

Examining the WTO Compliance of Subsidy Measures in the US and EU Chip Acts and China's Strategic Responses

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Abstract

In recent years, the United States and the European Union have introduced a series of chip-related legislative measures characterized by large-scale subsidies and restrictive provisions, significantly affecting the structure of the global semiconductor industry and raising concerns regarding their consistency with WTO rules. Using normative analysis and comparative research methods, this paper evaluates the legality of these measures under the “three-step” framework of the Agreement on Subsidies and Countervailing Measures (SCM Agreement). The analysis shows that the subsidies adopted by the US and the EU satisfy the criteria for subsidies under the SCM Agreement, exhibit both de jure and de facto specificity, and have caused “serious prejudice” to China’s semiconductor industry. In addition, the “guardrail clauses,” which impose differentiated treatment based on investment destination, are inconsistent with the GATT principles of most-favored-nation treatment and national treatment. The paper further argues that the defenses based on GATT Articles XXI and XXIV invoked by the US and the EU are unlikely to be persuasive under the current WTO framework. Comparative analysis indicates that US legislation reflects a strategy of broad-based containment, whereas the EU adopts a more selective and preventive approach, with clear differences in policy objectives, subsidy structures, and restrictive measures. On this basis, the paper proposes differentiated response strategies, including litigation-oriented countermeasures toward the US and rule-based coordination with the EU. It also outlines a broader framework for safeguarding China’s legitimate interests through four dimensions: more targeted litigation strategies, improvements in domestic legal countermeasures, compliance-oriented industrial subsidy policies, and participation in the restructuring of global trade rules.

Keywords

Chip Acts, WTO compliance, SCM agreement, national security exception, non-discrimination principle

1. Introduction

1.1 Research Background and Problem Statement

In August 2022, the United States formally enacted the Chips and Science Act, authorizing \$52.7 billion in federal funding and a 25% investment tax credit, accompanied by stringent “guardrail clauses” that prohibit subsidized entities from expanding advanced manufacturing capacity in China and other “countries of concern”

for a period of ten years. In the same year, the European Union launched the European Chips Act, aiming to mobilize €86 billion in public and private investment by 2030 [2]. These two legislative acts reflect a significant expansion of state intervention in the global semiconductor supply chain through industrial and strategic policy tools. Their impact extends beyond the field of industrial economics and raises important issues under international trade law. Many of the subsidy measures established under the US Act may constitute prohibited or actionable subsidies under WTO rules and display a clear geopolitical orientation [3].

The legal and policy issues raised by the Chip Acts can be analyzed at three interconnected levels. At the most direct level, the issue concerns whether the targeted subsidy measures adopted by the US and the EU comply with the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement), and whether the investment-destination-based restrictions are inconsistent with WTO non-discrimination principles. At a deeper level, these measures reveal growing tensions between large-scale industrial subsidies justified on grounds of “national security” and “supply chain resilience” and the WTO’s commitment to fair trade, particularly with respect to the scope of security exception clauses [4]. A further issue concerns what forms of international legal response China, as one of the countries most affected by these measures, may adopt. China initiated WTO dispute settlement proceedings in December 2022. Accordingly, this paper examines three main questions: whether the US and EU Chip Acts are consistent with WTO rules; whether the US and EU can successfully rely on WTO exception clauses if violations are found; and how China may formulate a systematic and effective response strategy.

1.2 Literature Review and Research Significance

Both Chinese and international scholars have produced substantial research on the compatibility of the US and EU Chip Acts with WTO rules. In English-language literature, Kim argues that industry subsidies pursued under the guise of economic security are likely to breach the non-discrimination obligations under GATT Articles I and III. Lee discusses how the revival of industrial policy has affected the development of international trade law. In Chinese scholarship, Song Yunbo and Xie Lanxing scrutinize the WTO compliance of US chip rules. Cai Yue contends that the measures violate most-favored-nation treatment and national treatment principles while constituting an abuse of security exceptions [5]. Liu Jianli analyzes the impact of the legislation and proposes China’s countermeasures. Liang Yong discusses the rebalancing of security exceptions. Zhang Naigen draws on the DS512 case to assess the limited constraining effect of security exceptions on unilateral trade restrictions.

