PRZEGLĄD ZACHODNI
2026, nr 2
doi.org/10.60972/PZ.2026.2.105

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Supply Chain Diversification and Resilience Policies in the European Union and Taiwan under Global Economic Pressures

Introduction

Under current economic globalization trends, pressures are mounting against liberal trade rules, driven by alternative paradigms, especially in developing nations. The established global economic order is transitioning towards protectionism, fostering polarization and instability. Economic security, defined as mitigating undesirable dependencies, is increasingly prioritized. The flow of production factors perceived as threats to economic stability, or usable for political and economic coercion, is becoming disfavored. Trade barriers negatively impact access to goods and services, hindering economic development. Consequently, states pursue policies aimed at mitigating external dependencies, considered vulnerabilities, which poses challenges due to production fragmentation. Managing economic interdependencies susceptible to crises is essential.

The European Union (EU), a significant global economic hub, faces numerous economic interdependencies that present potential economic challenges in the near future, spanning raw material availability (including energy resources), advanced manufacturing, and defense industries. US and China are significant economic partners for the EU. This results in significant dependencies on these two economies. On the one hand, EU economies producing advanced products rely on numerous raw materials and semi-finished products that constitute production capacity in industries that have traditionally been a source of Europe's competitive advantage, such as the automotive and chemical sectors. Trade conditions between China and the EU, as well as between the US and the EU, are deteriorating, given the protectionist instruments employed

by both entities, as evidenced by tariffs and restrictions on the export of rare earth elements. Therefore, the EU is making efforts to diversify and strengthen its economic resilience.

The EU is not alone in confronting the challenges of economic dependency. Taiwan provides another relevant case study, possessing considerable experience in managing its own economic dependencies. Geographically situated near mainland China, Taiwan's economy is significantly reliant on the People's Republic of China (PRC), which remains its largest trading partner. Although China's share of Taiwan's total trade is decreasing, it remains substantial at 31.7% (Taipei Times 2025). Taiwan's economic dependence on mainland China is multifaceted, facilitated by their geographic and cultural proximity. Taiwan is implementing diversification policies primarily to reduce its dependence on mainland China in the face of the threat of economic coercion, which may intensify amid rising geopolitical tensions. The pressure of US-China trade and technological rivalry is also a factor. Taiwan's aim is to increase supply chain resilience, mitigate the risk of economic coercion, and respond to global trends toward strategic autonomy, which encourage a reduction in dependence on China.

Materials & methods

The purpose of this article is to identify the practices and policies of the EU and Taiwan in regard to the resilience and diversification of the supply chain. Equally important is the comparison and analysis of the resilience strategies of the EU and Taiwan supply chain in the context of current economic challenges and global tensions. There are many studies on supply chain resilience and diversification from a managerial perspective related to the functioning of supply chains at the level of economic entities that engage in international business relationships. However, we still do not know which policy solutions work and which do not and how the context determines the actions taken. The article focuses on the following three hypotheses: Both the EU and Taiwan recognize resilience and diversification policies as instruments to reduce systemic vulnerabilities and limit the scope of economic coercion (H1). The regulatory and investment approach of the EU creates conditions for a gradual reduction in dependences in strategic sectors (H2). The Taiwanese model of combining the maintenance of a technological core on the island with the creation of external allied production buffers does not reduce competitive advantage but improves economic resilience (H3).

This study treats supply chain resilience and diversification policies as programs that involve the use of specific resources (engagements), which are associated with specific activities (actions), and which generate specific outcomes (outcomes). This study of supply chain resilience and diversification policies in Taiwan and the European Union uses a program-based approach, treating the analyzed policy as a set of interconnected hypotheses and mechanisms (Munter et. al. 2016: 7-26). The article focuses not only on simply verifying whether the policy goals have been achieved; the study encompasses the implementation and resources used to achieve the policy goals. The methodology comprises three key elements (Weiss 1997:41-56): (1) Resource utilization, the identification and analysis of resources (including financial, institutional, and technological) that states and private entities allocate to strengthen supply chain resilience. Political commitments and the regulatory framework that facilitates the implementation of diversification strategies are taken into account. (2) Actions taken – specific initiatives, such as the creation of alternative supply channels, the implementation of contingency mechanisms, the building of strategic stocks and the development of international partnerships, were examined. The implementation process was examined, from the level of political decisions to the operational activities of the organization. (3) Mechanisms driving change: the cause-and-effect logic of the diversification strategy was assessed, i.e., how the resources and actions employed were intended to increase the economy's resilience to disruptions. Mechanisms were identified, such as reducing dependence on a single supplier, shortening crisis response times, and improving production flexibility in response to the changing geopolitical environment. In line with the logic of program theory, the assessment focused not only on outcomes but also on the implementation process and the interactions between resources, actions, and the contexts in which the diversification and resilience policy operates.

