

America's Strategy Through the Quadrilateral Security Dialogue (Quad) Alliance in Countering the Chinese Threat in the Joe Biden Administration

Yulianti Anggarini¹, Khoirunnisa Khoirunnisa²
Universitas 17 Agustus 1945 Jakarta, Indonesia¹²
Correspondent: aanggarinii@mail.com¹

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ABSTRACT: The United States' approach through the Quadrilateral Security Dialogue (Quad) demonstrates the use of economic diplomacy and soft balancing as strategic tools to address China's growing influence in the Indo-Pacific under the Biden administration. This research explores how the US leverages economic collaboration within the Quad framework to counterbalance China's regional dominance without resorting to military confrontation. Adopting a qualitative descriptive method and literature review, the study applies Stephen D. Krasner's theory of international regimes in combination with the concept of economic diplomacy. The findings emphasize key initiatives such as the Quad Vaccine Partnership, the Infrastructure Coordination Group, and joint efforts on critical and emerging technologies as pivotal in offering Indo-Pacific states alternatives to economic reliance on China. These actions strengthen the US's economic and diplomatic reach and indicate a shift in foreign policy toward multilateral engagement grounded in democratic principles and openness. Nonetheless, the strategy faces obstacles, including divergent interests among Quad members and institutional limitations in policy execution. Ultimately, the economic dimension of the Quad plays a vital role in US efforts to navigate strategic rivalry in the Indo-Pacific and may serve as a model for other regional alliances pursuing peaceful responses to geopolitical competition.

Keywords: Quad, Economy Diplomacy, United States, International Regime, Indo-Pacific.



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INTRODUCTION

In the current global geopolitical battle, especially among the United States and China, the Indo-Pacific area is becoming an increasingly important theater. It is strategically significant since it is a major center for global economic growth and plays a crucial role in international trade routes. In

recent years, both nations have expanded their presence in the region, seeking to assert influence through various strategies, including the strengthening of defense and strategic alliances with regional states, the implementation of maritime security initiatives, and the launch of major infrastructure development projects.

China's emergence as a dominant global economic actor has been propelled by a variety of strategic endeavors, such as asserting claims in the South China Sea and the Belt and Road Initiative (BRI), enhancing economic power as well as building stronger regional alliances. These efforts are frequently interpreted as attempts to heighten partner nations' reliance on China's economy (Ayuningtyas, 2022). This condition raises concerns for the United States in conjunction with its strategic partners, as it possesses the potential to constrain its sphere of influence within the region

To mitigate China's regional dominance, the United States revitalized the Quadrilateral Security Dialogue (Quad), a strategic and defense partnership involving Japan, India, and Australia. While initially established in 2004 in response to the Indian Ocean tsunami, the group held its first formal gathering in 2007 during the ASEAN Regional Forum in Manila (Ba, 2023). Following a period of inactivity caused by diverging interests among its members, Quad was reactivated in 2017. At that meeting, member states addressed a range of strategic issues, with a central focus on promoting the Indo-Pacific as a shared geopolitical framework (Mitra, 2023). In addition, the Quad's revival was primarily motivated by growing concerns over China's regional expansion. Under the administration of President Joe Biden, the role of the Quad has further evolved to encompass not only security cooperation but also collaboration in areas such as infrastructure development, vaccine distribution, technological innovation, and the strengthening of regional supply chains (Wei & Zhang, 2021).

Biden's cooperation is in line with the concept of soft balancing, which is a form of balancing great powers without direct military involvement. This concept emphasizes the formation of strategic alliances, diplomatic cooperation, and strengthening economic relations to limit domination without open confrontation (Larionova, 2020). In this context, the Quad functions as a strategic platform for the United States to indirectly balance China's growing influence through cooperative political and economic means without establishing a formal military alliance.

