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RCEP versus Friend-shoring: The Politics of Industrial Chain Integration in the Asia-Pacific Electronic Components Industry

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Abstract

This study explores how the Regional Comprehensive Economic Partnership Agreement (RCEP) and U.S.-led "friend shoring" affect the supply chain of electronic components in the Asia-Pacific region. The study of electronic components as strategic intermediate products explores how RCEP can promote industrial integration in the region and how member states (especially ASEAN economies) can deal with the increasing tension between economic integration and geopolitical competition between China and the United States. The study adopts a qualitative comparative political economy approach, combined with policy text analysis, descriptive trade data analysis and semi-structured interviews with eight experts.

The results of the study show that RCEP promotes regional integration mainly through tariff reductions, cumulative rules of origin, trade facilitation and broader institutional coordination. These mechanisms reduce institutional barriers and strengthen existing production networks, rather than lead to immediate structural changes. In contrast, U.S.-led friend shoring leads to selective adjustments rather than comprehensive decoupling. The study concludes that the regional supply chain is characterized by the coexistence of rule-based integration and reorganization driven by security factors. The study suggests that RCEP member states should deepen rule enforcement, customs coordination and regional production connectivity, while enhancing resilience in the context of increasingly complex geopolitical uncertainty.

Keywords: *RCEP; Electronic Components; Friend-shoring; Industrial-chain Integration*

1. Introduction

In recent years, the global trade environment has been reshaped due to the disruption caused by the epidemic and the intensification of geopolitical competition. Supply chain security policies, including export control and investment review, have accelerated the politicization of the global industrial chain. In particular, the intensifying Sino-US strategic rivalry has increasingly transformed supply chains in high-technology sectors into arenas of geoeconomic competition. The electronic components and semiconductor related industries have become particularly sensitive to export controls, industry subsidies, investment

restrictions, and supply chain security policies. In this situation, regional production networks are not only influenced by market efficiency and economic interdependence, but also by strategic issues related to technological leadership, resilience, and geopolitical consistency. Under such circumstances, the electronic components industry provides a useful case for examining the tension between economic integration and security-driven restructuring. As the core area that supports the manufacturing industry and the digital economy, the industry has the characteristics of decentralized production, frequent cross-border circulation and high regional specialization. These features make it highly sensitive to tariffs, rules of origin, regulatory changes, and geopolitical interventions.

This research focuses on analyzing two different governance logics in the Asia-Pacific electronic components industry. On the one hand, the Regional Comprehensive Economic Partnership Agreement (RCEP) has built a rule-based regional integration framework. By lowering tariffs, setting cumulative rules of origin and promoting trade facilitation, it reduces institutional barriers and supports deeper regional production links. On the other hand, the U.S.-led friend-shoring reflects a security-driven approach that encourages selective supply-chain adjustment toward politically aligned economies through export controls, industrial policy, and alliance-based coordination, rather than promoting broad integration, but prioritizing flexibility and geopolitics.

Existing research tends to focus either on trade models at the macro level or on the economic impact of regional agreements, while paying less attention to the interaction between strategic intermediate products (such as electronic components) and integration-oriented institutions and structural adjustment driven by security factors. This study aims to fill this gap by studying how RCEP promotes industrial chain integration and how member states (especially ASEAN economies) respond to the increasing tension between economic cooperation and Sino-US competition.

2. Objectives

1) To analyze how RCEP promotes industrial chain integration in the Asia-Pacific electronic components industry through tariff reductions, rules of origin accumulation and relevant institutional arrangements.
2) To examine how U.S. friend-shoring and related security-driven policies are reshaping regional industrial chains, and how RCEP member states—especially ASEAN economies—balance between economic integration and Sino-US competition.

3.Materials and Methods

3.1 Methodological Positioning and Rationale

Studies of industrial-chain integration under free trade arrangements have used a wide range of methods, including trade-share analysis, input-output decomposition, and simulation-based approaches such as Computable General Equilibrium (CGE) and Global Trade Analysis Project

(GTAP). At the same time, research on value-chain governance and production networks has provided broader analytical tools for understanding cross-border specialization and coordination (Coe & Yeung, 2015；Gereffi, 1994; Gereffi, Humphrey, & Sturgeon, 2005; Porter, 1985). Traditional regional integration theory also offers an important background for explaining how institutional arrangements affect production linkages (Balassa, 1961； Viner, 1950).