The comparative method was used for the study to identify patterns, causal mechanisms, or their absence (Peters, Fontaine 2020: 21-38). Primarily, the comparative approach allows for a comparison of institutional resources, instruments employed, actions taken, or mechanisms that trigger change, and allows for a comparison of the results of the actions taken (or their absence). The most different systems approach was considered, because the solutions implemented are applicable to distinct geopolitical and economic conditions, taking into account differences in the structure of economies and supply networks. This aims to capture the diversity of diversification and resilience policy options from a public policy perspective as broadly as possible. The EU and Taiwan are very different systems in terms of economic size and resources, po-

litical system, geographic location, and even the structure of supply chains depending on specific markets. The goal of this approach is to eliminate as many confounding variables as possible. Despite these differences, both the EU and Taiwan pursue supply chain diversification and resilience policies. Therefore, comparing policies and their effects across these different systems will identify not only patterns but also similarities and differences.

Resilience and diversification in the theoretical dimension

This study examines the actions taken by a state and a group of EU countries to strengthen and diversify their supply chains. One of the more comprehensive approaches, by Ponomanov and Holcomb (2009) suggests that supply chain resilience should be understood as adaptive capacity, preparing for unexpected events, responding to disruptions, and recovering from them. Another element of resilience is maintaining appropriate business continuity at the desired level and control over the structure and function of supply chains. The European approach focuses mainly on ensuring supply continuity and coping with disruptions caused by exogenous shocks (such as the COVID-19) or deliberate actions, such as geopolitical tensions. Resilience policy requires the resources, skills and knowledge needed by decision-makers to effectively respond to shocks and crises (Pisani-Ferry 2024). A review of defining resilience indicates that the most common focus is on adaptive capacity, ability for action, and response (Sheffi 2009, Ponomarov 2015). Tukamuhabwa, Stevenson, Busby, Zorzini (2025) present an approach that integrates cost-effectiveness of recovery, a key element for practice that is often omitted from formal definitions. Resilience is measured through capabilities such as flexibility, speed, visibility, and collaboration (Liu, Tai 2020).

Supply chain resilience differs at managerial (micro) and policy (macro) levels. The micro level focuses on company survival and competitive advantage, while the macro level prioritizes economic/social stability and key goods delivery, exceeding company profit/loss (Helper et al. 2021). Macro-level goals are broader, qualitative, and encompass more stakeholders, with decision-making focused on legal frameworks and budgets. A systems perspective views supply chains as complex adaptive systems, where resilience emerges from entity interactions. Macro-level focus is on public interest/security, critical infrastructure, and crisis management. Analysis shifts from individual companies to supply chain networks. Micro-level resilience is key for supply chains, while macro-level resilience is the ability to withstand disruptions without functional

changes. Diversification, a resilience strategy, builds micro-level alternatives like expanded sourcing/logistics (Jacobs, Gheyle, Orbie 2023), including derisking, friendshoring. Macro-level policy expands the supplier base to reduce dependence (Nicolas 2025). While diversification enhances resilience, it can reduce efficiency (Ahn, Tan 2025).