Theoretically, cooperation in QUAD can be understood through the framework of the international regime, according to Stephen D. Krasner (Prayuda et al., 2019). Quad represents a form of regional regime that responds to Indo-Pacific challenges, especially when facing China's influence. The Quad functions as a regional regime in addressing strategic challenges in the Indo-Pacific, particularly those arising from China's growing influence. Furthermore, the United States' approach through the Quad also reflects the practice of economic diplomacy. This concept helps explain how Washington utilizes economic tools as part of its broader foreign policy strategy within the alliance. Van Bergeijk and Moons define economic diplomacy as the strategic use of instruments such as trade, investment, and development assistance to cultivate mutually beneficial interdependence and reduce the likelihood of conflict through cooperative mechanisms. Similarly, Rashid views economic diplomacy as the formulation and negotiation of policies related to production, international trade in goods and services, labor flows, and cross-border investment

(Killian, 2012). Within this framework, initiatives spearheaded by the United States, such as the Quad Vaccine Partnership, the Infrastructure Coordination Group, and cooperation on critical and emerging technologies, serve as concrete expressions of economic diplomacy. These initiatives are intended to reduce Indo-Pacific countries' economic reliance on China while reinforcing a rules-based regional order through strengthened economic collaboration. Within this framework, initiatives led by the United States serve as tangible manifestations of economic diplomacy. These efforts are explicitly designed to diminish the economic reliance of Indo-Pacific countries on China and to reinforce a rules-based regional order through economic cooperation.

Nevertheless, the effectiveness of the Quad Alliance in countering China's regional dominance remains a subject of debate. One of the primary challenges faced by the alliance is the divergence of strategic interests among its member states. Additionally, ASEAN countries have responded with caution. Several ASEAN states are striving to uphold stable relations with both the United States and China. Some ASEAN members view the Quad with suspicion, perceiving it as a potential threat to ASEAN's centrality in regional cooperation (Yen, 2022). Moreover, China has expressed concerns regarding the alliance, framing it as a threat to regional stability. Although the Quad does not focus exclusively on military cooperation, Chinese officials have accused it of resembling "Asia's NATO" (Mitra, 2023).

The Quad alliance has evolved beyond a symbolic partnership, emerging as a multifaceted platform addressing critical non-military challenges in the Indo-Pacific region. Its agenda now prominently includes collaborative efforts in health security through the Quad Vaccine Partnership and infrastructure development via the Quad Infrastructure Coordination Group (QICG). This study fills an important gap by examining the underexplored economic dimension of the Quad, especially under the Biden administration a dimension that has been largely overlooked in existing security-centric literature. Accordingly, the central research question guiding this analysis is "How has the United States utilized economic diplomacy within the Quad framework, through vaccine cooperation, infrastructure investment, and technological collaboration, to strategically counter China's dominance in the Indo-Pacific during the Joe Biden administration?" This question anchors the study's focus on the Quad's economic policies as instruments of geopolitical influence beyond traditional military balancing.

METHOD

This research employs a qualitative descriptive approach to examine the United States strategy through the Quadrilateral Security Dialogue (Quad) alliance for facing of rising Chinese influence during Joe Biden's administration. The aim is to understand how the United States leverages the Quad as a strategic instrument of its foreign policy in the Indo-Pacific region.

Qualitative research is a research process that is intended to understand the phenomenon of what happens to a research subject (Khoirunnisa & Jubaidi, 2024). In this qualitative research, data collection techniques are carried out through literature studies by tracing various information from peer-reviewed academic journals, books, scientific publications, and news articles from trusted

international media. These sources provide a comprehensive understanding of international regime theory and economic diplomacy, as well as the development of cooperation in the Quad Alliance. This literature study approach allows the researcher to broaden the scope of analysis and deepen the understanding of the topic under study. The literature-based approach enables the researcher to broaden the analytical scope and enhance conceptual depth.

RESULT AND DISCUSSION

Previous studies have demonstrated that the revival of the Quad alliance holds not only symbolic significance but also tangible implications for regional geopolitical dynamics. Although the Quad does not constitute a formal military bloc, it is nonetheless framed by China as a disruption to regional order. In response, China has undertaken several strategic maneuvers, including enhancing security cooperation with South Pacific nations, strengthening its maritime capabilities in the South China Sea, and deepening strategic ties with actors such as Russia and North Korea. (Satriakhan & Prasetyono, 2019) States that although Quad does not form a formal military bloc, it is perceived by China as a threat to regional stability. In response, China undertook various strategic maneuvers, such as enhancing security cooperation with South Pacific countries, strengthening maritime capabilities in the South China Sea, and deepening strategic relationships with actors such as Russia and North Korea. Research (Rahman, 2023) reinforces these findings by showing that China is actively strengthening its military network and expanding maritime influence as a form of adjustment to external pressure from Quad presence.

