equidistance. Particularly, it is trying to

build a fairer and rules-based economic relationship with China and ensure China's greater obligations in international trade. At the same time, it is dealing with negative spillovers caused by Chinese state capitalism and rebalancing the bilateral trade relationship with China [Blockmans, 2021; European Commission, 2020a, 2020b].

The core direction of the EU's new trade strategy is to cooperate with China for organizing resilient supply chains and providing opportunities for foreign market access to EU companies that can generate new jobs and contribute to the EU's post-pandemic economic recovery. Such an approach can create mutual benefits for both transatlantic and EU-China relations. The EU is also trying to revitalize the transatlantic partnership to fight cybercrime, to shape the digital regulatory environment, and to monitor sensitive foreign investment, all of which are posed by China as strategic challenges. The EU-U.S. summit in 2021 strengthened these new transatlantic agendas, but sharp differences remain due to the tensions created during the Trump era and the de facto strengthening of protectionism in the Biden administration [Blockmans, 2021; European Commission, 2021] (see Table 3).

Table 3. EU's Trade Policy Strategies From 1990s to 2015 and After

Period	Trade Policy	Strategy
1990s	Multilateral trade round	Adopt global rules and international regimes
2000–14	Bilateral FTAs for global Europe	-Lisbon Strategy and renewed Lisbon Strategy -WTO based trading system
2015–20	-Trade and foreign policy mutually reinforced based on reciprocity: Trade for All -Support multilateral rules-based trading system -Open trade fair by enforcing dispute settlement in WTO	-Europe 2020 Strategy and TGWA Strategy -Protecting trade threat from U.S. protectionism -Improving reciprocity against rise of China
Since 2021	-New trade policy -Imposing NZIA and CRMA	-Open to the world rather than protectionist -Sustainable for climate objectives and human rights -Assertive to fight unfair trade and pursue its own interests

Source: Author's adaptation.

EU's Countermeasures to U.S. Protectionism

The U.S. IRA is regarded as a turning point in economic and climate policies and raised discussions in the EU about transatlantic relations and the EU's competitiveness. In fact, the IRA is the largest U.S. investment in clean energy and will mobilize nearly $370 billion by 2032. Moreover, it provides participating companies various incentives and limited penalties. Therefore, this act is regarded as an approach that is heavy on carrots while light on sticks for national and international companies. Under such a circumstance, however, the EU is already in a disadvantageous position due to a weak currency against the dollar, high energy prices, non-harmonized EU funds, and complex regulation. Therefore, it is highly possible that the IRA may trigger further business relocation of EU companies to the U.S in key and strategic industries [Brunswick Geopolitical, 2023].

It is expected that the IRA will bring a high amount of domestic and foreign investments in green industries in the U.S., which are carried out not only by the electric vehicle manufacturers, but also by other green technology companies. Whether or not this is framed as a new version of protectionism by the Biden government is still unclear because the green transition generally is not

regarded as a zero-sum game, but a win-win one. Therefore, the EU's countermeasures are also less clear, and the European Commission finally unveiled its unofficial countermeasure to the IRA in February 2023, called the Green Deal Industrial Plan (GDIP). It is composed of four pillars: less red tape, skills, trade, and funding [Holzhausen, 2023].

The pillars of less red tape, skills, and trade are all routine initiatives in these fields, but there are some new and sound policy measures that contain one-stop-shops for permissions with maximum approval periods and regulatory sandboxes for new and emerging technologies and start-ups. Additionally, recruiting and supporting talent and skills in green technology is included; this is also acknowledged by the IRA. Regarding trade, there is no reference to the U.S. despite the protectionist measures within the IRA. Last, there are various sources of funding available. These include the already approved 250 billion euros of the Recovery and Resilient Fund (RRF) for the green transition and 270 billion euros through the REPowerEU Plan that account for over 520 billion euros and exceed the IRA's fund by a wide margin. Additionally, the EU can utilize its annual budget through cohesion funds and various other programmes and funds such as Horizon Europe, Invest EU, and the Innovation Fund, despite their wider scope than the green transition responding to the IRA [Holzhausen, 2023] (see Table 4).

Table 4. Comparison Between the U.S.' IRA and the EU's GDIP

	The U.S.' IRA	**The EU's GDIP**
Investment	$370 billion	-Euro 250 billion (RRF) -Euro 270 billion (REPoswerEU) -Annual budget (cohesion funds) -Various programmes and funds (Horizon Europe, Invest EU, the Innovation Fund)
Total	$370 Billion	Euro 520 billion + alpha

Source: Author's adaptation

The GDIP is regarded by the European Commission as a pragmatic response to the protectionist measures of the IRA and appeals to the consensus of the members against U.S. protectionism. This approach can buy time for the EU. However, it is not up to the challenge of fighting against the climate crisis or the post Ukraine War geopolitical reality. The GDIP outlined the EU's net-zero energy technology manufacturing ecosystem to strengthen investments and to become the industrial leader in the market in the future. For this, the European Commission requested the proposal of the Net-Zero Industry Act (NZIA) regulation in February 2023 and the Critical Raw Materials Act (CRMA) in March 2023 that aim at improving investment, lowering administrative burdens, facilitating access to markets, and ensuring critical raw materials [Brunswick Geopolitical, 2023; European Commission, 2023a, 2023c; Holzhausen, 2023].

Responding properly to the U.S. CSA with the investment of $53 billion is also a challenging task for the EU. Semiconductor chips are regarded as strategic assets for key industrial value chains, particularly in highly automated vehicles, cloud, internet of things (IoT), connectivity, space, defence, and supercomputers. In 2020, one trillion microchips were produced in the world, and the EU's microchips market share accounted for about 10% of the global demand. The European Commission highlighted that domestic industry expects a doubled demand for microchips by 2030 over 2022. This reflects the growing importance of semiconductors for industry and society. It will be a great challenge for the EU to meet the increasing demand owing to the disturbance of semiconductor supply chains during the pandemic period. Furthermore, the EU is highly dependent on the import of semiconductor by East Asian countries such as Korea and Taiwan [European Commission, n.d.].

To strengthen semiconductor production capacity in the EU, the European Commission submitted the proposal for the European Chips Act (ECA) to the European Parliament and the

European Council in February 2022 after publishing the European Chips Survey Report. The overarching ambition of the EU is to double production of semiconductor products from 2022 levels by 2030 in order to meet the domestic demand. To accomplish this, the EU will mobilize more than 43 billion euros of private and public investments. Moreover, it will set measures to prepare and respond to any future supply chain disruptions together with member states and international partners [European Commission, n.d.].

Analysis of U.S and the EU Protectionism and Their Impacts on East Asian Economies

U.S. Protectionism and Its Impacts on East Asian Economies

U.S. trade policy has become substantially more protectionist since the Trump administration oversaw severe trade conflicts with China and other major economies such as the EU, Japan, Canada, and Korea. This is continuing under the Biden government and has expanded to technology conflicts in the four core strategic areas of semiconductors, large capacity batteries, critical minerals and materials, and domestic production of pharmaceutical products generic drugs [Park, 2021; Pederson, 2021; Steinberg, Tan, 2022].

These high-tech areas must be secured for the domestic supply and value chains with core allies such as Japan and Korea in the Indo-Pacific region. These are regarded as strategic key industrial sectors for U.S. national security. The U.S. government has strongly recommended that its allies producing semiconductors and large capacity batteries should build manufacturing facilities and expand their production capacities on U.S. soil, in line with reshaping GSCs and GVCs. It regards these high-tech sectors as strategic infrastructures for its national security and at the same time as a reshoring policy to revitalize domestic manufacturing industries. For this reason, the U.S. government enacted the CSA and the IRA in 2021, subsequently passed by the U.S. Congress in 2022. These legal frameworks are core tools to implement the IPEF in line with the IPS. The IPEF is not a conventional FTA providing access to the U.S. market for participating countries but is rather an economic cooperation and alliance based on the industrial and technological capacity of participating countries to reshape GSCs and GVCs against China in the region [Pederson, 2021; The White House, 2022a, 2022b; Wolf, 2020].