Resource utilization in resilience and diversification policies in the EU and Taiwan

Taiwan and the EU use diverse resources to achieve supply chain resilience, aiming to maintain stable economic performance and shape global value chains. Legal and financial frameworks are key. The EU, as a regulatory institution, has implemented a number of legislative acts that support resilience in key economic sectors. For example, the Critical Raw Materials Act (CRMA) aims to increase extraction (10%), processing (40%), and recycling (25%) of strategic raw materials within the EU by 2030 to reduce import dependence. The European Commission (EC) has identified 47 strategic projects with accelerated permitting procedures (27 months for extraction; 15 months for processing/recycling). The EC and Member States are focusing on mobilizing private funds and utilizing and directing existing the EU financial instruments. National funds, such as state aid, also play a significant role. It is estimated that private funds related to the implementation of the CRMA alone could reach approximately €22.5 billion. Another resource planned for use is the European Chips Act (ECA). These regulations are intended to strengthen the EU's competitiveness in the semiconductor sector, and the Net-Zero Industry. The Act supports the development of technologies for ecological transformation. By the end of 2025, the European Commission has already approved seven state aid decisions concerning first-of-its-kind semiconductor production plants in the EU. These initiatives represent public and private investments worth over €31.5 billion (Regulation 2023) . The EU promotes joint projects between member states in sectors such as batteries, microelectronics, and hydrogen, also enabling the granting of state aid. An example are industrial alliances that integrate industry, states, and research institutions, including in the areas of semiconductors and cloud technologies (European Commission 2023a).

The European Competitiveness Fund supports strategic industrial projects crucial for EU competitiveness and economic security (European Commission 2025a). Its goals include revitalizing industry, promoting clean tech and

"made in Europe" products, and strengthening the circular economy. The fund identifies supply chain weaknesses, supports raw material reserves, and incentivizes production relocation in sectors like renewables and semiconductors. Advanced technologies aim to increase efficiency and reduce the carbon footprint. The fund fosters industrial partnerships and trade agreements for market access and diversified supply (Council of the European Union 2025b), supporting the relocation and expansion of EU production, enhancing resilience and open strategic autonomy. The planned budget is €234.3 billion (European Commission 2025b).

Given Taiwan's advanced technological economy, particularly its prominence in semiconductor manufacturing, governmental policies and resource allocation are primarily directed toward sustaining a competitive technological advantage on a global scale. To achieve this, the authorities leverage available resources to support the national ecosystem. The semiconductor industry is a key pillar of Taiwan's economic growth and one of the most important sectors in terms of production value, export share, and investment volume. Maintaining momentum in this sector and the entire semiconductor production ecosystem makes it necessary to have tools to encourage companies to develop their activities in this area. Therefore, companies can deduct 25% of research and development costs in areas deemed "forward-looking", such as technologies below 3 nm, advanced packaging, and silicon photonics. Additionally, a 5% deduction is provided for investments in advanced machinery and production infrastructure (Ministry of Economic Affairs 2023). Importantly, the regulations do not impose a fixed ceiling, providing significant flexibility to the largest players, such as TSMC and UMC. Eligibility for the tax relief requires meeting R&D expenditure thresholds and adherence to strategic priorities set by the Ministry of Economic Affairs (MOEA). This instrument is scheduled to expire in 2029. Between 2018 and 2023 alone, the government allocated $211 million in support for domestic semiconductor R&D companies (Ministry of Foreign Affairs 2023).

In addition to legal measures, Taiwan is implementing initiatives to encourage foreign investment in the country, supported by the 'Three Major Programs for Investing in Taiwan 2.0' (2019-2027). The goal is to attract capital and reintegrate the country's supply chains. One of the features of the program is the relocation of production to Taiwan. The program was launched in 2019 and achieved impressive results in its first phase (until 2023): over 1,600 companies have committed to investments exceeding US$68 billion, generating over 160,000 jobs. The second phase, running until 2027, assumes additional investments of US$41.6 billion and the creation of another 80 000 jobs (Executive

Yuan 2025a). The program includes not only tax breaks but also preferential loans, support for access to land, energy, and human resources. It is a tool designed to counteract the risk of excessive concentration of production outside Taiwan while strengthening local value chains. The budget for 2025-2027 is US$24.5 billion (Executive Yuan 2025b). In August 2024, Taiwan's Five Trusted Industry Development Plan was approved, identifying semiconductors, artificial intelligence (AI), military, security and surveillance, and next-generation communications as strategic priorities for global development. By leveraging the semiconductor and AI industries, Taiwan aims to solidify its role as a key player in the global supply chain in these areas.

