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Thinking Inertia and Path Dependence in US Chip Hegemony Strategy

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Abstract. As human society steps into the digital era, the chip industry has increasingly become a strategic place for national security, economic development, scientific and technological progress, as well as global political games. Although the US has long dominated the chip industry, China's recent explosive growth in the semiconductor sector poses a serious threat to US technical superiority. Consequently, the chip race has taken center stage in the ongoing Sino-US technology rivalry. By observing the U.S. policy documents and diplomatic practices related to chip strategy, we can find that the U.S. in the process of maintaining and advancing its chip hegemony presents technological hegemony, industrial protectionism, pseudo-multilateralism thinking inertia, unilateral export control, industrial policy support, as well as multilateral alliance construction of the path of dependence.

Keywords: Chip Hegemony; US-China Relations; Thinking Inertia; Path Dependence; Trade Friction.

1. Introduction

In recent years, the United States launched a "trade war" and "science and technology cold war" against China will be the chip as a top priority, the significance of the chip issue in the power struggle between nations has been further amplified by variables such as the COVID-19 pandemic and the Ukraine crisis.[1] A review of history reveals that, from the scientific and technological competition between the US and the USSR during the Cold War to the semiconductor trade friction between the US and Japan in the 1980s and 1990s to the increasingly intense "chip war" between the US and China today, the US has adjusted its chip strategy in accordance with shifting global conditions and its own interests. Nonetheless, rather than a total reversal of the prior plan, this adjustment merely represents a partial shift in strategic focus, demonstrating a definite historical continuity. Therefore, this paper intends to comb through the U.S. government in 1987 ~ 2022 issued a total of 18 "U.S. National Security Strategy" reports and combined with its diplomatic practice, to analyze the U.S. in the three chip competition in the mindset of inertia and path dependence. And then try to put forward in the current U.S.-China "chip war" China may take countermeasures, in order to promote China's chip industry as soon as possible to break through the U.S. encirclement, to achieve long-term development to provide theoretical references.

2. Thinking Inertia: The Conceptual Framework of U.S. Chip Hegemony Strategy

2.1. Technological Hegemonic Thinking: Preserving and Expanding First-mover Advantage

Technological hegemonic thinking is a mode of thought that prioritizes the maintenance of a country's technological monopoly and the imposition of technological suppression on other countries. In the field of semiconductors, the United States exerts control over key technologies, employs a policy of "long-arm jurisdiction", suppresses and sanctions competitors, as well as implements a targeted technological blockade in order to safeguard its dominant position in global science and technology and avoid the erosion of its technological advantages by other countries.

Technological hegemonic thinking is essentially an extension of the hegemonic thinking of the United States in the field of technology and is the result of when technological monopoly becomes the will of the State. Following the Second World War, the United States established its global leadership through the establishment of its economic, scientific, technological, and military power, thereby laying the material foundation for the emergence of technological hegemonic thinking. Concurrently, the United States' self-perception as "God's Chosen People" and its conviction of a special historical mission and global leadership responsibility provide ideological support for the formation of technological hegemony thinking. In light of the aforementioned, the United States has sought to establish a first-mover advantage in the semiconductor industry since the 1950s, with the objective of monopolizing its dominant position. As the global economic and technological landscape has evolved, the semiconductor industry has emerged as a key area of international competition. The United States, with its technological first-mover advantage, has determined that maintaining its leading position in the field of microchips is aligned with its national strategic objective of promoting global hegemony. Consequently, the concept of technological hegemony has emerged. As the United States has engaged in technological competition with various rivals, the concept of technological hegemony has gradually evolved. This can be divided into three distinct periods.