While many studies have focused on the Quad's security posture, there is still limited scholarly attention to its role as an instrument of economic diplomacy. In particular, how the alliance utilizes vaccine aid, infrastructure development, and technology capacity-building to extend its strategic influence remains underexplored. Applying international regime theory, this study contends that the Quad seeks to establish a normative framework rooted in transparency, democratic governance, and open cooperation. Furthermore, it examines how emerging cooperation regimes in health, infrastructure, and technology contribute to building mutually beneficial interdependence with Indo-Pacific states. This strategic yet peaceful approach underlies the author's interest in the topic. The use of diplomacy, particularly economic diplomacy, as a tool to shape regional order, manage competition, and prevent conflict represents a timely and constructive development in international relations. The author believes that exploring the Quad through the lens of economic diplomacy offers fresh insights into how emerging powers can navigate rivalry while promoting stability and mutual gain. Therefore, this study seeks to analyze the Quad's evolving role as a security actor and as a platform for economic cooperation that supports regional resilience and long-term peace. Thus, combining the lenses of economic diplomacy and international regime theory provides a timely and relevant analytical framework for reassessing the Quad's strategic role beyond conventional defense-oriented narratives.

These dynamics illustrate that the rise of the Quadrilateral Security Dialogue (Quad) not only provokes political and military responses from China but also necessitates a strategic recalibration

of US foreign policy. Contemporary geopolitical competition can no longer be addressed solely through military means; it requires a multidimensional approach that integrates economic leverage, public diplomacy, and structured multilateral cooperation. In this context, the Biden administration has positioned the Quad as a central component of the United States' Indo-Pacific strategy, aiming to reshape the regional order through a combination of peaceful engagement and assertive diplomacy.

The Biden administration emphasized the United States' renewed commitment to the global order through the slogan "America is Back," signaling a significant departure from the "America First" approach adopted by former President Donald Trump. In contrast to the previous unilateral posture, Biden's foreign policy promotes active multilateral engagement and diplomacy rooted in international cooperation (Lisbet, 2021). This strategy highlights the United States' intention to reshape the balance of power in the Indo-Pacific to curb China's expanding regional dominance. Biden acknowledged that the United States could not address global challenges unilaterally, a recognition reflected in his administration's articulation of multilateralism as a key normative framework in US foreign policy discourse (Aqmellia Tanzillah, Yuswari O. Djemat, 2024)

Foreign Policy of the United States During the Joe Biden Administration

In the early days of his leadership, Biden immediately brought America back into various global collaborations 131 that had been abandoned, including the Paris Agreement and the World Health Organization (WHO). This move was part of a broader effort to re-establish US global credibility and revitalize its soft power influence (Khoirunnisa & Sari, 2024). Biden also strengthened relations with NATO and the European Union and revived regional forums such as the Quadrilateral Security Dialogue (Quad) and the G7; the Biden administration sought to reposition the United States within a recalibrated global strategic architecture (Lee, 2024)

Biden's foreign policy approach places the Indo-Pacific at the forefront of US strategic interests. The 2022 Indo-Pacific Strategy explicitly identifies the region as central to US diplomatic, economic, and security priorities. This outlook also responds to the increasing assertiveness of China's multifaceted influence spanning economic, military, and technological domains (Park, 2024). This approach is in response to the rise of an economically, militarily, and technologically aggressive China.