The U.S. government expects that the CSA can make smart investments from national and international companies in the U.S. market. After the passage of the CSA in 2022, U.S. companies announced investments in semiconductor manufacturing, with Micron committing nearly $40 billion and Qualcomm and Global Foundries investing $4.2 billion. Micron expects to create about 40,000 new jobs, and other companies may increase their semiconductor products in the U.S. by 50% over the next five years. Moreover, the Biden government has attracted foreign investments of $100 billion, mainly from Korea, Japan, and Taiwan, since he took office. In total, private investments worth more than $210 billion have been announced across 20 states to increase domestic semiconductor manufacturing capacity by the end of 2022. The U.S. government expects that the CSA will boost R&D and production in the U.S. semiconductor industry to ensure U.S. leadership in the technology, which forms the foundation of everything from automobiles to household appliances and even to defence systems [Casanova, 2022; The White House, 2022a].

The CSA provides $52.7 billion in total for the U.S.' R&D, manufacturing, and workforce development. Of the total, $39 billion will be used for manufacturing incentives for domestic and international companies, including $2 billion for the legacy semiconductor chips in antivehicle and defence systems. Moreover, $13.2 billion will be invested in R&D activity and workforce development, while $500 million will be provided for the security of information and communication technology (ICT) and semiconductor supply chain activities. The CSA also promotes U.S. innovation in wireless supply chains by investing an additional $1.5 billion to build open and interoperable radio access networks. Further, a tax credit for capital expenses in manufacturing of semiconductors and related equipment is planned for domestic and international companies investing in the U.S. market.

The Biden government estimates that these investments will secure domestic supply chains and create tens of thousands of jobs in construction and high-skilled manufacturing sectors [Kannan, Feldgoise, 2022; The White House, 2022a] (see Table 5).

The CSA is not a free lunch for recipients and has strict regulations. It requires all recipients to carry out significant worker and community investments and create opportunities for small businesses and disadvantaged communities. Furthermore, it demands that semiconductor incentives must support equitable economic growth and development. At the same time, the CSA has strong guardrails that do not allow recipients to build certain facilities in China and other countries of concern or to make any stock buybacks or shareholder dividends. Last, it supports union construction jobs, specifically by requiring Davis-Bacon prevailing wage rates for facilities built with semiconductor chips related fundings. All these measures contain protectionist trends to increase non-tariff barriers based on technology exports against China and market restrictions to Korea, Japan, and Taiwan [The White House, 2022a].

Table 5. Investments in the CSA and Expected Companies' Investments

Fund and Investments	Programme	Investment
CSA Fund	Manufacturing Incentives	$39 billion
	R&D	$11 billion
	Workforce Development	$2.2 billion
	Security for ICT and SCA	$500 million
	Total	$52.7 billion
Public Wireless Supply Chain Fund	Open and Interoperable Radio Access Networks	$1.5 billion
Company Investment	Micron (U.S.) Qualcomm and Global Foundries (U.S.) Samsung Electronics (ROK) SK Siltron CSS (ROK) Kanto/Chemtrade JV (Japan) TSMC (Taiwan)	$40 billion $4.2 billion $17 billion $300 million $250 million $40 billion

Source: Author's adaptation based on R. Casanova [2022], V. Kannan and J. Feldgoise [2022], and The White House [2022a].

Given the strong guardrails, all recipients of the CSA funds may not export semiconductor chips over 14-nanometer to China and cannot install any of the latest equipment for semiconductor production in China for 10 years. Additionally, they must submit internal information about expected margin and stock ratios that is regarded by private companies as confidential. As a result, China may face difficulties purchasing high-level semiconductor products for high-tech industries, which could lead to a weakening of its global competitiveness in the longer term because China cannot produce highly sophisticated semiconductor products in the near future. At the same time, Korean semiconductor producers need to get time-limited special permissions to upgrade equipment in their labs in China, while the U.S. and Japanese core equipment producers are banned from exporting their high-level products to China [Fitri, 2022].

Furthermore, both recipients and non-recipients of the CSA funds will be subject to retaliation measures and secondary boycotts, respectively, if they violate the regulations. Therefore, the CSA is regarded as a de facto protectionist measure against China in the name of economic security to reshape the GSCs within the U.S. and among economic allies. The real economic impacts of the CSA on Korea, Japan, and Taiwan have not yet taken place. However, these will cause great economic loss for them because China is the largest market of semiconductor products in the world, and the U.S market is not a substitute for it. In particular, Korea is disadvantaged due to the large share of the semiconductor industry in the national economy, which accounts for about 20% in 2022, and the high portion of its exports to China, with 41% of the total semiconductor products in the same year. Given

the analysis of the Korea Development Institute (KDI), the Korean economic growth rate will decline 0.78% if Korean exports of semiconductor products decline 10%. As a result, Korean GDP grew only 1.4% in 2023, which is one of the lowest economic growths since 1962 [BOK, 2024; Fitri, 2022; KDI, 2023; KITA, 2023; The White House, 2022a] (see Figure 6).

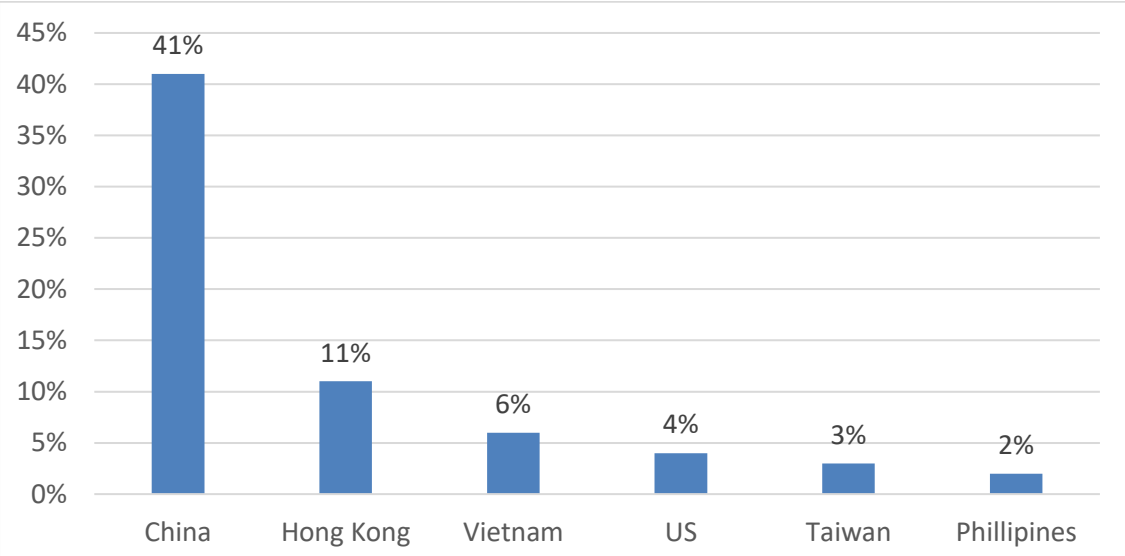

Figure 6. Share of Korean Semiconductor Exports (2022)

Source: KITA [2023].

Although the U.S. government has been able to sustain semiconductor products for domestic demands, problems remain. The production cost of the semiconductor products made in the U.S. can be 50% higher than the cost of those made in China and approximately 30% higher than in Korea and Taiwan. If U.S. companies use semiconductor products produced only in the U.S. for their final goods, the total production cost will increase and will be passed on to U.S. consumers, leading to inflation in the national economy. As a result, the price of Apple's new smartphone using semiconductor products made in the U.S. will increase about $100 from $527 for the iPhone 14 Plus, an increase of 19% over the previous product [Mullaney, 2023].