However, existing studies still exhibit several limitations. First, most studies concentrate on US legislation, while relatively little attention has been paid to the EU Chip Act or to systematic comparison between the two regimes. Second, discussions of security exception clauses often remain relatively abstract and do not sufficiently engage with the review standards developed in WTO jurisprudence following the DS512 case. Third, existing policy recommendations are often broad in nature and lack integrated proposals combining litigation strategy, domestic countermeasures, and industrial policy adjustment. This paper seeks to address these gaps and further develop the existing literature.

1.3 Research Methods

This study employs normative analysis to interpret the legal meaning of relevant WTO agreements, comparative research to identify similarities and differences between the US and EU Chip Acts, and case analysis to examine the adjudicatory logic of rulings such as DS512.

2. Content, Characteristics, and Strategic Intentions of Subsidy Measures in the Us and Eu Chip Acts

2.1 Analysis of Subsidy Measures in the Us Chips and Science Act

The US Chips and Science Act authorizes a total investment package of approximately \$280 billion, centered on the Chips Act of 2022. The legislation provides about \$52.7 billion in direct funding for the semiconductor industry, \$24 billion in investment tax credits, and roughly \$200 billion for research and development. The scale of this legislation is rarely seen in the history of US industrial policy and reflects a clear shift toward stronger government intervention in strategic industries.

In terms of specific subsidy arrangements, the Act establishes four dedicated funds. The CHIPS for America Fund allocates \$50 billion, including \$39 billion for manufacturing incentives and \$11 billion for research and development [3]. The CHIPS Defense Fund provides \$2 billion for microelectronics commons and workforce training. The CHIPS International Technology Security and Innovation Fund allocates \$500 million to support international supply chain coordination. The CHIPS Workforce and Education Fund provides \$200 million to promote workforce development. Section 107 of the Act offers a 25% tax credit for investments in advanced semiconductor manufacturing facilities, expected to amount to approximately \$24 billion. These federally funded subsidy programs are intended to encourage semiconductor manufacturing capacity to relocate or expand within the United States.

On the restrictive side, the Act includes stringent “guardrail clauses.” Recipients of funding must commit not to engage in significant transactions involving substantial expansion of semiconductor manufacturing capacity in China or other “countries of concern” for a period of ten years [3]. “Technology clawback” provisions restrict joint research or technology licensing with certain foreign entities, while “expansion clawback” clauses prohibit capacity expansion in China, with violators required to repay the full amount of funding received. In September 2023, the US Department of Commerce issued final rules that further expanded the scope of “foreign entities of concern.” These provisions not only restrict the investment decisions of enterprises but also introduce measures with clear country-specific discriminatory characteristics.

2.2 Analysis of Subsidy Measures in the EU European Chips Act

The EU European Chips Act entered into force in September 2023. The Act is organized around three main pillars and aims to coordinate resources across the semiconductor industrial chain through public-private cooperation. The first pillar focuses on research and development and pilot lines; nine projects have been approved with a total investment of €5.1 billion. The second pillar targets manufacturing, with seven “first-of-a-kind” projects involving nearly €31.4 billion in investment. These projects, identified as “first-of-a-kind” facilities within the EU, demonstrate the EU’s emphasis on developing advanced manufacturing capacity. The third pillar establishes a “monitoring-early warning-response” mechanism for supply chain security, reflecting the EU’s effort to institutionalize supply chain resilience management.

Regarding investment scale, the Act initially aimed to mobilize €86 billion in public and private investment by 2030, with roughly half coming from public sources. As of October 2025, it had already mobilized €69 billion. Compared with the United States, the EU adopts a relatively more moderate approach to restrictive measures. Restrictions primarily concern investment screening and capacity expansion limits, without the comprehensive procurement bans on Chinese manufacturing equipment seen in the US. The EU’s policy orientation is closer to “de-risking,” aiming to reduce strategic dependence in key sectors while maintaining a certain degree of international cooperation. Discussions regarding a possible “European Chips Act 2.0” are already underway, including proposals for centralized EU-level funding mechanisms and faster approval procedures. This suggests that the EU framework remains adaptable and subject to further adjustment, while also reflecting the institutional complexities of implementing industrial policy within the EU’s multi-level governance structure.