Beyond fiscal stimulus, Taiwan invests in research infrastructure and technology development (Ministry of Economic Affairs 2025a). The Ministry of Economic Affairs (MOEA) and Industrial Technology Research Institute (ITRI) have allocated approximately $1.3 billion over five years to projects in advanced packaging, silicon photonics, AI-on-chip, and compound semiconductors, establishing research consortia and pilot lines. These investments maintain innovation and shorten implementation cycles. These efforts promote a global industrial supply chain alliance and AI chip development through international collaboration. The strategy leverages global opportunities with domestic supply chains and supports companies' global expansion. Additionally, $370 billion supports digital transformation and net-zero goals for SMEs (Ministry of Economic Affairs 2025b).

When analyzing both entities, the EU and Taiwan, it is important to note that the EU relies heavily on regulatory instruments in many areas, ranging from semiconductors, raw materials, and crisis governance to the implementation of projects typically focused on external markets. Given the enormity of the challenges and the diversity within Europe, the level of funding for resilience initiatives is significant. This is because a large portion of the resources mobilized remain at the national level and in the private sector. The EU economy is more diversified than Taiwan's, resulting in greater resource dispersion. Taiwan primarily offers tax incentives and targeted investment programs, which can count on support from its own industrial base. Institutional resources such as ministries and national laboratories have also been made available. In the EU, institutional resources are also subject to resilience policies, but their utilization is determined by the national economic policies of individual countries related to their economic potential. Therefore, at the European level, EU countries with a higher level of economic development participate more in diversification strategies due to the greater economic potential of these companies.

Between Aspirations and Results: A Diverse Range of Actions

The EU is undertaking numerous initiatives aimed at increasing resilience and supply chains. First, the EU aims to reduce dependence on third countries in strategic sectors such as advanced technologies, critical raw materials, health (e.g. active pharmaceutical ingredients), and energy. The goal is to be able to act autonomously without being dependent on other countries in sectors that are crucial for current development. Secondly, it is an attempt to increase the resilience of supply chains, which, while cost-optimized, have proven highly vulnerable to disruptions, especially in the political and, consequently, economic spheres (European Commission 2023b). Drawing lessons from the pandemic, this aims to ensure security of supply, especially in areas considered most vulnerable. Third, it is a strengthening of the EU's industrial base and competitiveness. This primarily concerns the revitalization of the industrial base in selected areas to maintain global competitiveness and economic security. This also includes supporting innovation, production capacity, and the creation of high-quality jobs, especially in emerging industries (Council of the European Union 2025a).

The COVID-19 pandemic highlighted microprocessor supply chain fragility, prompting efforts to secure chip supply for European automotive production. Localization of integrated circuit production in the EU is underway through cooperation with TSMC, involving a factory in Dresden, Germany, via the ESMC project (Germany Trade & Invest 2024; European Commission, 2024). This "open foundry" will serve diverse customers, with production slated to begin in 2027 and reach 40,000 chips/month by 2029. Total investment exceeds €10 billion, including significant German government support (€5 billion) potentially creating 2,000 jobs (European Commission 2024b). This reduces the automotive industry's reliance on Asian suppliers (primarily Korea and China) and builds a local semiconductor ecosystem.

One way to increase semiconductor production capacity in the EU is to invest in the skills necessary for their production. The Chips for Europe program addresses semiconductor production capacity by aligning EU research and innovation with industrial exploitation, shortening design-to-prototype time and reducing entry barriers. A cloud-based design platform lowers infrastructure costs. The European Investment Bank and the InvestEU program provide financing for semiconductor companies (European Commission 2024c). Securing raw materials is also crucial, with the Critical Raw Materials Act (CRMA) simplifying procedures and coordinating strategic stocks (European Commission 2025b). The EU prioritizes CRM recovery from used prod-

ucts to support a circular economy, using design and substitutes to rationalize CRM use (European Parliament 2024). A list of 13 strategic projects outside the EU addresses battery, electromobility, and rare earth element supply chains (European Commission 2025b).

The EU develops raw material partnerships and integrates friendly countries into European supply chains, mitigating risks through trade and diplomacy. Projects shift supply sources away from dominant countries (e.g. China, Democratic Republic of Congo, Indonesia) to jurisdictions with more stable institutions. To strengthen resilience, a risk monitoring system and crisis response tools are in place, including supply chain monitoring, systemic risk analyses for critical raw materials, and foresight projects. EU activities under the Global Gateway initiative (€300 billion) diversify supply chains by building energy, transport, and digital infrastructure in partner countries, creating alternative logistics corridors and raw material sources.