The IRA represents another pillar of U.S. protectionism. It was signed into law in August 2022 and worth $391 billion in tax credits and subsidies for energy and climate-related industries. The act is aimed at driving the U.S. economy into clean energy leadership. It will offer substantial support, including a $15 billion programme focusing on electric vehicles and improving the charging infrastructure in the U.S. and subsidizing a $7,500 and a $400 tax credit to consumers when they buy new and used electric cars, respectively, that is subject to an income and retail price cap. Moreover, it aims to rebuild the aging infrastructure in the U.S. and revitalize declining regions, mainly in mining and manufacturing industrial areas [Monier, 2023].

There have been polarized responses to the IRA. The positive perspective is that the IRA will push a global decline in greenhouse gas emissions and encourage clean energy resources by cutting the cost of technology and installations. On the other side, the negative perspective claims that it will increase inflation by pushing up energy prices. Either way, potential side effects can occur. Namely, U.S. subsidies could trigger harsh competition among participating countries, mainly those of the EU, Korea, and Japan. Another consequence may be to push the U.S. to further national protectionism, excluding Chinese investment in production facilities and infrastructure. Additionally, the IRA mandates sourcing battery minerals from the U.S. or its FTA partners so that electric vehicles produced in China and Russia are not allowed to be imported to the U.S. market [Monier, 2023;

Sahay, 2022; Spencer, 2022].

Based on an analysis by the Congressional Budget Office (CBO) and Committee for a Reasonable Budget (CRB), the fiscal impact of the IRA will be highly positive until 2031. The annual deficit reduction with interest may increase to nearly $70 billion in 2031, and the cumulative deficit reduction will account for over $325 billion from 2022 to 2031. Moreover, as reported by MIT Technology Review, an MIT analysis predicts that the IRA can generate about 912,000 new jobs per year over 10 years through combined annual private and public investments at $98 billion [Pollin, Lala, Chakraborty, 2022; Sahay, 2022] (see Figure 7).

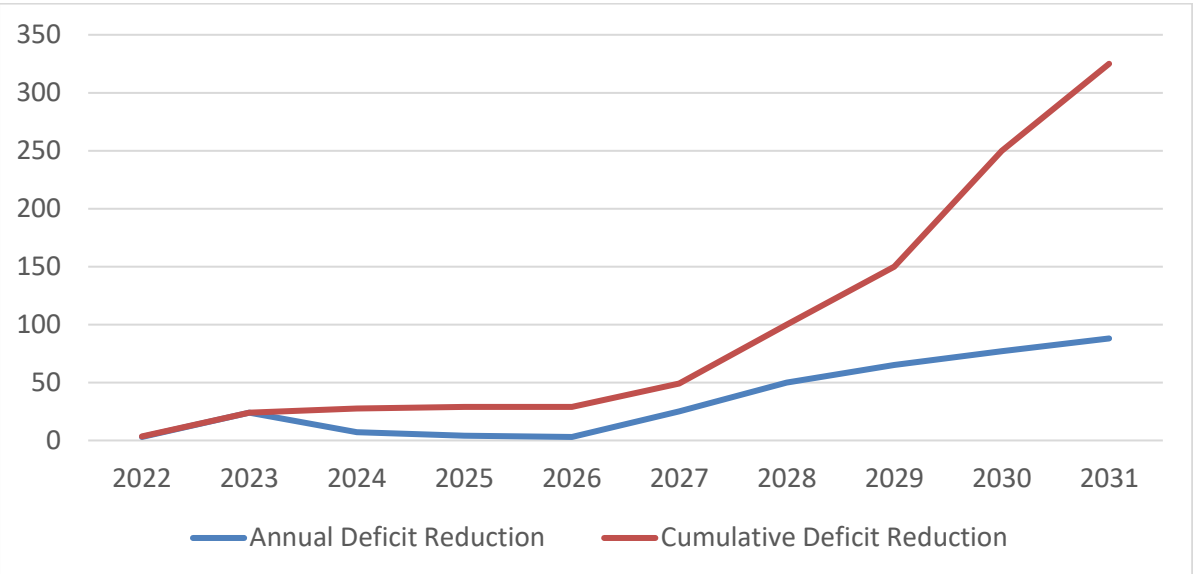

Figure 7. Fiscal Impact of Inflation Reduction Act (2022–31, $ Billion)

Source: Congressional Budget Office (CBO) and Committee for a Reasonable Budget (CRB) [2022].

The Biden government targeted the IRA to negatively impact China and to check and control its rapid expansion in the Indo-Pacific region by excluding its direct market access to the U.S. in electric vehicles, large-sized batteries, and clean energy areas. The IRA can screen Chinese manufacturing products in electric vehicles, lithium batteries, and solar cell products and control their imports, particularly of electric vehicle-related parts and components as well as lithium batteries. However, the IRA does not monitor polar voltaic (PV) products strictly due to the high dependency of value chains in the Chinese solar cell industry, which accounts for an average of 87.5% in polysilicon, wafer, cell, and module. Therefore, Chinese PV producers decided to invest $600 million directly to build their factories in Ohio and Texas to expand their market shares while receiving IRA subsidies. The IRA does not exclude Chinese companies in PV products as it does for large-sized batteries. Despite this, Chinese exports of electric vehicles, batteries, and solar cells to the U.S. increased 88.1% in the first quarter of 2023 [General Administration of Customs PRC, n.d.; Yuen, 2024] (see Figure 8).

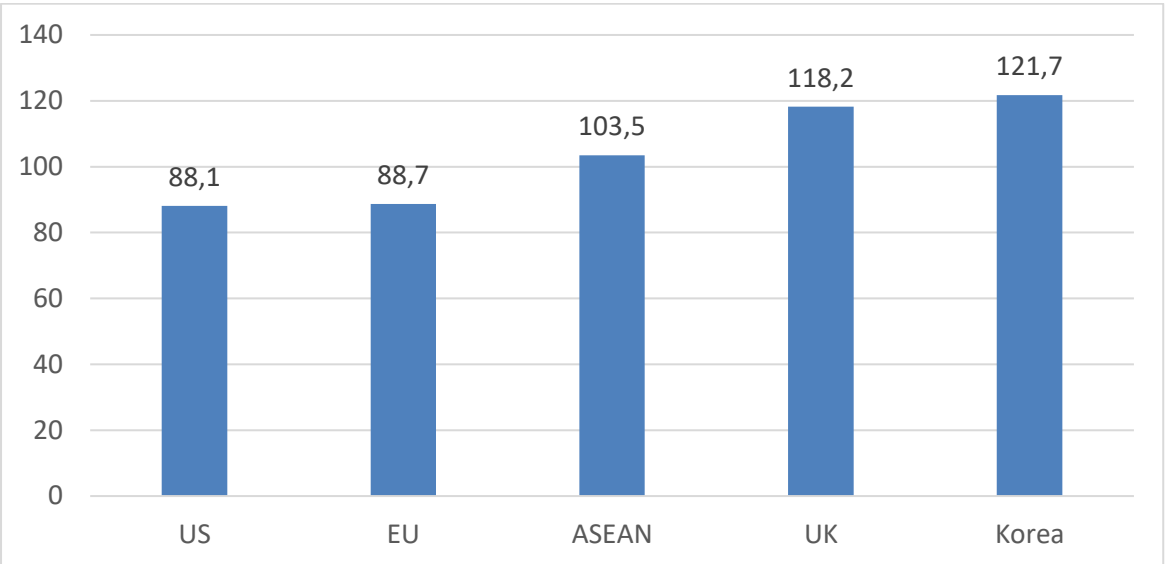

Figure 8. Export Increase Ratio of Chinese Electric Vehicle, Battery, and Solar Cell in Chinese Major Markets (First Quarter of 2023, %)

Source: General Administration of Customs PRC [n.d.].