However, these quantitative and structure-oriented approaches struggle to capture the institutional, political and strategic factors that increasingly affect the restructuring of contemporary supply chains. In the electronic components industry in the Asia-Pacific region, the interaction between rule-based regional integration and security-oriented policy intervention cannot be fully explained by the trade model alone. Recent international political economy scholarship has shown that production networks are increasingly influenced by geoeconomic rivalry, policy intervention, and the securitization of interdependence (Farrell & Newman, 2019； Luttwak, 1990). Based on this, this study adopts a qualitative comparative political economy approach. The purpose is not to predict the specific magnitude of changes in the industry after the implementation of RCEP, but to explain how institutional rules, structural models and strategic pressures interact, so as to shape the regional electronic components industry chain.

3.2 Research Orientation and Overall Design

This study adopts a qualitative and interpretive research orientation. Given the limited supply of value-added data after RCEP and the lag of data sets such as OECD-TiVA, it is more appropriate to use qualitative design rather than econometrics or simulation-based methods to explore the institutional and geopolitical issues of the recent industrial chain restructuring.

The overall design employs a three-layer analysis: institutions, structures, and interpretations. “Institutions” refers to formal rules and policy arrangements, such as trade agreements, industrial policies and official policy statements. “Structures” refers to the observable trade and value chain patterns in the regional electronic components industry. “Interpretations” refers to the experts’ assessments of these institutional and structural changes in the broader political and economic context. This design makes it possible to link formal policy intentions, empirical structural trends, and expert interpretations within a single analytical framework.

3.3 Research Methods, Data Sources, and Reliability

The study combines three methods. First, policy text analysis is used to compare the governance logics embedded in RCEP and major U.S. policy initiatives, including the RCEP Agreement, Section 301-related measures, the CHIPS and Science Act, and official statements on friend-shoring and de-risking (Association of Southeast Asian Nations, 2020; The White House, 2021; Yellen, 2022). This part of the analysis identifies the contrast between RCEP’s

rules-based regional openness and the selective, security-oriented logic of U.S. supply-chain policy.

Second, descriptive data analysis is used to examine structural patterns in the regional electronic components industry. The analysis focuses on electronic components under HS 8532–8533, 8534–8538, 8541, and 8542, following the product scope defined for this study (World Customs Organization [WCO], 2022). Data are drawn mainly from UN Comtrade, OECD-TiVA, UNCTADstat, and ASEAN statistical sources. Key indicators include trade shares in the region, the overall pattern of regional procurement, and signs of continuity or adjustment in regional production linkages. This part of the content is not intended to test the causal effects, but to identify structural tendencies that can be interpreted in combination with the institutional context.

Third, semi-structured interviews were conducted with eight experts from universities, think tanks and international organizations, which provided explanatory views on RCEP, supply chain restructuring and the strategic positioning of ASEAN. The content of the interviews is interpreted through thematic analysis to identify the repeatedly mentioned assessment of institutional stability, selective adjustment and the role of ASEAN in the regional production network.

Together, these methods form a comprehensive analytical framework. The policy texts clarify the intentions of the institutions, the descriptive data reveals the structural trends, and expert interviews provide in-depth interpretations. The reliability of analysis has been enhanced by using authoritative and transparent data sources, methodological cross-verification of multiple forms of evidence, and careful interpretation in view of data lag and the changing policy environment.

4. Results and Discussion

4.1 Contrasting Governance Logics: RCEP and Friend-Shoring

The policy evidence reveals two contrasting governance logics shaping the Asia-Pacific electronic components industry. RCEP reflects a rules-based approach to regional integration. Through tariff reduction, cumulative rules of origin, and trade-facilitation measures, it lowers institutional frictions and supports the continued operation of cross-border production networks. Its central function is not to redirect production abruptly, but to provide a predictable framework that stabilizes existing regional supply-chain linkages.