2.3 Common Features, Comparative Analysis, and Strategic Intentions of the Two Acts

2.3.1 Common Features

The US and EU Chip Acts share three major common features. First, both Acts justify their measures primarily on the grounds of “national security” or “economic security.” The United States explicitly frames semiconductor supply chain security as a matter of national security, while the EU emphasizes “technological sovereignty.” This shift in policy discourse blurs the boundary between legitimate security concerns and industrial protectionism, thereby creating challenges for the existing multilateral trading system. Second, both Acts incorporate discriminatory guardrail clauses targeting China and other specific countries, directly undermining the non-discrimination principles of most-favored-nation treatment and national treatment. Third, both Acts rely on large-scale fiscal subsidies that have intensified global subsidy competition, placing increasing pressure on the multilateral trading order and potentially distorting resource allocation based on market principles.

2.3.2 Comparative Analysis

In terms of strategic objectives, the United States adopts a competition-oriented approach centered on “national security,” with the aim of rebuilding a semiconductor supply chain more closely aligned with US strategic interests. By contrast, the EU emphasizes “technological sovereignty” and seeks greater strategic autonomy [2], with the primary goal of reducing external dependencies and preventing chip shortages from disrupting key sectors such as automobiles and industrial automation. With respect to subsidy mechanisms, the US model is more centrally coordinated and focuses heavily on advanced manufacturing technologies, particularly 3nm and 2nm processes, while support is concentrated among a limited number of major firms such as Intel, TSMC, and Samsung. The EU, in contrast, adopts a more diversified model involving multiple stakeholders and places greater emphasis on coordinated development across the semiconductor value chain. In terms of restrictive measures, the United States adopts a broader containment strategy by combining investment restrictions, equipment controls, and export controls within a “small yard, high fence” framework. The EU adopts a more cautious, selective prevention approach, favoring “de-risking” over full “decoupling” [2].

2.3.3 Analysis of Strategic Intentions

The similarities between the US and EU Chip Acts largely reflect shared Western concerns over changes in the global semiconductor supply chain and the rapid development of China’s semiconductor industry. Over the past decades, semiconductor manufacturing capacity has become increasingly concentrated in East Asia, while the COVID-19 pandemic and subsequent chip shortages exposed the fragility of global supply chains. At the same time, differences between the two approaches are closely related to their distinct political systems and legal traditions. The United States tends to rely more heavily on unilateral restrictive measures aimed at maintaining technological and industrial dominance. The EU, by comparison, places greater emphasis on regulatory coordination and industrial capacity building. Understanding these differences is important for developing differentiated response strategies, as it implies that China cannot address its trade relations with the US and EU through identical approaches.

3. WTO Compliance Review of Subsidy Measures in the US and EU Chip Acts

3.1 Overview of the WTO Subsidy and Countervailing Rules Framework

Within the WTO legal framework, subsidy disciplines are mainly governed by the Agreement on Subsidies and Countervailing Measures (SCM Agreement). The SCM Agreement recognizes that subsidies may help address market failures, while also seeking to prevent distortions to international trade. The assessment of actionable subsidies generally follows a “three-step” analytical framework: first, determining whether a subsidy exists by verifying the presence of both “financial contribution” and “benefit”; second, assessing whether the subsidy is “specific”; and third, evaluating whether it causes “adverse effects” to the interests of other Members. In addition, the non-discrimination principles under GATT 1994 and the national security exception in Article XXI are also important standards in evaluating WTO compliance.

3.1.1 Core Disciplines of the Agreement on Subsidies and Countervailing Measures

Article 1.1 of the SCM Agreement stipulates that a subsidy must satisfy two cumulative elements: “financial contribution” and “benefit conferred.” Financial contribution includes direct transfers of funds, potential direct transfers of funds or liabilities, government revenue foregone or not collected (such as tax exemptions or special deductions), among others. Article 2 addresses both de jure and de facto specificity. De jure specificity exists when the legal text explicitly limits access to certain enterprises; de facto specificity arises when a subsidy, though seemingly non-specific on its face, is in practice granted predominantly to certain enterprises. The specificity requirement is intended to ensure that WTO subsidy disciplines apply mainly to subsidies capable of distorting market competition and resource allocation. Prohibited subsidies are addressed in Article 3, actionable subsidies in Articles 5 and 6, while the former category of “non-actionable subsidies” under Article 8 expired in 2000.