Korean clean energy and automobile industries with production facilities in the U.S. can generate economic benefits with the IRA. Korean solar cell companies in the U.S. and companies producing power generation and energy storage systems (ESS) can increase price competitiveness with tax benefits under the IRA. On the other side, however, battery companies with production facilities in the U.S. must reduce their high dependence on China for critical material and components. Due to the high dependence on China, Korean, and Japanese EV producers such as Hyundai, Kia, and Toyota failed to receive tax credits, while German car maker, Volkswagen, succeeded in subsidies. To qualify for the tax credits, EVs must be assembled in the U.S. and 40% of EV battery minerals and 50% of components must come from the U.S. or its FTA partners. These targets will increase continuously up to 80% and 100%, respectively, by 2029. In 2023, there were no Korean EVs fulfilling tax credit conditions [Kim, 2022] (see Figures 9 and 10).

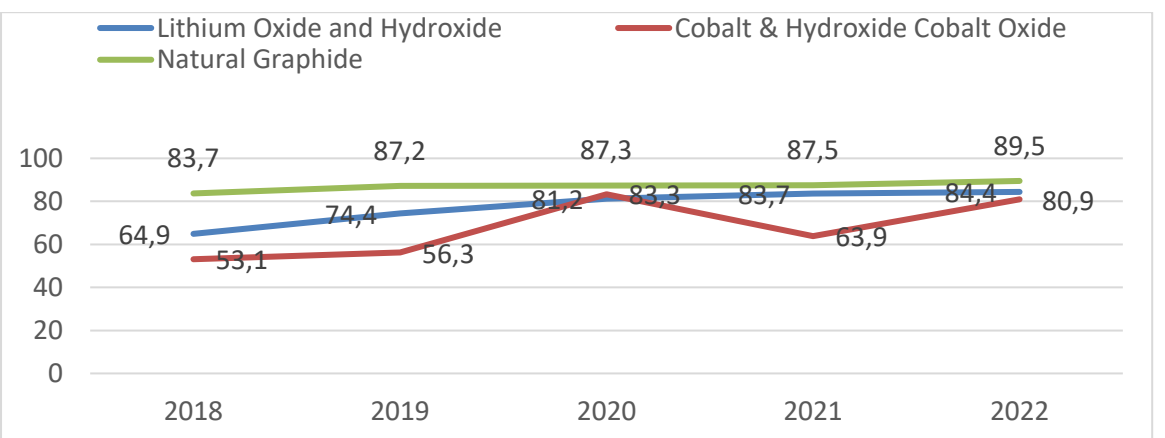

Figure 9. The Ratio of Korea's Dependence on Chinese Battery Minerals (2018–22)

Source: KITA [2023].

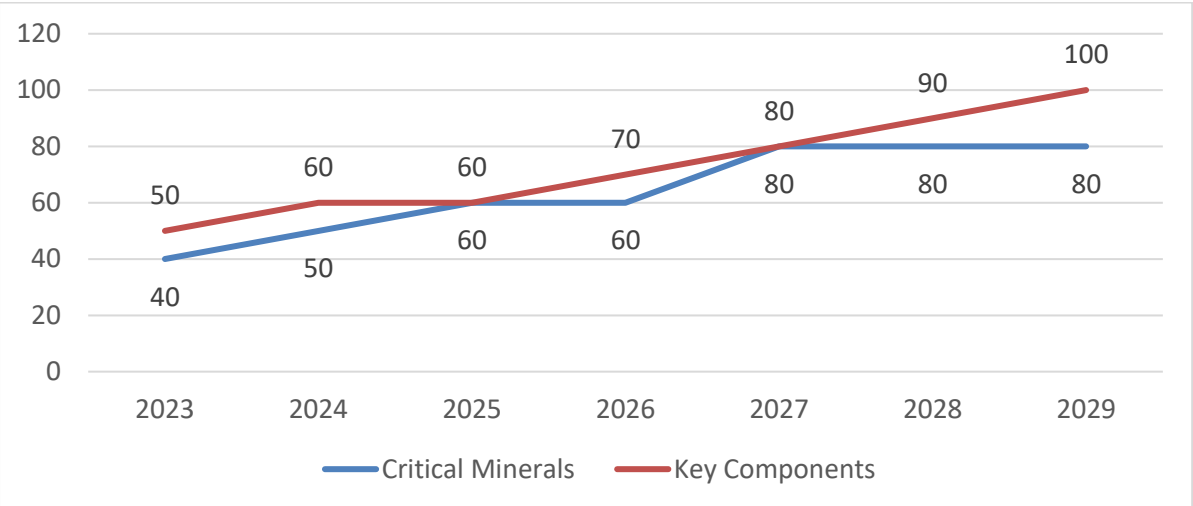

Figure 10. The Ratio of the U.S. Critical Mineral and Battery Component Requirements for the Clean Vehicle Credits (As of 2023–2029)

Source: U.S. Congressional Research Service [2022].

Therefore, there is no choice but for Korean battery and car industries to invest in production facilities in the U.S. to gain economic benefits from the IRA. It is a serious task for Korean battery and automobile industries to localize and diversify the supply of key materials and components to reduce the high dependence on China. These are challenging tasks even to Japanese industries as well. The relatively unstable global investment climate based on rising trade fragmentation risks is also an obstacle for the two countries' investment commitments. Korea and Japan share production links with the U.S. and China. Therefore, negative spillover can take place in their exports to the U.S. and China if U.S.-China trade barriers are intensified [Ho, 2023; Kim, 2022].

China responds differently. The IRA is regarded as a de facto protectionist measure to prevent a Chinese presence in the large-sized battery industry and EVs in the U.S. market. To overcome this trade barrier, China adopted a detour strategy by establishing production facilities in Mexico and Korea. In doing so, Chinese auto vehicle companies such as BYD and Volvo Cars, owned by China's Geely Auto, can avoid tariffs of 27.5% in the U.S. market and obtain access to the subsidies of the IRA because Mexico and Korea are U.S. FTA partners. At the same time, BYD can use Mexico as a springboard for South American markets, while Volvo Cars can export its EVs to the U.S. market [Baek, 2023; Ichihara, 2024].

The EU's Possible Protectionism and Its Impacts on East Asian Economies

The EU still pursues open and multilateral approaches in trade based on WTO principles. Therefore, the EU's official trade policy does not advocate protectionism. However, it must respond to U.S. protectionist measures such as the CSA and the IRA properly. For its part, the EU launched the GDIP proposing the NZIA and the CRMA, and the ECA was also submitted. Additionally, the European carbon adjustment mechanism (CBAM) was ready to be enacted after 1 October 2023. Compared with the U.S. acts, the EU's protectionist measures do not exclude China by securing its own supply chains. Therefore, foreign companies are not forced to invest in the EU but rather to focus on the EU market value and future potential. The EU expects that global production of EVs will increase 15-fold by 2050, while renewable energy resources will nearly quadruple, and heat pumps will increase more than six-fold in the same year. Additionally, hydrogen production will reach 450 Mt by 2050. To achieve this goal, the cumulative global investment in manufacturing accounts for

$1.2 trillion to meet the global targets for manufacturing facilities by 2030. In the amount, China's share will be 90% in manufacturing facilities. This is why the EU cannot exclude China as the largest market in clean energy related industries [European Commission, 2023a, 2023b].