By contrast, U.S.-led friend-shoring reflects a security-oriented approach to supply-chain governance. It does not operate on formal regional agreements, but through policy signaling, export control, industrial subsidies and strategic coordination with politically aligned partners. In this framework, supply-chain decisions are increasingly shaped by resilience, political reliability, and geopolitical alignment (International Monetary Fund [IMF], 2023； The White House, 2021; Yellen, 2022). More broadly, these developments reflect the growing influence of Sino-US strategic competition over the governance of regional production networks, especially in strategic technology sectors associated with supply-chain security and industrial

resilience. In this sense, friend-shoring reflects the growing overlap between industrial policy and national security in contemporary trade strategy (Hopewell, 2022).

These two logics do not simply replace each other, but coexist in the same regional production network. Rule-based integration provides an institutional basis for continuous regional interconnection, while security-oriented policies promote selective internal adjustment.

4.2 Structural Patterns of Regional Electronic Components Trade

Trade data suggests that the electronic components industry in the Asia-Pacific had already exhibited a high degree of regional interdependence before RCEP formally entered into force for most member states in 2022. As shown in Figure 4.1, China, Japan and South Korea all maintained substantial imports of electronic components, although China's imports are significantly larger than those of Japan and South Korea, and are also more volatile. These fluctuations provide background evidence for the industry's sensitivity to changes in global demand and the broader policy environment.

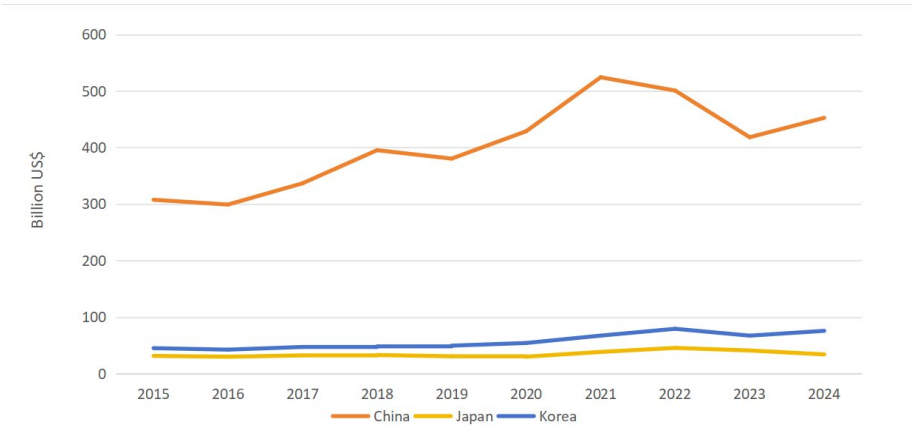


Figure 4.1: Imports of Electronic Components by China, Japan, and Korea, 2015 – 2024.
Source: UN Comtrade Database (HS 8532 – 8542)

More importantly, the import structure indicates a substantial degree of pre-existing regionalization within the Asia-Pacific electronic components industry. As shown in Figure 4.2, the share of electronic components imported from economies that later became RCEP members remained consistently high in China, Japan, and South Korea between 2015 and 2019. Japan's regional import share remained at around 50%, while South Korea's proportion was even higher and showed a gradual upward trend. China's import share fluctuated more significantly, reflecting a certain degree of extra-regional diversification, but regional procurement linkages nevertheless remained strong throughout the period.

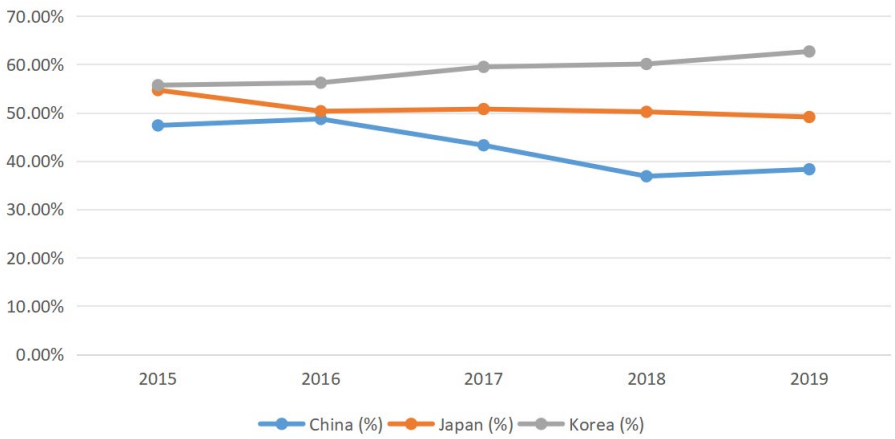


Figure 4.2: Import Shares of Electronic Components among Prospective RCEP Member States
Source: Author's calculations based on UN Comtrade.