3.1.2 Composition of GATT 1994 Non-Discrimination Principles

The Most-Favored-Nation (MFN) treatment obligation (Article I) requires that any advantage granted to products of any country be accorded unconditionally to the like products of all other Members, thereby ensuring equal competitive opportunities. National treatment (Article III) requires that imported products receive treatment no less favorable than that accorded to like domestic products, preventing domestic regulations from being used as instruments of protectionism. These two principles complement one another by addressing external and internal discrimination respectively, and together they form a core foundation of the multilateral trading system.

3.1.3 Interpretive Challenges of GATT Article XXI National Security Exception

Article XXI permits Members to take any action “which it considers necessary” for the protection of its “essential security interests” [4]. A central interpretive issue is whether the phrase “which it considers necessary” should be regarded as entirely self-judging. Some Members argue that the security exception is entirely self-judging and thus beyond WTO review, while others contend that it remains subject to good-faith interpretation and objective scrutiny. At its core, the debate concerns how to balance state sovereignty in matters of national security with the need to preserve multilateral trade disciplines. Following the DS512 ruling, the interpretation of the security exception has gradually moved away from a purely self-judging approach and become subject to a certain degree of WTO review.

3.2 Compliance Analysis of Chip Act Subsidy Measures Under the SCM Agreement

3.2.1 Determination of “financial Contribution” and “benefit”

Direct appropriations under the US Act constitute direct transfers of funds, loan guarantees fall under potential direct transfers of funds or liabilities, and the 25% investment tax credit qualifies as government revenue foregone through special deductions—all clearly meeting the “financial contribution” criterion. The public investment components of the EU Act similarly constitute financial contributions. Regarding the “benefit” element, Article 14 of the SCM Agreement establishes the “market benchmark” principle. Semiconductor manufacturing is a highly capital-intensive industry, with the construction of advanced wafer fabs requiring investments of tens of billions of dollars. Without government support, such investment decisions would often be unfeasible. Taking TSMC’s Arizona fab as an example, the total investment rose from \$12 billion to \$40 billion; absent subsidies, such a high-risk decision would have been extremely difficult to justify. These subsidy measures substantially reduce investment costs and commercial risks for enterprises, thereby conferring a “benefit” within the meaning of the SCM Agreement.

3.2.2 Analysis of “specificity”

With respect to de jure specificity, the US Act explicitly limits subsidy recipients to the semiconductor industry, as indicated by its very title. The “guardrail clauses” further narrow the beneficiaries to semiconductor enterprises that refrain from expanding capacity in “countries of concern,” reinforcing legal specificity. The EU Act similarly confines support to the semiconductor sector, with its “first-of-a-kind” project mechanism further restricting eligibility. The explicit limitation of these measures to the semiconductor industry is sufficient to establish de jure specificity. Regarding de facto specificity, the extremely high capital threshold of semiconductor manufacturing means that only a handful of major players can realistically access the subsidies. In practice, US Department of Commerce allocations have been heavily concentrated among a few industry leaders such as TSMC, Samsung, and Intel, with limited numbers and diversity of beneficiaries. This high concentration of beneficiaries strongly indicates the existence of de facto specificity.

3.2.3 Analysis of “serious Prejudice” and Trade-Distorting Effects

Article 5 of the SCM Agreement identifies three forms of adverse effects, among which “serious prejudice” is central. Article 6.3 provides that serious prejudice arises when subsidies cause price undercutting, price suppression, or lost sales [1]. By lowering production costs for subsidized firms, US and EU subsidies create unfair competitive advantages, exerting downward price pressure on Chinese enterprises and triggering a vicious cycle of “price undercutting–profit erosion–reduced investment–declining competitiveness.” Such effects fall within the type of serious prejudice that the SCM Agreement seeks to address. Moreover, the explicit objective of both Acts is to shift global advanced manufacturing capacity from East Asia to domestic

territories. Intel's data indicate that the US currently accounts for only about 10% of global chip manufacturing; the Acts aim to raise this share to approximately 20%. This subsidy-driven relocation of manufacturing capacity and resulting changes in market structure are precisely the kinds of trade-distorting effects that WTO subsidy disciplines are intended to regulate.