The NZIA and the CRMA attract foreign capital investments in clean energy and automobile industries to meet the high standard of regulations, such as lithium battery life cycle and recycling, for climate neutrality in the EU by 2050. East Asian economies, mainly China and Korea, have invested to produce large-sized batteries for EVs in Germany, Hungary, and Poland. China's aggressive investment in the EU as a result of being blocked from investment in the U.S. market by the IRA is visible, and its share of the EU market in battery products for EVs increased from 15.9% in 2021 to 34% in 2022, while Korean market share declined from 68.2% to 63.5% during the same period. Chinese market share in 2020 was only 4.2%. A more than eight-fold increase of Chinese market share from 2020 to 2022 was based mainly on government funds. Due to strong Chinese government support, Chinese CATL invested in a 100 GWh facility in Hungary in 2022 that will account for nearly $20–25 billion [Kim, 2023; KITA, 2023] (see Figure 11).

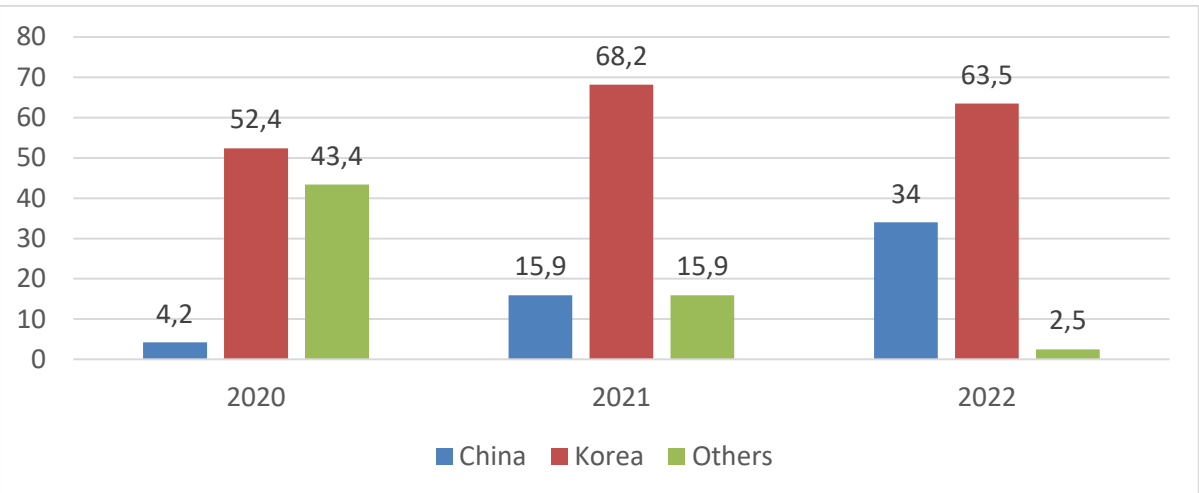

Figure 11. Shares of Chinese and Korean Battery in the EU Market (2022–22)

Source: KITA [2023].

The ECA has also influenced foreign capital investment in the semiconductor industry. The EU intends to increase its production capacity from under 10% in 2021 to 20% in 2030. The ECA proposed 43 billion euros in policy-driven investment by 2030, and the European Commission expects long term private investments to exceed this proposed amount. The act serves to restore semiconductor chips supply disruptions and strengthens production and innovation in European semiconductor value chains.

The U.S. and Taiwan already announced their investments in the EU. Intel's investment plan may generate synergy effects between the European and U.S. semiconductor industries and the high potential for further investment cooperation. Intel plans to invest 80 billion euros in the EU this decade. As an East Asian investor, the Taiwan Semiconductor Manufacturing Company (TSMC) plans to invest a maximum of $44 billion in the EU. TSMC announced its plan to establish its first European semiconductor foundry and advance semiconductor research facilities if EU's subsidies are competitive compared to those offered by the U.S. and Japan. Compared to Taiwan, Korea focused on strategic investments in the U.S. and Japan, while Japan intends to rebuild its own semiconductor industry by pooling foreign investments from Intel, Samsung, and TSMC [Ciani, Nardo, 2022; ESPAS, 2022] (see Figure 12).

Additionally, the EU launched the CBAM on bilateral trade relations in line with the GDIP in October 2023. Given the CBAM, all exporters must report their CO2 emissions until the end of 2025

and have to pay penalties if their CO2 emissions do not substantially decline after January 2026. Most exporters from developing countries, including China, India, and Russia, will face difficulties in reducing their CO2 emissions targets in time. It is still a sensitive issue because WTO compatibility of the CBAM is not yet solved. Therefore, the CBAM may lead to a new form of green protectionism, particularly for East Asian countries such as China, Japan, and Korea, that can hinder further economic integration with the EU [M'hamed, 2022].

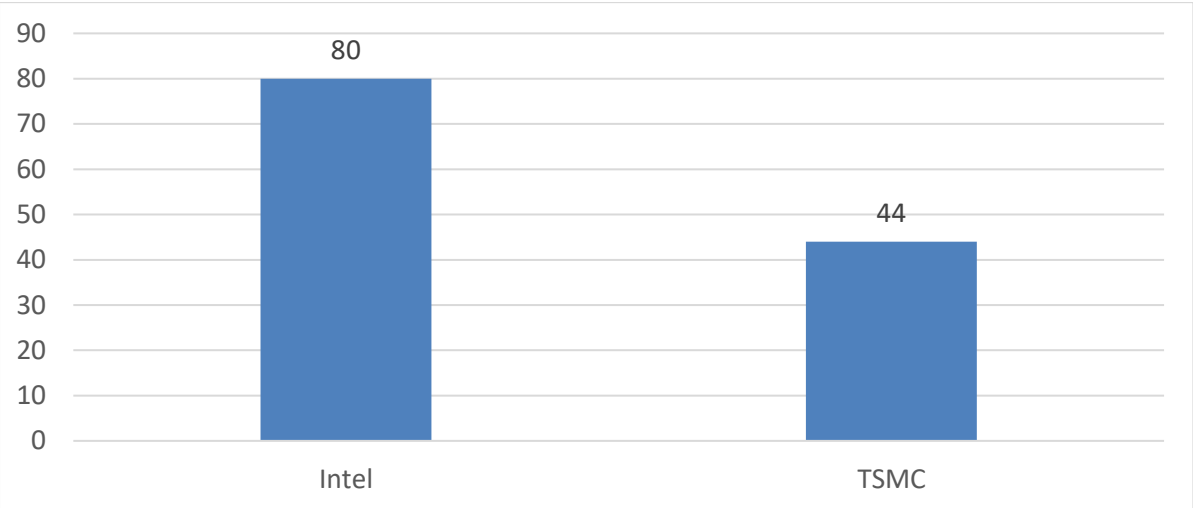

Figure 12. Foreign Investments in the EU Semiconductor Industry (2022, $ Billion)

Source: ESPAS [2022]

Conclusion

While scholars argue about whether we are facing a new global order or a new Cold War, we have been experiencing a new normal in the period following the COVID-19 pandemic and the Ukraine War. Moreover, the trade conflict between the U.S. and China is still an ongoing process and is expanding into a technology conflict under the Biden administration, which has enhanced protectionism in global trade. Under such circumstances, the issue of economic security based on GSCs and GVCs has arisen, and the pursuit of technological hegemony in terms of core technology areas is emphasized. To strengthen its economic and political leadership, the Biden government has upgraded its protectionist trade policy through instruments such as the CSA and the IRA. In fact, these legal frameworks aim to reshape GSCs and GVCs, particularly in strategic high-tech areas, and to restore domestic manufacturing industries, generating new employment and economic growth. Furthermore, they can play their roles in checking and controlling the emerging Chinese economic power in the world in general and in the Indo-Pacific region in particular. In parallel, the EU also focuses on new protectionist measures, such as the NZIA, the ECA, the CRMA, and the CBAM, that are regarded as green protectionism toward external trade partners.