These patterns suggest that a dense regional production network had already emerged among prospective RCEP member states before the agreement formally entered into force for most members in 2022. Therefore, the relevance of the pre-RCEP data lies not in demonstrating the direct causal effects of RCEP, but in illustrating the pre-existing regional interdependence that RCEP subsequently institutionalized and reinforced through rule-based coordination, tariff reduction, and trade facilitation measures. At the same time, variations in sourcing patterns across economies indicate that regional integration continues to coexist with differentiated diversification strategies and gradual supply-chain adjustment under growing geopolitical pressure.

4.3 Expert Interpretations and ASEAN's Positioning

Interviews with experts further confirm this view. Most interviewees suggested that RCEP should not be seen as a mechanism for immediate structural transformation, but rather as a tool to stabilize existing regional production networks. In such an industry with a high degree of cross-border specialization and a high degree of technology embedding, the predictability of the system itself is a major contribution.

Experts also emphasized that security-oriented policy pressures do not necessarily lead to sudden migration or total decoupling. On the contrary, enterprises tend to expand the scope of sourcing, adjust some stages of production or expand production capacity elsewhere, while remaining within the broader architecture of the established regional network. This means that continuity and adjustment should be seen as part of the same regional process, rather than the result of mutual exclusion.

Under such circumstances, ASEAN economies have gained more room for structural development. The inclusive framework of RCEP supports their continued participation in regional production networks, while external strategic pressures have prompted enterprises to adopt a multi-node configuration model in Southeast Asia. However, this does not imply the transfer of technical leadership. Rather than fully aligning with either China-centered regional

integration or U.S.-led strategic realignment, many ASEAN economies appear to adopt a pragmatic balancing strategy. They seek to preserve the benefits of deep regional production linkages with China while also attracting investment and production diversification associated with friend shoring initiatives. On the contrary, the role of ASEAN is mainly reflected in the functions of connection, assembly, testing and intermediate production in the regional division of labour that still has a hierarchical structure, and its status has been strengthened.

4.4 Discussion: Coexistence of Rules-Based Integration and Selective Restructuring

Taken together, these findings suggest that the evolution of the Asia-Pacific electronic components industry cannot be adequately explained through a simple opposition between regional integration and fragmentation. Rather, the regional production network is shaped by the simultaneous coexistence of rules-based integration and security-driven selective restructuring associated with Sino-US strategic competition. RCEP mainly promotes industrial chain integration by stabilizing institutional expectations, reducing cross-border transaction costs and strengthening the continuity of existing regional production networks. Therefore, its impact should be regarded as the stabilization of the system rather than a short-term structural rewriting.

At the same time, friend shoring and related security pressures do have a real impact, but this impact is more realized through strategic signals, regulatory expectations, compliance pressures and selective rebalancing than through sudden interruptions or full-scale decoupling. Enterprises adapt to the existing network through diversification and multi-node adjustment. In this environment, the ASEAN economies have gained more room to expand its role in the region, but mainly in terms of connectivity and intermediate functions.

Overall, the industrial development path of the region is neither a simple reintegration nor a comprehensive decoupling. Instead, continuity and selective adjustment unfold simultaneously within an enduring regional production network. This view helps to connect research on regional integration with the growing literature on supply chain security, and also shows that RCEP member states should continue to strengthen rule enforcement, customs coordination and regional production links in the context of rising geopolitical uncertainty.

5. Conclusion

This study explores how the interaction between the rules-based regional integration of RCEP and the U.S.-led security-oriented supply chain policy affects the electronic component industry chain in the Asia-Pacific region. In general, the research results show that the industrial development trajectory in the region is neither simple reintegration nor comprehensive decoupling. Instead, it is characterized by the continuity of the system and the coexistence of selective adjustment. RCEP mainly enhances the stability and predictability of existing regional production networks, while security-oriented policies encourage gradual reconfiguration within these networks. This conclusion helps to clarify how regional economic integration can be sustained in the context of geopolitical competition.