Taiwan's primary goal in maintaining economic resilience is to uphold its leadership position in the production of advanced chips (e.g. 3-2 nm), hence the focus on increasing the scale and excellence in this type of production. These efforts include promoting a global alliance for the industrial supply chain of AI chips and creating conditions for the development of semiconductors through international cooperation. This is supported by the demand for AI, which is based on high-performance networking devices such as servers and data centers. Therefore, efforts aimed at minimizing the size of 2 nm semiconductor technology are not surprising. Chip production is intended to help maintain the advantage not only of leading manufacturers such as TSMC but also of supporting the entire sector, including local companies, packaging suppliers, and chip testing companies. Local integrated circuit manufacturers are estimated to grow by 16.1% compared to previous estimates (Taipei Times 2022).

Maintaining leadership amid widespread diversification efforts is challenging. Growing Taiwan Strait tensions drive Western partners to seek geographic diversification (friendshoring), exemplified by planned TSMC plants in Germany, the USA, and Japan. TSMC receives generous public support in all locations. In the USA, total investment is $65 billion, with $6.6 billion in grants and $5 billion in subsidized loans (Shepardson et al. 2025; Taiwan Semiconductor Manufacturing Company 2024, 2025; Blanchard 2024; Staples 2025). Germany allocates $5.5 billion in aid for a $10 billion project. Japan provides approximately $8 billion in subsidies for ~$20 billion investment (Ministry of Economy, Trade and Industry 2024; Taiwan Semiconductor Manufacturing Company 2024; Staples 2025). These investments strengthen semiconductor

supply chain resilience, reduce pressure on Taiwan's resources, and alleviate trading partners' concerns. Importantly, these investments don't involve the most advanced semiconductors, which remain exclusive to Taiwan.

Taiwanese authorities are diversifying supply chains, particularly reducing mainland China's participation. For example, the Taiwan Excellence Drone International Business Opportunities Alliance (TEDIBOA) integrates 190 domestic companies in the drone production supply chain to increase security and independence. Developing AI technologies requires resilient energy and resource supplies. Measures include increasing renewable energy production, such as geothermal, building new infrastructure, and decentralizing the power grid to address energy supply imbalances. Energy diversification also involves offshore wind farm investments to compensate for nuclear power phaseout. Efforts stabilize water supplies by increasing sources, reducing consumption, and managing reserves. These steps ensure resource availability for domestic consumption and industrial development, contributing to social and economic stability (Ministry of Economic Affairs 2025b).

Because Taiwan's economy relies heavily on exports, it takes steps to maintain and develop markets for its export products. In this regard, it collaborates with partners to strengthen international and regional ties. This includes participation in multilateral trade agreements and regional economic integration, including efforts to join the CPTPP. The government actively cooperates with WTO and APEC members, strengthening alliances with key countries such as the US, EU countries, and Japan, and promoting international principles and initiatives that benefit Taiwanese industry (Ministry of Economic Affairs 2025c).

From Resources to Resilience: The Policy Logic of Supply Chain Diversification and Resilience in Taiwan and the EU

Research results (Wietschel et al. 2025: 1-17) on the resilience of raw material supply chains indicate that the risk monitoring system and crisis response tools strengthen the key resilience components, i.e. the ability to identify threats early and adapt to the crisis. The EU has taken steps to reduce the risk of geographic concentration. Geographical diversification of supplies and building relationships with like-minded countries lowers the risk of supply disruptions resulting from trade wars, sanctions, and potential kinetic conflicts (Kwiecińs-ki et al. 2025). In turn, shortening and densifying supply chains within the EU reduces dependence on single bottlenecks, such as Chinese lithium and graph-

ite refining plants, which are currently critical points in global supply chains. In its search for alternatives, the EU also focuses on the recycling of critical raw materials and promotes substitutes and material innovations.

The EU's strategic autonomy policies haven't yet statistically reduced dependency, but are creating regulatory frameworks for diversification and localization. Key projects (47+13) align with objectives (10/40/25 and 65%)[1], but are in early implementation stage. Similarly, regulations for critical raw materials are nascent, while strategic projects are more advanced. Enhanced resilience is expected as projects and regulations address production chain vulnerabilities. Evidence suggests that diversified exports, domestic mining, increased recycling/substitutes and robust crisis management will reduce vulnerability (Wietschel et al. 2025).