In the Indo-Pacific region, the U.S. seems to have established a better common ground for building the CHIP Four Alliance with its traditional military allies by providing vast tax incentives and subsidies and attracting foreign investments from Korea and Japan. By doing so, the U.S. blocks and systematically excludes Chinese investment in national security and strategic industrial sectors. Even in clean energy industries supported by the IRA, the U.S. core partners are mostly East Asian countries such Korea and Japan as well as the EU. However, China is mostly excluded and tries to implement a detour strategy through Mexico and Korea.

Compared to the U.S. approach, the EU officially tries to maintain the WTO's principles and the new trade policy of the EU does not decouple China from its supply and value chains. However,

the high level of regulation, particularly in environment, investment, IPRs, consumer protection measures, and labour, guaranteed by the NZIA, the CRMA, the ECA, and the CBAM can restrict foreign investments in the EU, particularly from China. As a result, the ECA has attracted investments from Intel and TSMC so far, while Korean and Japanese companies focus their investments on the U.S. market. Additionally, Chinese CATL chose the EU market because its access to the U.S. market was blocked systematically and will compete with Korean companies in the EU market.

In the context of the different trade policy directions adopted by the U.S. and the EU, Korea may benefit compared with other East Asian economies because it possesses two core and strategic industrial sectors—semiconductor and battery industries—that two major global economies need to cooperate if they want to reduce their high dependence on China in terms of core material supplies and the semiconductor market consistently. Japan will benefit with its battery industry in the U.S. and the EU. At the same time, however, it has weak competitiveness in the semiconductor industry. Therefore, it will focus on rebuilding the ecosystem of the semiconductor industry by building domestic alliances and attracting foreign investors such as Intel, Samsung, and TSMC. China's position will not be positive in the long run despite its market entry in the EU because it will face systematic check and control in the strategic high-tech areas from the U.S. and the EU. China still needs to import high-tech products to further develop its industries. If these sectors are banned for China, its industrial development may be delayed. It may be the core strategy of the U.S. and the EU to reduce their chronic trade deficits with China because China must import limited high-tech products from the two global major economies, as well as Korea and Japan, with high prices over the long term. As a result, China's industrial development will be delayed, and it cannot develop these sectors by itself in the near future, despite the Chinese government's plans to invest vast capital and human resources.

References

Acemoglu D. (2009) *Introduction to Modern Economic Growth*. Princeton University Press.

Alvaredo F., Chancel L., Piketty T., Saez E., Zucman G. (2017) Global Inequality Dynamics: New Findings From Wid.World. NBER Working Paper No 23119, National Bureau of Economic Research. Available at: https://www.nber.org/system/files/working_papers/w23119/w23119.pdf (accessed 22 June 2024).

Bank of Korea (BOK) (2024) Hankukeunhaeng Gyoungje Tonggae Sistem [BOK Economic Statistics System]. Available at: https://ecos.bok.or.kr/#/ (accessed 2 March 2024). (in Korean)

Benigno G., Di Giovanni J., Groen J., Noble A. (2022) Global Supply Chain Index: March 2022 Update. *Liberty Street Economics*, 3 March. Federal Reserve Bank of New York. Available at: https://libertystreeteconomics.newyorkfed.org/2022/03/global-supply-chain-pressure-index-march-2022-update/ (accessed 24 April 2023).

Bhagwati J. (2009) Does the US Need a New Trade Policy? *Journal of Policy Modeling*, vol. 31, issue 4, pp. 509–14. Available at: https://doi.org/10.1016/j.jpolmod.2009.05.006

Blockmans S. (2021) The EU's New Trade Policy: An Autonomous Assertion of Strategic Objectives? Friedrich Ebert Stiftung. Available at: https://www.ceps.eu/wp-content/uploads/2021/12/FES-Analysis_The-EUs-New-Trade-Policy_Steven-Blockmans_Sep21-1.pdf (accessed 18 June 2024).

Bouton M., Kull S., Page B., Veltcheva S., Wright T. (2011) Global Views 2010: American Public Opinion and Foreign Policy. ICPSR 31022, Inter-University Consortium for Political and Social Research [distributor]. Available at: https://doi.org/10.3886/ICPSR31022.v1

Bradford S., Greico P., Hufbauer G.C. (2006) The Payoff to America from Globalisation. *The World Economy*, vol. 29, issue 7, pp. 893–916. Available at: https://doi.org/10.1111/j.1467-9701.2006.00828.x

Broda C., Weinstein D.E. (2006) Globalization and the Gains From Variety. *The Quarterly Journal of Economics*, vol. 121, issue 2, pp. 541–85. Available at: https://doi.org/10.1162/qjec.2006.121.2.541

Brunswick Geopolitical (2023) The Inflation Reduction Act: US-EU Relations. 30 March. Available at: https://www.brunswickgroup.com/the-inflation-reduction-act-us-eu-relations-i25272/ (accessed 5 May 2023).

Casanova R. (2022) The CHIPS Act Has Already Sparked $200 Billion in Private Investments for U.S. Semiconductor Production. *Semiconductor Industry Association (SIA) Blog*, 14 December. Available at: https://www.semiconductors.org/the-chips-act-has-already-sparked-200-billion-in-private-investments-for-u-s-semiconductor-production/?utm_campaign=Press%20Releases&utm_medium=email&_hsmi=237815684&_hsenc=p2ANqtz--20D8NQvZpPNgQNhzKPUvh2zM0_KZWvs5Dk_2hzvs8eNJ_Kghk8kTg6gfZ3UbPkSXls0ovd8JQdDijOlEIaH9xp1Lo8YRKTvJz4PS-xULLimdbjzY&utm_content=237815684&utm_source=hs_email (accessed 18 June 2024).

Ciani A., Nardo M. (2022) The Position of the EU in the Semiconductor Value Chain: Evidence on Trade, Foreign Acquisitions, and Ownership. JRC Working Papers in Economics and Finance 2022/3, Joint Research Centre, European Commission. Available at: https://joint-research-centre.ec.europa.eu/system/files/2022-04/JRC129035.pdf (accessed 18 June 2024).

Congressional Budget Office (CBO) Committee for a Reasonable Budget (CRB) (2022) Options for Reducing the Deficit, 2023 to 2032. Vol. 1: Larger Reductions. Available at: https://www.cbo.gov/system/files/2022-12/58164-budget-options-large-effects.pdf (accessed 22 June 2024).

Council on Foreign Relations (n.d.) U.S.-China Relations: 1949–2023. Available at: https://www.cfr.org/timeline/us-china-relations (accessed 24 April 2023).

de Prado C. (2014) Prospects for the EU-Japan Strategic Partnership: a Global Multi-Level and Swot Analysis, Florence & Tokyo: EU-Japan Centre for Industrial Cooperation

Dunn B. (2015) *Neither Free Trade Nor Protection: A Critical Political Economy of Trade Theory and Practice*. Cheltenham and Northampton: Edward Elgar Publishing.

European Commission (2020a) Europe's Moment: Repair and Prepare for the Next Generation. COM(2020) 456 final. Brussels, 27 May. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0456&from=EN (accessed 5 May 2023).

European Commission (2020b) Strategic Foresight Report 2020: Charting the Course Towards a More Resilient Europe. 9 September. Available at: https://commission.europa.eu/strategy-and-policy/strategic-planning/strategic-foresight/2020-strategic-foresight-report_en (accessed 18 June 2024).

European Commission (2021) Trade Policy Review: An Open, Sustainable and Assertive Trade Policy. COM(2021) 66 final. Brussels, 18 February. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:5bf4e9d0-71d2-11eb-9ac9-01aa75ed71a1.0001.02/DOC_1&format=PDF (accessed 4 May 2023).