More specifically, the study found that the main impact of RCEP lies in institutional stability rather than short-term structural reshaping. By reducing tariffs, cumulative rules of origin, facilitating trade, and broader coordination of rules, RCEP has reduced the cost of cross-border transactions and reduced the uncertainty of compliance in intermediate product trade. At the same time, structural analysis and expert interviews show that friend shoring and related security pressures are more likely to lead to selective diversification, multi-node adjustment and gradual rebalancing, rather than completely interrupting regional production relations.

These findings also have broader analytical significance. They show that the electronic components industry in the Asia-Pacific should be understood from the perspective of hierarchical governance, that is, rule-based integration and security-oriented reorganization can exist simultaneously in the same production system. This perspective helps to bridge the gap between the study of regional economic integration and the study of supply chain securitization, showing that these two dynamics do not simply replace each other, but interact and jointly shape the changes in regional industries.

At the same time, there are some limitations of this study. The availability of post-RCEP value-added data is still limited, and public trade and investment statistics cannot fully cover the most technologically characteristic stages of the electronics industry chain. In addition, the analysis was carried out in a rapidly changing geopolitical environment, which means that subsequent policy changes may further change the dynamics of regional production. Therefore, future research can be based on more recent post-RCEP data, more refined components-level evidence, and broader corporate-level or stakeholder-based investigation to assess more precisely how regional integration and strategic restructuring continue to interact over time.

References

Association of Southeast Asian Nations. (2020). *Regional Comprehensive Economic Partnership agreement (full text)*. Retrieved from https://asean.org/wp-content/uploads/2024/10/Regional-Comprehensive-Economic-Partnership-RCEP-Agreement-Full-Text.pdf.

Balassa, B. (1961). *The theory of economic integration*. London, England: George Allen & Unwin.

Coe, N. M., & Yeung, H. W. C. (2015). *Global production networks: Theorizing economic development in an interconnected world*. Oxford, England: Oxford University Press.

Farrell, H., & Newman, A. L. (2019). Weaponized interdependence: How global economic networks shape state coercion. *International Security*, 44(1), 42-79. doi:10.1162/isec_a_00351

Gereffi, G. (1994). The organization of buyer-driven global commodity chains: How U.S. retailers shape overseas production networks. In G. Gereffi & M. Korzeniewicz (Eds.), *Commodity chains and global capitalism* (pp. 95–122). Westport, CT: Praeger.

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy, 12*(1), 78-104.

doi:10.1080/09692290500049805

Hopewell, K. (2022). Beyond U.S.-China rivalry: Rule breaking, economic coercion, and the weaponization of trade. *AJIL Unbound, 116,* 58–63. doi.org/10. 1017/aju.2022.3

International Monetary Fund. (2023, April). *Geoeconomic fragmentation and foreign direct investment.* In *World Economic Outlook: A rocky recovery* (Chapter 4). Washington, DC: Author

Luttwak, E. N. (1990). From geopolitics to geo-economics: Logic of conflict, grammar of commerce. *The National Interest*, 20, 17-23. Retrieved from https://www.jstor.org/stable/42894676

Porter, M. E. (1985). *The competitive advantage: Creating and sustaining superior performance.* New York, NY: Free Press.

The White House. (2021, June). *Building resilient supply chains, revitalizing American manufacturing, and fostering broad-based growth: 100-day reviews under Executive Order 14017* [Report].

United Nations Conference on Trade and Development. (2019). *Digital economy report 2019: Value creation and capture: Implications for developing countries.* Geneva: Switzerland: United Nations. Retrieved from https://unctad. org/ system/files/official-document/der2019-en.pdf

Viner, J. (1950). *The customs union issue.* New York, NY: Carnegie Endowment for International Peace.

World Customs Organization. (2022). *HS nomenclature 2022 edition.* Retrieved from https://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs-nomenclature-2022-edition.aspx

Yellen, J. L. (2022, April 13). *Remarks by Secretary of the Treasury Janet L. Yellen on way forward for the global economy* [Remarks]. *U.S.* Department of the Treasury. Retrieved from https://home.treasury.gov/news/press-releases/jy 0714