During the period of U.S.-Soviet rivalry, technology was perceived as a pivotal strategic element of Cold War competition, and the U.S. closely linked technological development to geopolitical goals. In the context of the intense competition between the United States and the Soviet Union, the United States came to recognize the strategic importance of microchip technology in military applications. This was highlighted in the 1987 U.S. National Security Strategy report, which stated that the United States should adopt a competitive strategy to leverage its technological superiority in order to reduce the Soviet Union's competitive efficiency in areas of military application.[2](20) The 1988 U.S. National Security Strategy report concluded that " rapid advances in microelectronics will allow the command, control, and communications integrated with intelligence sources, to provide the' necessary strategic and tactical direction of such advanced military operations." [3](8) Consequently, it was recommended that the United States should take steps to prevent the transfer of militarily critical technologies and resources to the Soviet bloc and hostile countries or groups. [3](4) In the meantime, the United States held the conviction that its ideology and political system were demonstrably superior to that of the Soviet Union in stimulating scientific and technological advancement: "The West's spirit of inquiry and free flow of information will undoubtedly result in the generation of more innovative technologies than those developed in closed societies", [2](20) and thus the United States attempts to justify its technological hegemony by ascribing technological superiority to the inherent superiority of the United States.

In a time of U.S.-Japan trade friction, the United States politicized economic relations under the anxiety of economic imbalance and regarded technological superiority as an important means of securing economic interests and international competitiveness. At that time, Japanese semiconductor products were rapidly gaining a dominant position in the global market due to their perceived quality and low price, which posed a clear threat to the dominant position of the United States. In this context, the United States regards the economic relationship between the United States and Japan as "a source of political tension", [3](31)citing Japan's persistent current account surpluses are a major imbalance in the global economy.[4](20) Furthermore, following the Gulf War, the United States' reliance on Japanese chip technology for the production of high-tech weapons exposed the vulnerability of its defense security. The 1991 U.S. National Security Strategy report warned that "the loss of technological leadership can undermine military readiness and strength. "[5](21) Consequently, the 1993 United States National Security Strategy report asserted that "the United States should encourage the diversification and transformation of the defense industry and the commercialization of new technologies while retaining key defense skills",[6](15) in order to adapt to the new changes in global competition.

In Sino-American technology wars, the United States viewed innovation and technological superiority as the key to national prosperity and emphasized the protection of global technological

leadership. The 2010 U.S. National Security Strategy report stated that "the United States must ensure that it remains ahead in science and innovation to support its own prosperity, national defense, and international technological leadership."[7](28) In recent years, however, the relative decline of the United States in the economy, science, and technology, and the challenges it faces at home and abroad have inspired the rise of technological hegemony. [8] The 2017 U.S. National Security Strategy report stated that the loss of innovation and technological superiority would have a detrimental impact on U.S. prosperity and strength. [9](21) Furthermore, with competition consistently shifting the global balance of power in China's favor, the United States is aware that "over the next decade, critical and emerging technologies will reshape the economy, the military, and even the world". [10](32) Consequently, it has attempted to curb China's strong development momentum by strengthening political means, declaring that it will "combat intellectual property theft, forced technology transfers, and other attempts to undermine U.S. technological superiority" by "strengthening investment reviews, export controls, and counter-intelligence efforts". " [10](15)

The formation and evolution of technological hegemony thinking have revealed the strategic intention of the United States to pursue control and monopoly in the field of technology, and it has taken the field of science and technology as the frontline of zero-sum games and constructed a global scientific and technological order centered on the interests of the United States.

2.2. Industrial Protectionist Thinking: Protecting and Promoting Indigenous Industries

Industrial protectionist thinking is a way of thinking aimed at maintaining the development of domestic industries and enhancing their global competitiveness through government intervention. In the field of chips, the United States provides subsidies, and incentives for research and development, improves laws, and adopts a quota system to promote the development of the local chip industry and ensure the security of key technologies and the industrial chain.

Industrial protectionist thinking can be considered an extension of the protectionist thinking of the United States in the field of science and technology industries. From the inception of the United States, this mode of thinking has been deeply embedded in its economic policy. The first U.S. Secretary of the Treasury, Alexander Hamilton, initially proposed the "infant industry protection theory," which posited that domestic emerging industries should be afforded transitional protection and support measures. Following the conclusion of the Second World War, the American scholar Wannevar Bush published the report "Science - Endless Frontier", which explicitly stated that the government should formulate a comprehensive science and technology policy to promote national scientific and technological innovation. Since then, this has served as the scientific and technological policy keynote of the United States in the post-war decades. In response to different countries at varying times, the United States has continued to pursue a mindset of industrial protectionism, a journey that can be divided into three distinct stages.