European Commission (2023a) Proposal for a Regulation of the European Parliament and of the Council on Establishing a Framework of Measures for Strengthening Europe's Net-Zero Technology Products Manufacturing Ecosystem (Net Zero Industry Act). COM(2023) 161 final. Brussels, 16 March. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:6448c360-c4dd-11ed-a05c-01aa75ed71a1.0001.02/DOC_1&format=PDF (accessed 22 April 2023).

European Commission (2023b) Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 Establishing a Carbon Border Adjustment Mechanism. PE/7/2023/REV/1. Available at: http://data.europa.eu/eli/reg/2023/956/oj (accessed 18 June 2024).

European Commission (2023c) Critical Raw Materials: Enduring Secure and Sustainable Supply Chains for EU's Green and Digital Future. Press Release, 16 March. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1661 (accessed 7 May 2023).

European Commission (n.d.) European Chips Act. Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en (accessed 7 May 2023).

European Strategy and Policy Analysis System (ESPAS) (2022) Global Semiconductor Trends and the Future of EU Chips Capabilities. ESPAS Ideas Paper Series. Available at: https://espas.eu/files/Global-Semiconductor-Trends-and-the-Future-of-EU-Chip-Capabilities-2022.pdf (accessed 18 June 2024).

European Union (EU) (2022) EU-China Relations Factsheet, 1 April. Available at: https://www.eeas.europa.eu/eeas/eu-china-relations-factsheet_en (accessed 24 April 2023).

Eurostat (2023) China-EU: International Trade in Goods Statistics. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=China-EU_-_international_trade_in_goods_statistics (accessed 22 April 2023).

Feenstra R.C., Mandel B.R., Reinsdorf M.B., Slaughter M.J. (2009) Effects of Terms of Trade Gains and Tariff Changes on the Measurement of U.S. Productivity Growth. NBER Working Paper No 15592, National Bureau of Economic Research. Available at: http://www.nber.org/papers/w15592.pdf (accessed 2 May 2023).

Feinman J.N. (2016) A Closer Look: Backlash against Globalization: Déjà vu? *Deutsch Asset Management.* Available at: https://fundsus.deutscheam.com/EN/docs/research/A_Closer_Look_by_Josh_Feinman-2016-12.pdf (accessed 20 August 2024)

Fitri A. (2022) The US Wants to Cut Off East Asian Chip Exports to China: Some Asian Countries Are Set to Reap the Benefits. *Tech Monitor*, 14 November. Available at: https://techmonitor.ai/technology/emerging-technology/us-east-asian-semiconductor-exports-china-asian-countries-benefit (accessed 12 May 2023).

General Administration of Customs PRC (n.d.) China Customs Statistics. Available at: http://english.customs.gov.cn/Statistics/Statistics?ColumnId=1 (accessed 13 May 2023).

Genereux F. (2017) Protectionism: A Brake on Economic Growth. Desjardins Economic Studies, 17 February. Available at: https://www.desjardins.com/qc/en/savings-investment/economic-studies/protectionism-brake-economic-growth.html (accessed 22 June 2024).

Goodman M., Arasaingham A. (2022) Regional Perspectives on the Indo Pacific Economic Framework. CSIS Briefs, 11 April, Center for Strategic & International Studies. Available at: https://www.csis.org/analysis/regional-perspectives-indo-pacific-economic-framework (accessed 22 June 2024).

Goodman M., Reinsch W. (2022) Filling in the Indo-Pacific Economic Framework. Center for Strategic & International Studies, 26 January. Available at: https://www.csis.org/analysis/filling-indo-pacific-economic-framework (accessed 22 June 2024).

Gomory R., Baumol W. (2009) Globalization: Country and Company Interests in Conflict. *Journal of Policy Modeling*, vol. 31, issue 4, pp. 540–55. Available at: https://doi.org/10.1016/j.jpolmod.2009.05.013

Gstöhl, S. (2016) The European Neighbourhood Policy in a Comparative Perspective: Models, Challenges, Lessons. London: Routledge.

Hillebrand E.E., Lewer J.J. Zagardo J.T. (2010) Backtracking from Globalization. *Global Economy Journal*, vol. 10, no 4, pp. 1–17.

Ho J. (2023) IRA Spurs Japanese, South Korean Battery Investment. *Argus*, 10 May. Available at: https://www.argusmedia.com/es/news-and-insights/latest-market-news/2447554-ira-spurs-japanese-south-korean-battery-investment (accessed 18 June 2024).

Holzhausen A. (2023) A Faustian Bargain: Europe's Answers to the US IRA. Allianz Research, 7 February. Available at: https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/economic-research/publications/specials/en/2023/febuary/2023_02_07-EuropeanIRA.pdf (accessed 14 February 2024).

International Monetary Fund (IMF) (2023) World Economic Outlook, January Update. Available at: https://doi.org/10.5089/9798400232244.081

Kannan V., Feldgoise J. (2022) After the CHIPS Act: The Limits of Reshoring and Next Steps for U.S. Semiconductor Policy. Carnegie Endowment for International Peace Working Paper. Available at: https://carnegie-production-assets.s3.amazonaws.com/static/files/Kannan_Feldgois_CHIPS_final2.pdf (accessed 18 June 2024).

Kim Y.-K. (2022) An Overview of the Content and Impact of the US Inflation Reduction Act. *National Assembly Budget Office (NABO) Focus*, vol. 52. Available at: https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://korea.nabo.go.kr/naboEng/cmmn/file/fileDown.do%3FatchFileId%3D91-18f746ce0540b4887a025ae36e8fb9%26fileSn%3D1&ved=2ahUKEwizoq-G-eWGAxUhO0QIHTrsBLsQFnoECBQQAQ&usg=AOvVaw3L0hQipbEGiL66s_jylrXB (accessed 18 June 2024).

Kim E.-J. (2023) Chinese Battery Makers Turn to EU Due to US IRA, Putting Korean Battery Makers on Alert. *Business Korea*, 17 May. Available at: http://www.businesskorea.co.kr/news/articleView.html?idxno=114691 (accessed 17 May 2023).

Korea Development Institute (KDI) (2023) *Republic of Korea Economic Bulletin*, vol. 45, no 5. Available at: https://eiec.kdi.re.kr/userdata/eco_bul/202305/202305.pdf (accessed 14 February 2024).

Korea International Trade Association (KITA) (2023) K-Statistics. Available at: https://stat.kita.net/stat/istat/cts/CtsWholeList.screen (accessed 13 May 2023).

Krugman P.R., Obstfeld M. (2009) *International Economics: Theory and Policy*. Boston: Pearson, Addison-Wesley.

Lawrence R.Z., Weinstein D.E. (1999) Trade and Growth: Import-Led or Export-Led? Evidence From Japan and Korea. NBER Working Paper No 7264, National Bureau of Economic Research. Available at: https://www.nber.org/system/files/working_papers/w7264/w7264.pdf (accessed 18 June 2024).

Lewer J.J., Van den Berg H. (2007) International Trade and Economic Growth, New York: Rouledge.

M'hamed S.C. (2022) The European Green Deal Perspectives for the EU-Asia Relationship. Konrad Adenauer Stiftung. Available at: https://www.kas.de/documents/252038/16166715/The+European+Green+Deal+–+Perspectives+for+the+EU-Asia+Relationship.pdf/0ebdc459-7177-db7b-49cd-6410d66c48dd (accessed 18 June 2028).

Monier S. (2023) The US Inflation Reduction Act's Potential, and Polarising Impacts. Lombard Odier, 21 February. Available at: https://www.lombardodier.com/contents/corporate-news/investment-insights/2023/february/the-us-inflation-reduction-act-s.html (accessed 22 June 2024).

Mullaney T. (2023) How Manufacturing Chips in the US Could Make Smartphones More Expensive. *CNBC*, 9 March. Available at: https://www.cnbc.com/2023/03/09/why-manufacturing-chips-in-us-may-make-smartphones-more-expensive.html (accessed 12 May 2023).