EU initiatives are yielding concrete actions in critical raw materials. Legislative measures led to a July 2024 agreement between the EU and EBRD under InvestEU to support CRM and SRM exploration, leveraging an estimated €100 million. The EU contributes €25 million from Horizon Europe, the EBRD provides €25 million, and the joint instrument aims to leverage an additional €50 million. France (€2 billion), Germany (€1 billion), and Italy (€1 billion) have also established national funds to boost their CRM resources, surpassing European support (European Parliament 2024). The EU is implementing a comprehensive strategy encompassing European production capacity development, raw material security, crisis management and supply source diversification. These interconnected actions form a coherent resilience architecture to reduce vulnerability to geopolitical and economic shocks.

The cause-and-effect relationship regarding shortening the response to disruptions, the EU introduced the Internal Market Emergency and Resilience Act (IMERA) as a response to the experience of the COVID-19 pandemic and the post-2022 energy crisis. The aim of this act is to create a legal framework that will allow for rapid and coordinated action in the event of serious disruptions to the functioning of the internal market (Regulation 2024). IMERA assumes three modes: (1) Vigilance: monitoring risks in supply chains, data on goods flows, creating strategic stocks in critical sectors. The EC can request reports on stocks and production capacities. (2) Emergency: coordination of

[1] The regulations require the EU to domestically extract 10% of its critical raw material needs, establish processing capacity for 40% of these needs, and implement recycling systems capable of recovering 25% of the necessary materials by 2030. The 65% threshold represents the maximum allowable level of dependence on a single third country for the supply of critical materials.

joint procurement, rapid approval of standards and procedures, blacklisting of practices that violate the internal market. Eliminates the regulatory chaos. (3) Central coordination: in the event of threats to the supply of crisis goods, the EC coordinates equal access to resources across the EU, reducing response times from weeks to days and eliminating conflicting national actions.

Taiwan's change mechanisms involve diversifying geopolitical risk and maintaining competitiveness, shifting from a just-in-time to a just-in-case delivery model (Liu et al. 2024). Deconcentrating semiconductor production in allied countries (USA, Germany, Japan) enhances supply security while retaining advanced technologies in Taiwan. In materials, redundancy is strengthened through investments and partnerships in silicon wafers (e.g. Global Wafers), relocating parts of the chain off-island (Global Wafers 2025). This reduces dependence on a single location, preventing disruptions in one area from impacting the entire semiconductor supply chain.

At the same time, Taiwan's economy, especially its modern semiconductor manufacturing sector, requires significant amounts of energy and raw materials. In this context, the causal logic to reduce dependence on a single supplier is more complex. Because Taiwan imports 97% of its energy needs, it is vulnerable to external disruptions. Chip production consumes approximately 8.3% of Taiwan's total energy. In this regard, Taiwan is increasing the share of renewable energy sources in its energy mix, diversifying its energy suppliers (e.g. Qatar, Australia, and the USA), and increasing its strategic reserves of LNG, coal and crude oil. TSMC's factories have priority access to energy (Byman 2024).

Semiconductor production vulnerability lies in critical materials like silicon wafers, specialty gasses and high-quality chemicals. Taiwanese companies aim for at least two qualified suppliers. While Japan was a key wafer supplier, the Netherlands, Germany, and South Korea are now also important. China's share in simpler chemicals is high, but Taipei remains cautious. Taiwan incentivizes local production of key materials, attracting investment from Japan and Korea with R&D grants, tax breaks, and TSMC collaboration. Strategic stockpiles are built for strategic raw materials, sometimes mandated to cover several months of demand. Efforts reduce reliance on mainland China, favoring partners like Japan, Korea, the USA, EU, and Southeast Asia (China Plus One) (Shih 2025).

Reducing disruption response time is a key element of Taipei's policies. This is practiced by industry, such as maintaining wafer/semi-finished product inventories in semiconductor manufacturing. TSMC is developing alternative packaging technologies and launching parallel plants in other jurisdictions for faster component replacement, ensuring order fulfillment continuity. Creating reserves beyond production resources, like energy and grid monitoring,

also reduces disruption response time. Maintained inventories and production-switching capabilities in the US, Japan or Germany enable Taiwan to minimize production disruptions to weeks instead of months.