In the realm of trade policy, the Biden administration has continued the imposition of tariffs on Chinese goods, a measure originally implemented during the Trump era. While President Biden generally adopts a diplomacy-oriented approach rather than direct confrontation, his administration has strategically emphasized economic, technological, and development-focused diplomacy (Zaki & Sahide, 2024). During the 2021 Quad Summit, the United States emphasized the importance of promoting an Indo-Pacific that is open, stable, and resistant to coercive influence (Chan & Lee, 2023). This event marked the beginning of a broader US initiative to build alternative economic coalitions in the region. As part of this strategy, launched in 2022, the Indo-Pacific Economic Framework (IPEF) reflects Washington's renewed commitment to shaping the regional economic architecture, a multilateral initiative involving 14 countries, including Japan, India, South

Korea, and several ASEAN members such as Indonesia, the Philippines, and Brunei (Lin, 2023). The IPEF seeks to enhance regional collaboration with a focus on areas including trade, supply chain resilience, and investment while deliberately excluding China from participation. It also aims to encourage American companies to relocate their supply chains outside of China. Furthermore, the US has stepped up efforts to persuade European nations to reduce their economic engagement with China, particularly in sectors like infrastructure and advanced telecommunications. A notable manifestation of this strategy is the push to prevent European firms from partnering with Huawei in the development of 5G technology (Umbach, 2020).

In addition to economic strategies, the United States has taken notable actions to curb China's access to vital technologies. The US administration has enforced export restrictions on high-performance microchips destined for China, targeting key innovations from firms like NVIDIA and AMD (Mariko Oi, 2023). Furthermore, Washington has imposed sanctions on major Chinese tech companies, including Huawei and ZTE, citing national security risks. Alongside these efforts, the Biden administration enacted the CHIPS and Science Act (Michelle Kurilla, 2024) to boost domestic chip manufacturing. The US has deepened strategic partnerships with strategic partners such as Taiwan, Japan, and South Korea to build robust supply chains and reduce dependency on Chinese technology.

In addition to these policies, Biden also emphasizes that democracy is at the core of his foreign policy. This can be seen in the Summit for Democracy in 2021 and 2023, where the United States invited dozens of democratic countries to strengthen a standard value system in the face of global authoritarianism challenges. This policy is not merely rhetorical but serves as an ideological pillar in foreign policy, including in justifying the direction of Quad cooperation, which is said to be "based on the principles of democracy, rule of law, and freedom" (White House, 2021).

Through this policy, Under Biden, America's status as a leading power in the free world was not only restored but reinforced, also reframed US international influence as a normative power, not hegemony. This is important in the Indo-Pacific context, where many countries have economic interests with China.

The United States Strategy in Balancing Power through Quad in the Era of Joe Biden

Since taking office, President Joe Biden has emphasized the Quad's vital role in advancing US strategic interests in the Indo-Pacific. This aligns with the broader US Indo-Pacific Strategy, which emphasizes maintaining a stable and inclusive regional framework. The administration's commitment was reflected in the inaugural Quad Leaders' Summit held virtually in March 2021, with participation from the US, Japan, India, and Australia. This event marked a shift in the group's identity from a consultative forum to a platform for substantive multilateral collaboration, especially in economic domains.

In contrast to confrontational approaches or formal military blocs, America's economic strategy through Quad is a form of soft containment, which seeks to limit China's dominance through normative and cooperative approaches. This approach is based on multilateral cooperation that emphasizes standards of transparency, good governance, and democratic values. In this context,

the strategy reflects the practice of economic diplomacy and becomes a concrete form of the concept of soft balancing, which is the balancing of great powers without the direct use of military force (Larionova, 2020)

The Quad has increasingly functioned as a collaborative mechanism to reduce regional overreliance on China, especially in sectors like connectivity infrastructure, digital technologies, and logistics networks. While it does not openly position itself as an adversary to BRI, the Quad emphasizes an alternative model of development that is guided by principles such as openness, accountability, and long-term sustainability. In America's foreign strategy in the Indo-Pacific, economics is no longer a tool but the main instrument for building long-term influence. This is reinforced by the statement in the Indo-Pacific Strategy of the United States document, which states that the success of the Quad is a measure of America's credibility in the region.