During the period of the U.S.-Soviet tug-of-war, the U.S. incorporated various types of emerging industries with potential for military applications into the framework of its national defense strategy in order to meet the country's strategic needs. At that time, the United States regarded the semiconductor industry as an important part of national security, so the "development of the protection of key technology policy objectives and strategy of the initiative" attributed to the Department of Defence, [11] thus forming the characteristics of the military demand-driven technological innovation. The 1987 and 1988 United States National Security Strategy reports state that " A strong military capability is essential for a stable, secure environment ". [3](7)As a result, "the government should continue to promote initiatives to support modernization and enhance industrial productivity", as well as "use the procurement process to incentivize improvements in manufacturing technology and to enhance international competitiveness." [2](30) At this time, the U.S. government provided substantial financial support for the development of semiconductor companies through various industrial policies to promote the start of this highly speculative industry.

Amid the semiconductor conflict between the United States and Japan, the United States viewed public-private partnerships as a key strategy to maintain the stability of the domestic economic ecosystem and enhance international trade competitiveness. At that time, Japan capitalized on the globalization trend to rapidly expand its market share in the semiconductor industry, reducing the United States' share from 57% in 1980 to 40% in 1990. [12] Consequently, a high degree of dependence on the Department of Defence support has resulted in a single source of income for U.S. chip companies, who are eager to enter the civilian market in order to broaden their sales. In response, the United States Government pressured the Japanese Government to "further open its markets to foreign goods" on the grounds that "countries with large trade surpluses have a responsibility to maintain adequate growth in domestic demand"[5](20). Internally, the private sector was regarded as "the engine of economic growth," so the 1994 US National Security Strategy report stated that "the government should act as a partner with the private sector" and "sought to remove domestic and foreign barriers to the creativity, initiative, and productivity of U.S. businesses." [14](15)

During the U.S.-China chip wars, the U.S. viewed strategic public investment as an important means of stimulating domestic demand for innovation in order to safeguard national strategic interests. With the evolution of the global market pattern and Moore's Law approaching its limit, the importance of the chip manufacturing industry has once again come to the fore. And the United States' long-term pursuit of high-value-added links, has transferred a large number of manufacturing industries to East Asia, resulting in the gradual hollowing out of the domestic manufacturing industry. For this reason, the 2017 U.S. National Security Strategy report lists "support for domestic manufacturing, the defense industrial base, and resilient supply chains" as a "national priority". [9](30) At the same time, the United States views "strategic public investment" as "the backbone of a strong industrial and innovation base for the 21st century global economy",[10](14) arguing that "the government should make strategic public investments in key areas such as microelectronics technology to complement private sector innovation with modern industrial strategies." [10](11)

For a long time, the United States has been labeled as a successful model of a "free market economy", but in fact, in the development of its chip industry, the government has implemented multi-level policy intervention, and industrial protectionist thinking throughout.

2.3. Pseudo-multilateralist Thinking: Entrenching and Advancing Scientific and Technological Hegemony

Multilateralist thinking refers to a philosophy that advocates cooperation among multiple countries on an equal footing to jointly resolve international affairs and problems. Pseudo-multilateralist thinking, on the other hand, refers to a way of thinking that supports multilateral cooperation on the surface, but in fact, uses the multilateral mechanism to advance one's own interests. It is a combination of formal "multilateralism" and substantive "unilateralism",[15] which is designed to disguise its true intentions of "national priority" and global hegemony.

For a considerable period of time, the United States has called itself the "land of the free" and the "city on top of the mountain", and has always been permeated by a profound sense of civilizational superiority and a sense of mission, which in turn has given rise to the idea of "America first", The concept of "America First" and "American Exception" has been derived, providing the so-called "legitimacy" for its hegemony and building the ideological foundation for the formation of pseudo-multilateralist thinking. And in the U.S. chip competition with the Soviet Union, Japan, and China, pseudo-multilateralist thinking throughout the entire process, can be analyzed in the following three periods.