3.2.4 Demonstration of “nullification or Impairment” of Benefits

Article 5(b) of the SCM Agreement offers an independent pathway through non-violation complaints. As the world's largest semiconductor consumption market—accounting for over one-third of global chip demand—China may reasonably expect to participate in the global semiconductor division of labor on the basis of comparative advantage. By artificially altering investment location decisions, US and EU subsidies effectively “siphon” future advanced chip capacity to their own territories, thereby depriving China of reasonably expected competitive opportunities and development space. The non-violation complaint mechanism therefore carries particular strategic significance: it does not require proving a breach of any specific obligation, but only that China's legitimate expected benefits have been impaired.

3.3 Compliance Analysis of the Chip Acts’ “guardrail Clauses” Under GATT Non-Discrimination Principles

3.3.1 Inherent Discriminatory Nature of the “guardrail Clauses”

The “guardrail clauses” impose differential treatment based on investment destination and the identity of transaction counterparties. Enterprises investing in “countries of concern” face restrictions or loss of subsidy eligibility, while comparable enterprises investing elsewhere do not. Such discriminatory treatment is embedded in the structure of the clauses themselves and can be clearly identified from the legislative text.

3.3.2 Violations of “like Products” and “no Less Favorable Treatment”

Under GATT Article I (MFN treatment), semiconductor products manufactured in China do not differ in any material respect—physical characteristics, end uses, or tariff classification—from like products originating in other countries, and thus qualify as “like products” [5]. The differentiation of subsidy eligibility based on country of investment is inconsistent with the MFN principle. GATT Article III (national treatment) requires that imported products be accorded treatment no less favorable than like domestic products [5]. By imposing additional restrictions on technological cooperation and capacity expansion involving specific countries, these clauses undermine equal market access opportunities and produce clear protectionist effects, thereby breaching national treatment obligations. As a foundational principle of the WTO system, non-discrimination is significantly challenged by the “guardrail clauses” contained in the Chip Acts [5].

4. Excluding Wrongful Acts Preclusion: Analysis of GATT ArticleS XXI and XXIV

4.1 National Security Exception: GATT 1994 Article XXI

4.1.1 Purpose and Elements of the Provision

The United States and the EU are most likely to rely on Article XXI(b)(iii) of GATT 1994, which concerns situations involving an “emergency in international relations.” The application of this exception generally requires the satisfaction of three cumulative conditions: the existence of an emergency in international relations, whether the measures are intended to protect essential security interests, and whether they are considered “necessary” by the Member.

4.1.2 Potential Defense Logic of the US and EU

The US and EU argue that semiconductors constitute the foundation of national defense, that geopolitical competition constitutes an “emergency in international relations,” that the Chip Acts represent necessary actions to protect essential security interests, and that the guardrail clauses serve to prevent the flow of advanced technologies to “strategic competitors.”

4.1.3 Limited Self-Judging Nature of the Provision: From “self-Judging” to “constrained”

The DS512 panel confirmed that WTO panels retain jurisdiction to review the invocation of the security exception and that Members remain subject to the general principles of treaty interpretation and good faith. Panels are entitled to conduct objective review, covering whether the invoked situation falls within the scope of Article XXI, whether there is a plausible connection between the measures and the claimed security interests, and whether the exception has been invoked in good faith [1]. As a result, the security exception is no longer viewed as entirely self-judging, but rather as subject to certain legal constraints under WTO law.

4.1.4 Boundaries of “essential Security Interests”

The concept of “essential security interests” should generally be limited to core national defense and military interests closely connected to state survival, rather than being extended to broad notions of economic security [4]. The vast majority of semiconductor products covered by the Chip Acts serve civilian and commercial markets. Although some semiconductor products may have dual-use applications, extending the entire semiconductor industrial chain into the category of “essential security interests” constitutes an overly expansive interpretation. The US and EU have failed to demonstrate a specific and imminent threat to their essential security interests from obtaining commercial chips under normal trade conditions; their claims rest largely on hypothetical risks.