1. Quad Vaccine Partnership

Launched in March 2021, the Quad Vaccine Partnership is one of the alliance's central initiatives to address the global COVID-19 crisis collectively. This effort not only tackled public health challenges but also sought to highlight the strategic influence of the United States and its Indo-Pacific partners (Miller, 2023). Unlike China, which has been perceived as expecting long-term diplomatic alignment from vaccine recipient countries (Khoirunnisa, 2022), Through a collaborative approach involving financial and logistical contributions from all four countries, the alliance aimed to distribute up to one billion vaccine doses to developing nations across South Asia, Southeast Asia, and the Pacific (Udayakumar & Merson, 2021)

As part of its operational rollout, India served as the core manufacturing site for vaccine production, in cooperation with the pharmaceutical firm Biological E, while the United States and Japan contributed financial backing. Australia coordinated logistical efforts and distribution plans for recipient countries. By the end of 2022, the Quad aimed to deliver nearly one billion doses of COVID-19 vaccines to lower-income nations across key regions, including South and Southeast Asia and Pacific island states (Upadhyay, 2021). Beneficiary countries spanned from Bhutan and Bangladesh to Indonesia and Fiji—regions that also receive doses from other global suppliers (Sinkkonen & Ruokamo, 2022)

Launched to enhance international access to effective vaccines, the Quad Vaccine Partnership relied on the collective strengths of its member states. Under this initiative, Quad nations pledged to supply over 1.2 billion vaccine doses globally (Government of India, 2022). However, distribution faced delays due to a severe COVID-19 resurgence in India in mid-2021, impacting production and global export timelines, resulting in limited distribution of Quad vaccines in the first year and not reaching the expected target (Chakraborty et al., 2021)

In 2022, the Quad Vaccine Partnership moved into its operational phase. In one key initiative, India, in coordination with diplomatic representatives from other Quad members, delivered over 325,000 doses of Covishield vaccines to Cambodia, an effort aligned with its broader commitment under the Quad framework. This delivery was part of India's pledge to provide 500,000 vaccine doses throughout the Indo-Pacific, as stated by Prime Minister Narendra Modi, to support Quad's

health diplomacy efforts (Limaye, 2023). The peak of this initiative was reached in mid to late 2022, when, during the Quad Summit in Tokyo, member state leaders reported that 265 million COVID-19 vaccine doses had been successfully delivered across Indo-Pacific countries (Sinkkonen & Ruokamo, 2022). This large-scale distribution served as a symbolic instrument to build trust and enhance the strategic presence of Quad members in the region.

Entering 2023, vaccine distribution by Quad was practically stopped. There are no more official statements from member countries regarding the continuation of vaccine distribution, and the program is also no longer mentioned at the Quad Summit in Hiroshima. This shows that the Quad Vaccine Partnership has been completed according to the initial target of vaccine distribution until the end of 2022 (The White House, 2023). There are several factors that led to the end of this initiative; the first is that the vaccine distribution target has been substantially achieved. Second, global demand for COVID-19 vaccines began to decline due to increased local production capacity in various countries and a decrease in the severity of the pandemic (World Health Organization, 2023), third, Quad began to shift policy focus to other strategic issues, such as infrastructure, climate change, new technologies under development, cyber, space, and maritime domain awareness (Staf FORUM, 2023)

The Quad Vaccine Partnership policy shows that this initiative has not only successfully contributed to the COVID-19 pandemic response but has also become an important tool in the strategy of expanding the geopolitical influence of the United States and its allies in the Indo-Pacific region. Although the initial target of distributing 1 billion doses was not achieved, the achievement of 265 million doses by the end of 2022 (Gaens & Sinkkonen, 2023) still marks the success of this program. Vaccine assistance is used as a foreign policy instrument to form strategic trust and mutually beneficial dependency networks between Quad countries and recipient countries. In theory, this achievement is in line with Van Bergeijk and Moons' view of economic diplomacy as a state's effort to use economic instruments to create foreign political influence, strengthen bargaining positions, and build strategic but cooperative dependency relationships (Killian, 2012)

The existence of the Quad Vaccine Partnership also reflects how the soft balancing approach is articulated in a non-military context. Vaccines are not only medical aids but also symbolic tools to affirm political loyalty and diplomatic closeness with recipient countries. Vaccines here help to contain China's influence by creating alternative vaccine supplies and strengthening the capacity of regional countries (Miller, 2023). Thus, the Quad Vaccine Partnership not only responds to the global health crisis but also becomes a strategic instrument of the United States in the Joe Biden era.