Increased analytical capabilities and improved risk management in Taiwan are facilitated by institutions like ITRI and the National Science and Technology Council (NSTC). ITRI fosters innovation, addresses emerging challenges, and enhances resilience in infrastructure, resources, and productivity. It focuses on AI, cybersecurity, semiconductors, communications, and smart sensors. ITRI organizes forums like the Global Semiconductor Supply Chain Partnership Forum and publishes reports for open data collection systems. The NSTC supports seminars and conferences on supply chain resilience, leading to better risk identification and responsiveness (Industrial Technology Research Institute 2025). The Research Institute for Democracy, Society, and Emerging Technology (DSET), established in 2023, organizes strategic forums for key areas of economic sovereignty and formulates guidelines for the government, focusing on semiconductors, AI, and energy security (Research Institute for Democracy, Society, and Emerging Technology 2025). It explores collaborations, like with the US on drone supply chains, contributing to economic security.

Conclusions

The identification of EU and Taiwanese policies and practices regarding supply chain diversification and resilience largely supports the hypotheses formulated above. Both the EU and Taiwan utilize public policy to intervene in supply chains in response to complex threats, but their approaches differ in scale, geographic scope, and target. The EU, as an economic union, implements policies at the macroeconomic level, seeking to balance dependencies and strengthen the integrity of the single market. Its policy is characterized by regional reindustrialization (near-shoring), seeking to increase production capacity on its own continent. Taiwan, on the other hand, with its status as a technologically critical island, focuses on diversifying geopolitical risks through exit strategies (outward FDI, friend-shoring), effectively increasing redundancy and creating new production capacity in allied jurisdictions.

The EU promotes increased production flexibility and substitution capacity by minimizing dependences. This aims to replace imports from risky sources in vulnerable areas. This is supported by the intention of building an industrial base. Taiwan, relying on its dominance in advanced technological processes (ASML, TSMC), focuses on maintaining the unique functionality of its net-

work despite shocks, while its active relocation of less critical production is a form of strategic adaptation. Taiwan's strategy is to secure strategic functionality (the production of advanced chips) while distributing risk (e.g. through friend-shoring) and building the network's adaptive capacity by strengthening relationships with suppliers (e.g. increasing local sourcing of raw materials and chemicals).

Both the EU and Taiwan recognize the need for better information in risk management, but use different approaches. The EU relies on regulatory controls (FDI Screening) and public-private cooperation to monitor supply chains within its 27 countries. Taiwan focuses on controlling technology exports and adapting company operations to geopolitical risks, prioritizing security in economic policy. The EU aims to build an industrial/regulatory "fortress" for autonomy, while Taiwan creates a "security net" among allies. Both strategies aim to expand options and ensure operational readiness. The effectiveness of these policies will be judged by maintaining economic functionality under future shocks and the ability to quickly reconfigure supply chains during crises.

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Słowa kluczowe: łańcuchy dostaw. dywersyfikacja. UE, Tajwan, *derisking, friendshoring*, autonomia strategiczna, teoria programu.

Keywords: supply chain resilience; diversification; EU; Taiwan; derisking; friendshoring; strategic autonomy; Program Theory.

ABSTRACT

This article compares the supply chain diversification and resilience policies of the European Union (EU) and Taiwan in the context of escalating geopolitical competition and frequent disruptions in global value chains, contributing to debates in international political economy on economic security, derisking, and friendshoring. The paper aims to identify resources, actions, and mechanisms that improve systemic resilience and reduce vulnerability to economic coercion. The study employs a programme the-

ory approach, assessing the transition from resources through actions to outcomes, alongside the "most different systems" comparative method, and draws on strategic documents, legislative instruments, and investment initiatives. The findings indicate that the EU is consolidating its regulatory and financial architecture, but its effectiveness depends on the coherence of implementation across member states. Taiwan combines its advantage in advanced semiconductor nodes with geographical diversification and the strengthening of its domestic ecosystem. Crucially, linking between the macro level (policy) and the micro level (firm and sector practices) is essential; the existence of numerous instruments alone is insufficient without transparency and the ability to rapidly reconfigure supply chains.