During the Cold War between the United States and the Soviet Union, the United States constructed an international alliance on the pretext of joint resistance to the Soviet Union, which was in fact regarded as a tool of the Cold War to strengthen its hegemony. On the one hand, the U.S. used the European Recovery Programme to "lure" countries, and on the other hand, it "coerced" allies by suspending aid, ultimately constituting a so-called "bulwark against the Soviet Union" based on the

"shared commitment to values and interests, imagination and political courage". [2](15)Subsequently, the U.S. described itself as "the leader of a voluntary coalition of equals" and declared that it "will cooperate with allies around the globe against the Soviet Union based on equal sharing of responsibilities".[2](20) However, given the significant dominance of the United States in the alliance and the economic and security dependence of the other allies, the actual implementation of the strategy is still based on ensuring that the United States' own strategic needs and interests are maximized first and foremost.

At the time of the U.S.-Japan trade war, the United States weakened Japan's competitive advantage by influencing international trade rules and systems in the name of supporting multilateral trade liberalization. After World War II, Japan, as a "Far East anti-communist barrier", received strong support from the United States in the chip industry. However, after Japan took over a large amount of technology and resources, it gradually changed from a collaborator to a competitor of the United States, posing a strategic threat to the United States. For this reason, the 1988 U.S. National Security Strategy report pointed out that "Japan's large trade surplus with the U.S. is unsustainable" and that "economic imbalances must be reduced through a combination of measures such as supporting U.S. multilateral trade liberalization initiatives in the General Agreement on Tariffs and Trade (GATT)". [3](31) At the same time, the U.S. has asserted that "trade disputes must be resolved equitably, given the continuing strategic importance of solidarity among industrial democracies". [16](22) In reality, however, the United States has always made the "pursuit of U.S. interests" its "top priority in cooperative relations",[17](35), and its so-called fair trade is only aimed at expanding the relative gains of the United States in international trade, rather than truly promoting the fairness and openness of the global trading system.

In the period of Sino-US chip competition, the United States has taken "America First" as its core principle and shaped the global industrial ecosystem based on its interests. In recent years, the rise of China's high-tech industry has posed a challenge to the United States' technological hegemony, and the global impact of the COVID-19 pandemic has contributed to the instability of global supply chains. To this purpose, the 2017 and 2022 U.S. National Security Strategy reports that "the United States must collaborate with like-minded allies and partners",[9](18) "to advance an international technology ecosystem".[10](33) However, the U.S. explicitly requires that cooperation "should ensure adherence to U.S. principles and the implementation of relevant rules to promote U.S. economic prosperity", [9](18) an unabashedly "America First" approach that lays bare its global profit-making intentions. In addition, for China and other countries regarded as rivals by the United States, the United States even declared that it would "actively promote the expansion of the free economic and trade system to dissident countries, in the hope that they can reform their economic and political systems for the benefit of the United States",[9](17) further highlighting its pseudo-multilateralist style.

The consistent attitude of the United States towards its allies is to use them if they are compatible and discard them if they are not, which is also the most distinctive manifestation of its "pseudo-multilateralism". The so-called multilateral alliance constructed by the United States is aimed at jointly suppressing ideological dissidents and potential threats to competitors,[18] which is unilateralism in the name of multilateralism.

3. Dependence: The Practical Evolution of U.S. Chip Hegemony Strategy

3.1. Unilateral Export Control

Driven by Technological hegemonic thinking, the United States often uses unilateral export controls as a key tool to maintain its hegemonic position. After World War II, the gradual stabilization of the international order and the deepening of global interdependence led to the limitation of the way to intervene by force to advance national interests,[18] and unilateral export control became an important non-forceful means habitually used by the United States and other powerful countries.

Whereas in the different stages of the chip dispute, the United States has formed a unilateral export control path dependence.