2. Quad Infrastructure Coordination Group

The Quad Infrastructure Coordination Group (QICG) is positioned as part of the broader effort by Quad nations to promote regional infrastructure initiatives across the Indo-Pacific. Referring to Stephen D. Krasner's international regime theory, a regime is a set of norms, principles, and procedures agreed upon by countries to create order and reduce uncertainty in specific issues

(Prayuda et al., 2019). QICG seeks to advance cooperative infrastructure development. During the 2021 Quad Summit in Washington D.C., The US launched the QICG as part of growing regional demands, aiming to provide an alternative pathway to existing large-scale initiatives, such as China's BRI (Ministry of Foreign Affairs of Japan, 2021) as part of a joint commitment to create a different development alternative to BRI approach initiated by China. QICG is focused on addressing the massive infrastructure needs in the Indo-Pacific by deepening collaboration and taking complementary actions. The initiative is also a cooperation platform that enables policy and investment alignment among Quad members in support of priority development projects in Southeast Asia, South Asia, and the South Pacific.

In its first year of establishment, Quad was still at the conceptualization and working structure stage. Member countries agreed that the QICG would be a cross-agency coordinative forum to identify critical infrastructure projects, encourage private sector involvement, and ensure fair and transparent financing (The Quad, 2021)

Entering 2022, the QICG entered a phase of operational strengthening. At the Quad Summit in Tokyo on 24 May 2022, Quad leaders affirmed the commitment to mobilize more than USD 50 billion in the next five years for infrastructure projects in the Indo-Pacific region (Gaens & Sinkkonen, 2023). Complementing efforts to strengthen financing, the Quad also announced a project focus that includes:

- a. Sustainable transportation infrastructure, such as cross-regional road development and port logistics networks.
- b. Digital connectivity, including undersea cabling and data center development in Indo-Pacific countries.
- c. Clean energy and climate infrastructure, particularly in vulnerable regions such as the Maldives and Fiji.
- d. Disaster resilience infrastructure, such as tsunami early warning systems and strengthening ports in disaster-prone areas. (Hillman, 2021)

In 2023, the QICG made significant progress toward its goal of promoting high-quality infrastructure development across the Indo-Pacific. One of its key achievements was the launch of the Quad Partnership for Cable Connectivity and Resilience, which focuses on building and strengthening submarine cable networks; overall, since the previous Quad Summit, Quad countries have allocated more than \$140 million for submarine cable development in the Pacific. The target is for all Pacific island countries to have significant cable connections by the end of 2025 (U.S MISSION VIETNAM, 2024). In parallel, the QICG has prioritized human capital development through the Quad Infrastructure Fellowships Program, which has provided training and professional exchange opportunities to more than 1,800 infrastructure professionals, equipping them to plan, construct, and manage resilient infrastructure in their home countries (Neal, 2024). From 2024 to 2025, port and digital infrastructure development will continue to accelerate through future port partnerships and significant investments in submarine cables, including capacity

training programs in Pacific countries. The Quad Infrastructure Fellowship program also continues to grow with an increasing number of experts involved in quality infrastructure project management.

In the context of Rashid's theory of economic diplomacy, which includes policies related to production, exchange of goods, services, labor, and investment across countries (Killian, 2012), QICG can be seen as a strategic instrument for Quad countries to enhance their economic presence in the Indo-Pacific. Through the construction of infrastructure such as roads, ports, and undersea cables, the QICG supports the smooth exchange of goods and services. Fellowship and professional training programs strengthen the capacity of the local workforce while support for industrial parks and clean energy boosts production.

As such, the QICG serves not only as a development forum but also as a means of establishing a regional regime in the Indo-Pacific that reflects the Quad's vision of an open, transparent, and democratic value-based regional order. The establishment of the QICG mechanism shows that the Quad is seeking to create an established system of cooperation where international norms on sustainable development, accountability, and local empowerment serve as collective guidelines. This initiative positions the Quad not only as a geopolitical alliance but also as an institutional architect in the establishment of regional rules of the game, which is expected to reduce the dominance of China's closed development approach and strengthen the role of value-based institutions.