Natalegawa A., Poling G.B. (2022) Assessing U.S. and Chinese Influence in Southeast Asia, Center for Strategic and International Studies (CSIS), Aug. https://csis-website-prod.s3.amazonaws.com/s3fs-public/2023-08/230807_Poling_Influence_SoutheastAsia.pdf (accessed 20 August 2024)

Nye J.S. (2022) America's China Challenge. *Project Syndicate*, 3 August. Available at: https://www. project-syndicate.org/commentary/america-successful-response-to-china-challenge-by-joseph-s-nye- 2022-08?barrier=accesspaylog (accessed 24 April 2023).

Ocampo J. (2004) Latin America's Growth and Equity Frustrations During Structural Reform. *Journal of Economic Perspectives*, vol. 18, no 2, pp. 67–88. Available at: http://doi.org/10.1257/0895330041371349

Organisation for Economic Development and Co-operation (OECD) (n.d.) Focus on the Global Economy. Available at: https://www.oecd.org/coronavirus/en/themes/global-economy (accessed 24 April 2023).

O'Rourke K.H., Williamson J.G. (2001) *Globalization and History: The Evolution of Nineteenth Century Atlantic Economy*. Cambridge: The MIT Press.

Park S.C. (2021) The Regional Comprehensive Economic Partnership (RCEP) Without Indian Participation: Can It Work as Mega FTA? *International Organisations Research Journal*, vol. 16, no 2, pp. 157–82. Available at: http://www.doi.org/10.17323/1996-7845-2021-02-08

Palmer D. (2009) Republicans Urge Obama to Roll Back "Buy American." *Reuters*, 9 October. Available at: https://jp.reuters.com/article/idUSTRE5975VY/ (accessed 18 June 2024).

Pederson A. (2021) Sharper: Supply Chain Security. Center for New American Security, 6 October. Available at: https://www.cnas.org/publications/commentary/sharper-supply-chain-security (accessed 8 May 2023).

Piketty T. (2014) *Capital in the Twenty First Century*. Boston: Harvard University Press.

Pollin R., Lala C., Chakraborty S. (2022) Job Creation Estimates Through Proposed Inflation Reduction Act. Political Economy Research Institute (PERI) Research Report. Available at: https://develop-peri.umass.edu/images/publication/InflationReductionBillReport-8-4-22-PERI.pdf (accessed 18 June 2024).

Richter F. (2023) Lithium-Ion Batteries: Powered by China. *Statista*, 10 March. Available at: https://www.statista.com/chart/29473/value-of-lithium-ion-battery-imports-to-the-united-states/ (accessed 12 February 2024).

Rosen H. (2008) Strengthening Trade Adjustment Assistance. PIIE Policy Brief PB08-2, Peterson Institute for International Economics. Available at: https://ceim.uqam.ca/ggt/IMG/pdf/Rosen-PetersonInstitute-01.08.pdf (accessed 18 June 2024).

Sahay R. (2022) How the US Inflation Reduction Act Will Impact the Economy. World Economic Forum, 2 November. Available at: https://www.weforum.org/agenda/2022/11/how-new-laws-meet-climate-goals/ (accessed 13 May 2023).

Samuelson P.A. (2004) Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization. *Journal of Economic Perspectives*, vol. 18, no 3, pp. 135–46. Available at: http://www.doi.org/10.1257/0895330042162403

Spencer J. (2022) Inflation Reduction Act or Radical Green New Deal? *The Heritage Foundation*, 29 July. Available at: https://www.heritage.org/energy-economics/commentary/inflation-reduction-act-or-radical-green-new-deal (accessed 14 May 2023).

Statista (n.d.) United States Goods Trade Deficit With China From 2013 to 2023 (in Billion US Dollars). Available at: https://www.statista.com/statistics/939402/us-china-trade-deficit/ (accessed 22 April 2023).

Steinburg D., Tan Y. (2022) Public Responses to Foreign Protectionism: Evidence From the US-China Trade War. PIIE Working Paper 22-10, Peterson Institute for International Economics. Available at: https://www.piie.com/sites/default/files/documents/wp22-10.pdf (accessed 18 June 2024).

The White House (2022a) Fact Sheet: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China. Statements and Releases, 9 August. Available at: https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-cre- ate-jobs-strengthen-supply-chains-and-counter-china/ (accessed 24 April 2023).

The White House (2022b) Fact Sheet: Biden-Harris Administration Delivers on Made in America Commitments. Statements and Releases, 4 March. Available at: https://www.whitehouse.gov/briefing-room/state-

ments-releases/2022/03/04/fact-sheet-biden-harris-administration-delivers-on-made-in-america-commitments/ (accessed April 30 2023).

The White House (2022c) Indo-Pacific Strategy on the United States. Available at: https://www.whitehouse.gov/wp-content/uploads/2022/02/U.S.-Indo-Pacific-Strategy.pdf (accessed 1 May 2023).

The White House (2022d) On-the-Record Press Call on the Launch of the Indo-Pacific Economic Framework. Press Briefings, 23 May. Available at: https://www.whitehouse.gov/briefing-room/press-briefings/2022/05/23/ on-the-record-press-call-on-the-launch-of-the-indo-pacific-economic-framework/ (accessed 1 May 2023).

The White House (2023) Building A Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action, Version 2. Available at: https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf (accessed 18 June 2024).

The World Bank (n.d.) Trade (% of GDP): Brazil. Available at: https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?locations=BR (accessed 30 April 2023).

Titievskaia A. (2019) EU Trade Policy: Frequently Asked Questions. EPRS PE642-229, European Parliamentary Research Service. Available at: https://www.europarl.europa.eu/RegData/etudes/IDAN/2019/642229/EPRS_IDA(2019)642229_EN.pdf (accessed 18 June 2024).

United Nations (UN) Comtrade (n.d.) Database. Available at: https://comtradeplus.un.org (accessed 22 June 2024).

U.S. Bureau of Economic Analysis (2024) U.S. International Trade in Goods and Services, December and Annual 2023. *News Release*, 7 February. Available at: https://www.bea.gov/news/2024/us-international-trade-goods-and-services-december-and-annual-2023 (accessed 11 February 2024).

U.S. Congressional Research Service (2022) CRS Annual Report: Fiscal Year 2022. Available at: https://www.loc.gov/crsinfo/about/CRS_AnnualReportFY2022_Final.pdf (accessed 23 June 2024).

USTR (2017a) United States-Mexico-Canada Agreement, https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement (acessed 20 August 2024).

USTR (2017b) U.S. – Korea Free Trade Agreement, https://ustr.gov/trade-agreements/free-trade-agreements/korus-fta (accessed 20 August 2024).

York E. (2023) Summary of the Latest Income Tax Data, 2023 Update. *Tax Foundation*, 26 January. Available at: https://taxfoundation.org/publications/latest-federal-income-tax-data/ (accessed 29 April 2023).

Yu X.-R. (2023) Who's Winning the US-China Chip War? *Citigroup*, 11 October. Available at: https://www.citigroup.com/global/insights/global-insights/who-s-winning-the-us-china-chip-war- (accessed 12 February 2024).

Yuen S. (2024) Intersect Power Begins Commercial Operations of 820 MWp Solar Project in Texas. *PV Tech*, 12 January. Available at: https://www.pv-tech.org/intersect-power-begins-commercial-operations-of-820mwp-solar-project-in-texas/ (accessed 15 February 2024).

Wolf M. (2020) Chain Reaction: The China Link in Global Supply Chains. *Deloitte Insights*, 4 December. Available at: https://www2.deloitte.com/us/en/insights/economy/asia-pacific/china-supply-chain.html (accessed 8 May 2023).