During the period of U.S.-Soviet rivalry, U.S. export controls focused on strategic materials and sensitive technologies to prevent them from strengthening the military power of their rivals. 1948, the U.S. formulated a wide-ranging export control list and implemented systematic post-war export controls. 1949, the Export Control Act formally constructed a legal framework for export restrictions and strengthened controls on sensitive materials and technologies. 1969, U.S.-Soviet relations détente and the United States replaced the former with the Export Administration Act. The US replaced the former with the Export Administration Act (EAA), which eased export restrictions except for military-related materials. 1979, when the US and the Soviet Union were at war again, the US amended the EAA to strengthen the review system and authorization procedures for the export of advanced technologies such as semiconductors. Ultimately, the Soviet semiconductor industry collapsed as a result of the US technology embargo and the failure of its own "copy" strategy.

By the time of the U.S.-Japan trade friction, the U.S. had drastically weakened Japan's development potential by comprehensively restricting the country's technological imports and independent innovation. The rapid rise of Japan's semiconductor industry after World War II benefited from U.S. technical assistance, but after the outbreak of the friction, the U.S. terminated technical support for Japan, and even set up an intellectual property rights commission, requiring Japan to pay high compensation and royalties. At the same time, the U.S. also pressured Japan to abandon its corporate innovation programs, such as the joint development of supercomputers by NEC and Fujitsu, which was forced to stop. Eventually, in 1992, the U.S. regained its leading position in the global semiconductor market.

In the current US-China technology war, the US has again continued to adjust its export control policies in an attempt to curb the development of China's chip industry. In May and August 2019, the US Department of Commerce placed Huawei and its affiliates on a list of entities for which it announced export control measures. Since then, a steady stream of Chinese entities have been added to the list.2022 In August, specific advanced semiconductor materials, such as gallium oxide and diamond, were also added to the U.S. export control category. In October of the same year, the United States again upgraded its export control policies with respect to advanced computing and semiconductor manufacturing products, as well as transactions related to China's use of supercomputers.2023 In October 2023, the U.S. government enacted even stricter rules for semiconductor export controls, specifically reinforcing the export restrictions on China-facing semiconductor manufacturing equipment and artificial intelligence-related chips. This series of policy measures reflects the path dependence of the United States on unilateral export controls in its chip strategy and highlights its intention to maintain its leadership and control in the global science and technology competition.

3.2. Industrial Policy Support

Under the influence of industrial protectionist thinking, the United States often uses industrial policy support to promote the development of the local chip industry. Given the core position of the chip industry in national economic security, scientific and technological security, and military security, the United States Government regards it as a national strategic asset and gradually formed the path of industrial policy support dependence.

During the US-Soviet Cold War, the initial development of semiconductor technology was driven by a series of strategic investments driven by US defense needs. Through NSF and DARPA, the United States funded a large number of enterprises and research institutions to carry out semiconductor technology research and development work. According to statistics, from 1958 to 1964, the total government funding for chip R&D amounted to $32 million, of which the Air Force contributed about 70%. [19] This centralized investment and support for core science and technology has laid a solid foundation for the long-term prosperity of the U.S. semiconductor industry. With the expansion of

the chip market, private capital involvement increased, and the U.S. government gradually reduced direct intervention. To encourage venture capital, the government introduced the Small Business Investment Company Act, the Credit Guarantee Act, and other laws and regulations to promote technological innovation and industrialization. To clear the obstacles to competition, the government also enacted anti-trust laws and promoted the "second supplier policy" and other measures to help the industry prosper.

In the face of U.S.-Japanese chip competition, the U.S. has taken action at both the domestic and foreign strategic levels. Externally, the U.S. use of trade negotiations and agreements, severe suppression of Japan's semiconductor industry. 1986, the U.S. and Japan reached the "U.S.-Japan Semiconductor Agreement", requiring Japan to open up the market and regulate the semiconductor price. 1991 the expiration of the agreement, the renewal of the contract requires the U.S. semiconductor products in the Japanese market share must account for 20% of Japan's semiconductor industry to successfully weaken the competitive advantage of Japan's semiconductor industry. Internally, the U.S. transformed its industrial policy with legal reforms and the construction of industrial alliances. In 1984, the U.S. passed the Semiconductor Chip Protection Act, and at the same time carried out legal reforms by enacting or amending the National Cooperative Research Act, the Steven Wilder Act, and the Mergers and Acquisitions Guidelines, which recognized inter-firm collaborative research and eased the restrictions of antitrust laws. [19]In 1987, the United States Department of Defense and 14 domestic enterprises established the Semiconductor Manufacturing Technology Alliance to pool resources to strengthen research and development, forming a two-wheel-drive mechanism of government-enterprise cooperation.