3. Critical and Emerging Technologies

The Quad countries have prioritized collaboration on emerging technologies as part of their strategic engagement. In their 2021 summit, they emphasized joint strategic involvement in critical areas such as AI, 5G, and semiconductor supply chains, viewing them as foundational to regional security and stability in the Indo-Pacific (The Near East South Asia Center, 2024). In 2022, this cooperation underwent a more structured institutionalization with the establishment of the Critical and Emerging Technology Working Group at the Quad Summit in Tokyo. The working group is mandated to strengthen collaboration in semiconductors, AI, quantum computing, cybersecurity, and Open RAN-based communication systems. The initiative aims to not only enhance the innovation capacity of each member country but also create an alternative technology ecosystem free from Chinese domination. In addition, the Quad has begun to explore joint technical training and collective research support for quantum technology and AI as concrete steps to strengthen the region's technological edge (Wong, 2024)

There was also the launch of the Quad Investors Network (QUIN). The initiative is designed to expedite private sector investment in key technology and infrastructure sectors, thereby fostering inclusive and sustainable development within the Indo-Pacific region by 2023. QUIN supports 10 strategic investments in the critical minerals, renewable energy, cybersecurity, and aerospace sectors, and initiates the establishment of a startup campus in Tokyo with Chiba Institute of Technology, develops a venture accelerator in collaboration with the University of Tokyo and Northeastern University (U.S MISSION VIETNAM, 2024)

This move comes in the context of global tensions in the technology sector, particularly in the wake of the COVID-19 pandemic and the US-China trade war, which highlighted the world's critical dependence on China for the supply of semiconductors and critical raw materials such as rare earth minerals. In response, Quad seeks to establish a more resilient and diverse alternative supply network, including through investment in chip production in India and the development of regional technology centers in Japan and Australia. In addition, this cooperation aims to avoid the concentration of production in a single country while promoting the principle of democratic value-based governance in technology development, which is in line with the principle of soft balancing.

From an economic diplomacy perspective, the Quad strategy is a form of using technological instruments to indirectly expand geopolitical influence. Quad countries not only encourage domestic technological capacity building but also seek to instill international standards in line with collective strategic interests, such as market openness, cybersecurity, and intellectual property rights. Quad collaboration on projects such as Open RAN (Open Radio Access Network) symbolizes efforts to break the dominance of Chinese 5G suppliers and create a more competitive and open digital ecosystem (Bachhawat et al., 2020)

In the Quad's 2022 joint statement, it was emphasized that strengthening the semiconductor supply chain is a collective priority to ensure the continuity of critical technology production. One of the tangible achievements of this cooperation is the launch of the Quad Supply Chain Resilience Mapping Exercise, which aims to identify weak points in the global logistics system and prepare a joint mitigation plan (Australian Government Department of the Prime Minister and Cabinet, 2024). In addition, the Quad encourages partner countries in the Indo-Pacific region to adopt the same principles through technical cooperation and capacity-building assistance.

However, the effectiveness of this policy still faces significant challenges, such as differences in the level of technology industry readiness among member countries, geopolitical risks accompanying supply chain decentralization, and intensive competition from China's aggressive approach through initiatives such as Made in China 2025. Therefore, the success of this strategy largely depends on the Quad's ability to align its respective national technology visions, secure long-term funding, and maintain synergies between economic security and innovative growth.

However, the effectiveness of the Quad's strategic ambitions cannot be assessed in isolation. These initiatives have not gone unnoticed by China, which perceives the Quad as a direct challenge to its regional influence and normative leadership. Rather than remaining passive, China has actively developed a comprehensive counter-strategy aimed at offsetting the diplomatic and economic reach of the Quad. This response has included the projection of alternative development narratives, deeper economic integration through regional trade frameworks, and the construction of autonomous technology and supply chain infrastructures. Based on a thematic synthesis of (Wuthnow & Ji, 2023), the following table outlines the core dimensions of China's strategic response to the Quad and the Biden administration's Indo-Pacific Strategy.