4.1.5 Non-Self-Judging Character of the “which it Considers Necessary” Clause

The Chip Acts exhibit a clear industrial protection character, with publicly stated objectives including “maintaining US leadership in semiconductors” and “creating high-wage jobs.” Where a measure simultaneously pursues security objectives and clear economic interests, stricter scrutiny under the principle of good faith becomes necessary. The connection between the US and EU measures and their claimed security objectives is tenuous. The supply chain risks invoked by the US and the EU are largely long-term and hypothetical rather than immediate and concrete, which weakens the credibility of the good-faith justification.

4.1.6 Strict Interpretation of the “emergency in International Relations” Requirement

The concept of an “emergency” implies both objectivity and urgency. The Chip Acts are long-term, structural industrial policies developed over multi-year legislative cycles, with measures extending for five years or longer. Both the legislative process and implementation mechanisms indicate that these measures are intended as long-term industrial policies rather than temporary emergency responses. If ordinary industrial subsidy measures adopted through standard legislative procedures during peacetime were treated as “emergencies,” the limiting function of this requirement would be substantially weakened [4].

4.1.7 Violation of the Necessity Test and Principle of Good Faith

The DS512 panel emphasized that a genuine and sufficiently close relationship must exist between the challenged measures and the asserted security objectives. The strong industrial protection orientation of the Chip Acts weakens the connection between the measures and the claimed security interests. Less trade-distortive alternatives exist, such as international cooperation, stockpiling agreements, and diversification of procurement sources—options that the US and EU have not seriously pursued. Instead, the measures adopted by the US and the EU impose comparatively significant distortions on international trade. Moreover, the limited consultation with affected WTO Members prior to the adoption of these measures further raises questions regarding compliance with the principle of good faith.

4.1.8 Systemic Implications

Allowing such a broad invocation of the security exception could create significant systemic consequences for the WTO framework. If semiconductors can be broadly protected on security grounds, similar arguments could later be extended to industries such as steel, automobiles, or agriculture. This could encourage excessive reliance on the security exception and weaken the effectiveness of the WTO rules-based trading system. For this reason, the security exception should be interpreted within a strict and rules-based framework.

4.2 Regional Integration Exception: GATT 1994 Article XXIV

4.2.1 Purpose and Elements of the Provision

Article XXIV permits customs unions or free-trade areas as exceptions to most-favored-nation treatment, provided they cover “substantially all the trade” and do not result in higher external barriers.

4.2.2 Lack of Standing (inadmissibility Ratione Personae)

Article XXIV governs international agreements concluded between sovereign states or separate customs territories. The US Chips and Science Act is purely domestic legislation, and the EU European Chips Act is internal legislation of the EU as a single customs territory. Neither measure constitutes an international agreement concluded among multiple sovereign states or customs territories. Accordingly, treating domestic industrial legislation as a regional integration arrangement would go beyond the intended scope of Article XXIV [6].

4.2.3 Substantive Incompatibility

The purpose of Article XXIV is to facilitate trade liberalization, whereas the Chip Acts rely on discriminatory subsidy measures that are inconsistent with the liberalizing rationale underlying the provision. Even by strained analogy, the Acts cover only a single industrial sector—semiconductors—and fall far short of the “substantially all the trade” requirement.

4.2.4 More Trade-Restrictive Effect

The “guardrail clauses” create additional trade restrictions and make trading conditions more restrictive than before. In Turkey – Textiles, the WTO Appellate Body clearly ruled that only measures “necessary” for the formation of a customs union may invoke Article XXIV as a defense [6]. The discriminatory subsidy measures contained in the Chip Acts are difficult to justify as measures necessary for the formation of a regional economic arrangement.

5. Comparative Analysis of the US and EU Acts From a Comparative Law Perspective

5.1 Value of Applying Comparative Law Methodology

Comparative law offers three-fold value in this study: First, it helps clarify the underlying policy logic of the US and EU measures and facilitates analysis of future policy developments. Second, it provides a basis for formulating differentiated response strategies according to the characteristics of each legal and policy framework. Third, it offers insight into broader changes in global economic governance reflected in the policy divergence between the United States and the European Union.