In the current US-China chip war, the United States has strengthened its support for the domestic chip industry through legislation and investment in order to expand its competitive advantage. In August 2022, U.S. President Joe Biden signed the Chip and Science Act of 2022, which can be described as the most industrial policy nature of legislation in U.S. history. The total investment of the bill is about $280 billion, including $52.7 billion in chip industry subsidies, $24 billion in investment tax credits, and about $200 billion in scientific research funding support, in order to promote the formation of a composite formation of different forces such as the government, enterprises, and scientific research institutions.[20] In the industry subsidies, including $ 39 billion in manufacturing grants to attract manufacturing "back" and strengthen domestic manufacturing capacity; the rest of the funds are for chip R&D and related education and training. The bill also has a "guardrail clause" to restrict subsidies to semiconductor companies operating in unfriendly countries such as China, thereby inhibiting the development of these countries in the high-tech field. U.S. industrial policy to support the path of dependence is self-evident.

3.3. Multilateral Alliance Building

Under the impact of pseudo-multilateralist thinking, the United States often constructs multilateral alliances to consolidate and advance its chip hegemony. In the pattern of global interconnection and interdependence, the United States recognizes the limitations of independent action and therefore builds an alliance system centered on itself, forming a path of dependence on the construction of multilateral alliances.

At the time of the U.S.-Soviet rivalry, the U.S. used the alliance system built with its Western allies to enforce technological containment against the U.S.S.R. In 1949, the U.S. joined with its allies, a total of 17 countries, to establish the Paris Coordinating Committee (PCC), which imposed a trade embargo and an embargo on the countries of the socialist camp. Under the leadership of the United States, the PCC included chip technology and related production equipment in the export control lists, implemented an export licensing system, and ensured consistency of controls among member countries to prevent the Soviet Union and its allies from bypassing controls. Thus, the United States has succeeded in transforming its unilateral export controls on the Soviet Union countries into an international multilateral operation that has, to some extent, curbed the development of those countries in the field of chips.

As the United States and Japan were in a period of trade friction, the United States rebuilt its advantage with the strategy of "defeating Japan through Asia". In order to counterbalance Japan, the United States began to support the semiconductor industry in Asia to dilute Japan's share of the global semiconductor market. Bangalore, India's software design, Singapore's process engineering, Malaysia's component assembly, China's coastal printed circuit board assembly, South Korea's semiconductor memory, and Taiwan's digital design and final assembly,[20] are included in the U.S.-led global value chain system. Relying on the expertise and industrial strengths of Asian countries in their respective fields, the United States constructed a cross-border production and supply network to reconfigure the global production division of labor and thus effectively respond to economic competition from Japan.

In the Sino-US chip dispute, the United States will deepen cooperation combined with coordination and control to build a strategic alliance to encircle China. In May 2021, 64 companies from the United States, Japan, and China's Taiwan region announced the establishment of the US Semiconductor Alliance. The alliance claims to represent the global semiconductor enterprises to strengthen the common demand for industry cooperation but does not accept mainland China enterprises, the exclusion of China's tendency is self-evident. In 2022 April, the U.S. government proposed with South Korea, Japan, and China Taiwan to establish a "chip four-party alliance", the intention is to exclude China from the global semiconductor supply chain outside of the alliance. In January 2023, the U.S., Japan, and the Netherlands reached a U.S.-Japan-Dutch semiconductor agreement to restrict the export of advanced chip manufacturing equipment to China in order to constrain Chinese chip production. By consolidating cooperation with its allies, the US intends to build a "small yard and high wall" to contain China's technological rise and maintain its global technological hegemony.