Table 1. Strategic Dimensions of China's Response to the Quad and the Biden Administration's Indo-Pacific Strategy (synthesized from (Wuthnow & Ji, 2023))

No.	Strategy	Description	Primary Objective
1.	Promoting Alternative Narratives: BRI and Regional Diplomacy	Expands BRI, RCEP, and CPTPP while advancing the "Community of Common Destiny" to counter Quad's democratic framing	To offer a non-Western, development-first model
2.	Economic Countermeasures	In response to U.S.-led economic "bloc building," China advances independent tech ecosystems, alternative standards, and de-Americanized supply chains	To protect China's economic and technological autonomy
3.	Exploiting Coalition Gaps in the Quad	Identifies divisions among Quad members and refers to US initiatives as "empty shells."	To prevent complete consensus against China

Ideally, the Quad's strategic initiatives, such as the Quad Infrastructure Coordination Group (QICG), critical technology cooperation, and economic diplomacy, are designed to shape an Indo-Pacific order that is open, transparent, and grounded in democratic values. The core objective is to provide a more inclusive and sustainable development alternative for emerging countries in the region while counterbalancing China's growing dominance through programs like the Belt and Road Initiative (BRI) and Made in China 2025. However, the implementation of these initiatives still faces significant structural challenges. A key obstacle is the Quad's loosely structured and non-binding cooperative framework, which depends heavily on political consensus and voluntary commitments from each member state factors that often slow down decision-making and project execution. Additionally, China's centralized, aggressive, and fast-paced approach to aid delivery remains more attractive to many recipient countries, making the Quad's alternatives less appealing and Externally, many ASEAN countries uphold a policy of non-alignment and are wary of being drawn into great power competition (Wuthnow & Ji, 2023). The perception of the Quad as a containment strategy against China has led these countries to respond cautiously, aiming to avoid entanglement in escalating geopolitical tensions. Further challenges include limited funding and the absence of long-term commitments, which have hindered the effectiveness and realization of many of the Quad's programs. As noted in CNAS's Operationalizing the Quad report, the lack of a joint funding mechanism or a permanent implementation body has been a significant factor in undermining the alliance's operational capacity (Curtis et al., 2022).

Nevertheless, the Quad still holds considerable strategic potential not only as a security-oriented alliance but also as a regional actor capable of shaping a fairer and more resilient Indo-Pacific governance structure. To achieve this vision, the Quad must strengthen its institutional capacity

through more effective, responsive, and sustainable governance mechanisms while avoiding hegemonic tendencies often associated with authoritarian models. One critical step toward this goal is to pursue stronger institutionalization, such as establishing a permanent and structured coordination mechanism like a standing secretariat that can integrate various sectors and ministries from the member states. By aligning innovative growth strategies with regional economic interests and ensuring coherence between national visions and long-term funding commitments, the Quad can become a reliable and trusted strategic partner for Indo-Pacific countries. Ultimately, the alliance's success will hinge on its ability to leverage economic instruments as tools of diplomacy to uphold regional stability and build a peaceful balance of power.

CONCLUSION

The Quadrilateral Security Dialogue (Quad) alliance has seen significant strengthening under the administration of President Joe Biden. The alliance not only focuses on security cooperation but also extends to the economic, infrastructure, technology, and health sectors. Through programs such as vaccine distribution, high-standard infrastructure development, and cutting-edge technology cooperation, the United States demonstrates its active role in offering development alternatives for Indo-Pacific countries. This approach shows that America is not only present as a great power but also as a regional development partner.

Strengthening cooperation through regular meetings of leaders and ministers from Quad member countries reflects the high political commitment to the stability and prosperity of the region. On the other hand, Quad is also faced with external and internal challenges. China responds to the strengthening of Quad by expanding its strategic influence, while within the alliance itself, there are still challenges in the form of differences in national interests, lack of established institutional structures, and the need for more organized collective financing. This suggests that the success of Quad depends not only on the intensity of cooperation but also on the ability to align priorities and build long-term trust.

Through the analysis of the United States' strategy in Quad during Joe Biden's administration, economic cooperation has become an important element in shaping a more stable and open regional balance. Although not yet fully optimized, the United States' active role in Quad has given a strong signal to Indo-Pacific countries that there are alternatives to cooperation that are not based on single dependency. Going forward, the sustainability of the Quad initiative is primarily determined by political consistency, coordination among members, and adaptive response to the changing regional dynamics.

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