5.2 Comparison of Strategic Objectives and Legislative Motivations

The core motivation of the United States is strategic competition driven by national security, aiming to ensure the production of the most advanced chips on US soil and avoid excessive dependence on East Asian supply chains. Its policy orientation emphasizes strategic control and technological leadership. The EU’s primary objective is to reduce external dependence and achieve technological sovereignty, ensuring that key industries such as automobiles and industrial automation are not paralyzed by chip shortages. The EU approach places greater emphasis on industrial resilience and regulatory coordination.

5.3 Differentiated Approaches to Subsidy Mechanisms and Fund Allocation

US subsidies are unprecedented in scale and highly concentrated: \$52.7 billion in direct federal funding plus tax credits, directed primarily at the most advanced process nodes and focused on a few major players. The EU model is more complex and dispersed, drawing over €43 billion from the EU budget, Member State contributions, and private sector sources, with an emphasis on coordinated development across the entire value chain. These differences also reflect the distinct institutional structures through which the United States and the EU implement industrial policy.

5.4 Commonalities and Differences in Restrictive Clauses and “guardrail” Design

A common feature of both Acts is the use of discriminatory restrictions linked to investment destination. This reflects shared concerns among Western economies regarding technology transfers involving China. The difference lies in approach: the United States pursues comprehensive containment through a “small yard, high fence” strategy with overlapping investment, equipment, and export controls; the EU adopts a more cautious, selective prevention approach and has not imposed comprehensive procurement bans on Chinese equipment.

5.5 Comparative Observations on Implementation Dynamics and Evolutionary Trends

The US Department of Commerce has signed preliminary memoranda with more than twenty companies, with subsidy allocation largely clarified, though it faces political uncertainty and potential reductions in support for foreign firms under a new administration. The EU, however, faces challenges related to coordination among Member States and relatively complex administrative procedures, which may slow project approval and implementation compared with the US. However, discussions on a European Chips Act 2.0 are already underway, indicating that the EU legislation possesses dynamic and adaptive characteristics.

5.6 Conclusions From the Comparative Study and Implications for China’s Response Strategy

The similarities between the US and EU approaches largely reflect shared concerns over changes in the structure of the global semiconductor supply chain, while the differences arise from divergent political systems and strategic cultures. In responding to the United States, China may place greater emphasis on legal challenges and risk management. This would include using WTO dispute settlement mechanisms to contest the discriminatory aspects of the measures and the broad invocation of security exceptions. In dealing with the EU, greater emphasis may be placed on rule-based dialogue and economic cooperation [2], leveraging policy divergences between the US and EU to pursue pragmatic collaboration in areas where the EU remains relatively open, while making use of policy differences between the US and the EU to preserve space for pragmatic cooperation.

6. Enhancing the Feasibility and Legal Basis of Proposed Countermeasures

6.1 Legal Foundation and Feasibility Considerations for Countermeasure Design

China’s proposed countermeasures can be grounded in two main legal foundations. First, authorization under WTO rules, including recourse to the dispute settlement mechanism and the lawful imposition of countervailing duties. Second, general principles of state responsibility under international law permit an injured state to adopt proportionate countermeasures in response to internationally wrongful acts committed by another state. The feasibility of such countermeasures should be evaluated in terms of legal compatibility, political and economic costs, and overall strategic effectiveness.

6.2 Core Countermeasure One: Refining WTO Litigation Strategy and Strengthening the Evidentiary Base

China’s litigation strategy should adopt a more targeted and differentiated approach. On the one hand, claims should be segmented by filing separate cases for subsidy disputes and “guardrail clause” disputes, thereby sharpening the legal focus. On the other hand, China should proactively request “preliminary rulings,” drawing on the precedent of DS512, to seek an early panel determination on the justiciability of the security exception.

The evidentiary framework should also be developed at multiple levels. At the macro level, evidence concerning global semiconductor investment flows and changes in production capacity should be collected to demonstrate the broader market effects of the subsidies. At the micro level, particular attention should be paid to documenting cases in which Chinese enterprises have experienced order losses or investment barriers linked to the implementation of the Chip Acts. At the technical level, economic modeling methods may be used to assess the causal relationship between subsidy measures and their adverse effects.