4. China's Path to Responding to U.S. Chip Hegemony Strategy

4.1. Upgrading "Domestic Substitution": Strengthening Core Competitiveness

In the face of the U.S. technological hegemony thinking and unilateral export control path, China ought to achieve "domestic substitution" through continuous technological innovation and market-oriented product development, from low-end replacement to high-end R&D leap. China's chip sector is currently dealing with issues such as a lack of synergy throughout its industrial chains, a mismatch between high-end design and local manufacturing, an undue tilt towards the mid-range and low-end markets, as well as a dependency on high-performance chip imports. Therefore, China's chip industry is in urgent need of transformation and upgrading. Our primary objective should be to prioritize extensive cultivation in high-end niche markets, by integrating market needs with advanced applications and overcoming significant technical challenges. Additionally, in order to increase our value and irreplaceability, we should encourage the upgrading and optimization of the entire industrial chain, from design through manufacturing to packaging and testing, improve the industrial chain's synergistic effect, and realize real demand response and technical cooperation. Furthermore, we should work to make the US and the rest of the world rely on our nation and create a mutually reinforcing situation that will foster strategic mutual benefit and win-win outcomes.

4.2. Deep Integration of Government, Industry, Academia, and Research: Building a Good Industrial Ecology Together

In response to the industrial protectionist thinking and support path of the United States, China needs to concentrate on fostering the comprehensive integration of government, industry, academia, and research. This can be achieved by integrating diverse resources and encouraging collaboration and exchanges among various subjects, ultimately forming an all-encompassing, multi-level mechanism for cooperation. Through government guidance, enterprise participation, academic drive, and research and innovation of the close combination of the overall formation of the domestic innovation community, China can learn from the successful experiences of the United States and Japan and give full play to the advantages of the new national system, enhancing the resilience of the local industrial

chain and the organizational nature of the innovation chain. At the same time, care should be taken to avoid the Soviet-style government-led model in this process, and the government should position itself as a guide and coordinator to maximize the synergies between scientific and technological innovation and industrial development, cultivate a wider range of innovation subjects, and create a thriving innovation market.

4.3. International Cooperation Opens up New Opportunities: Dividing the US Multilateral Alliance

China can strengthen international cooperation, increase multilateral trade, improve international discourse, and other measures aimed at undermining the US semiconductor alliance when faced with the US's pseudo-multilateralist thinking and path toward building multilateral alliances. This will help to create a more transparent and cooperative global semiconductor industry ecosystem. China is one of the biggest semiconductor markets in the world, with enormous growth potential. The chip industry's globalization implies "decoupling" from China, which is undesirable for any nation. China can take advantage of the changing global landscape to look for new avenues for collaboration and actively support the implementation of the Regional Comprehensive Economic Partnership (RCEP) and other high-quality multilateral trade mechanisms. It can also use its enormous market advantages to draw in East Asia, Europe, and other developing nations to form alliances, which will lessen the power of the US alliance. China should simultaneously actively seek international support and understanding, actively participate in the creation of regulations, strengthen the discourse power of international scientific and technical governance, and make its voice heard through multilateral diplomatic channels.

5. Summary

At present and in the longer term, chip technology competition will remain the core element of the United States' containment strategy against China. China ought to continue to advance its reforms in response to changes and challenges in the external environment. It should also upgrade "domestic substitution" to strengthen its core competitiveness, create a strong industrial ecosystem by integrating government, business, academia, and research deeply, and split the U.S. multilateral alliance by seizing new opportunities for international cooperation. Ultimately, China could take preventative action by seizing the momentum behind the U.S.'s chip hegemony strategy and its path of dependence. By grasping the inertia and path of thinking in the U.S. chip hegemony strategy, we can make clear the U.S. intentions, deduce the U.S. trends, and make preventive responses. The United States must also recognize that openness and cooperation are effective means of promoting the evergreening of its chip sector and that global wisdom collecting and resource sharing are necessary for scientific and technical growth. China and the US are engaged in a technological tug-of-war centered on chip rivalry, which also presents a chance for cooperation and camaraderie. To achieve long-term global security and prosperity, all parties involved should adopt a realistic approach and work together to investigate and build a more efficient and well-balanced method of cooperation.

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