6.3 Core Countermeasure Two: Compliant Use of Domestic Legal Countermeasure Tools

Anti-dumping and countervailing investigations should be applied in a more targeted manner. Product categories that directly compete with Chinese domestic industries should be selected. For example, the Ministry of Commerce has already initiated investigations concerning certain semiconductor products imported from the United States, and similar targeted approaches may continue to be employed. The methodology for determining injury should also be further refined, with greater emphasis on demonstrating the long-term suppressive effects of the subsidies on Chinese firms' technological research and development and capacity expansion.

“Anti-discrimination investigations” may also be developed as a supplementary legal instrument. Article 7 of the Foreign Trade Law provides the legal basis. The discriminatory nature of the opposing measures should be demonstrated across three dimensions—policy objectives, institutional design, and implementation effects—while ensuring procedural legality and adopting a graduated approach to measures.

6.4 Core Countermeasure Three: Industrial Self-Strengthening — Compliance Optimization of Industrial Policy and Cultivation of “game-Changing” Technologies

The design of domestic industrial subsidies should place greater emphasis on maintaining compatibility with WTO rules. For example, open application mechanisms could be adopted to broaden the range of eligible beneficiaries. Similarly, sunset clauses or gradually reduced subsidy arrangements may help lower the likelihood of a finding of specificity. In the longer term, China may rely more heavily on its large domestic market to promote a transition from subsidy-dependent growth toward market-oriented development. At the same time, greater emphasis could be placed on supporting breakthrough technologies in strategically important sectors with broader industrial influence.

6.5 Core Countermeasure Four: Rule-Shaping — Strategy and Discourse Construction for Participation in Global Rule Reshaping

China may also promote discussions on international rule reform by cooperating with other developing countries to raise issues such as discriminatory subsidies within the WTO framework. China could strengthen cooperation with emerging economies in Southeast Asia, Latin America, and other regions in support of a more open and stable global supply chain system. Such cooperation could emphasize principles of transparency, openness, and non-discrimination in global supply chains. A systematic articulation of the “right to development” should be advanced, emphasizing that moderate industrial policy constitutes a legitimate tool for developing countries to achieve industrialization. In addition, China may continue to advocate concepts of cooperative global governance in international economic relations. This approach emphasizes the importance of international cooperation in enhancing the stability and security of the global semiconductor industry.

7. Conclusion

7.1 Main Findings

First, the subsidy measures contained in the US and EU Chip Acts raise significant concerns regarding their consistency with the SCM Agreement. The appropriations and tax credits satisfy the elements of “financial contribution” and “benefit conferred” and possess legal specificity. These large-scale subsidy measures may cause serious prejudice to China's semiconductor industry and may also lead to the nullification or impairment of expected trade benefits. Second, the “guardrail clauses” introduce differential treatment linked to investment destination, raising questions regarding compatibility with the GATT principles of most-favored-nation treatment and national treatment. Third, the defenses potentially available under GATT Article XXI (national security exception) and Article XXIV (regional integration exception) appear difficult to sustain under existing WTO jurisprudence. Fourth, significant differences exist between the US and EU approaches in terms of strategic objectives and institutional design, creating room for differentiated response strategies. Fifth, China may consider developing a more comprehensive response framework combining WTO litigation, trade remedies, domestic industrial development, and participation in international rule-making.

7.2 Research Limitations and Future Prospects

First, due to limitations in available data, this study does not provide a detailed econometric analysis of the trade-distorting effects of the subsidy measures. Future research could further strengthen interdisciplinary analysis combining industrial economics and international trade law. Second, both the US and EU Acts remain in dynamic evolution—the US faces political uncertainty, while the EU is discussing a 2.0 upgrade. Accordingly, continuous observation and updated research will remain necessary. Third, the WTO dispute settlement mechanism itself is undergoing reform, with the Appellate Body still suspended. Future studies may therefore examine the compliance issues surrounding the Chip Acts within the broader context of WTO reform and changes in global economic governance.

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Conflicts of Interest

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