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Reshoring Supply Chains in EU - US Collaboration after COVID: A Case Study Analysis

COVID Sonrası AB-ABD İşbirliğinde Tedarik Zincirlerinin Geri Getirilmesi: Bir Vaka Analizi

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Abstract

COVID - 19 exposed significant vulnerabilities in global supply chains, prompting both the EU and US to initiate policies aimed at reshoring critical goods production. This paper examines three illustrative case studies - semiconductors, medical supplies, and electric vehicles - to assess the extent and nature of transatlantic collaboration. Recent initiatives such as the EU Chips Act, US CHIPS and Science Act, as well as joint efforts via the Trade and Technology Council (TTC), strategic stockpiling of medical goods, and comparative industrial incentives for battery and EV supply chains are analyzed. The findings reveal that while both blocs aim to enhance strategic autonomy and resilience, coordination varies: strongest in the semiconductor space; nascent in health; and competitive in green technologies. The paper includes policy recommendations to deepen EU - US industrial cooperation, including shared standards, coordinated procurement, and technology transfer frameworks.

Keywords: *Reshoring, Supply Chain Resilience, Transatlantic Cooperation, Semiconductors, Electric Vehicles.*

Jel Codes: *F13, L52, O25, Q55.*

Öz

COVID-19, küresel tedarik zincirlerindeki önemli kırılganlıkları ortaya çıkarmış ve hem AB'nin hem de ABD'nin kritik malların üretimini geri çekmeye (reshoring) yönelik politikalar geliştirmesine yol açmıştır. Bu çalışma, yarı iletkenler, tıbbi malzemeler ve elektrikli araçlar olmak üzere üç örnek olay incelemesi üzerinden, transatlantik işbirliğinin kapsamını ve niteliğini değerlendirmektedir. AB Çip Yasası, ABD CHIPS and Science Act, Ticaret ve Teknoloji Konseyi (TTC) aracılığıyla yürütülen ortak girişimler, tıbbi ürünlerde stratejik stoklama uygulamaları ve batarya ile elektrikli araç tedarik zincirlerine yönelik karşılaştırmalı sanayi teşvikleri bu çerçevede analiz edilmektedir. Bulgular, her iki blokun da stratejik özerklik ve dayanıklılığı artırmayı hedeflediğini; ancak koordinasyonun alana göre değiştiğini göstermektedir: yarı iletkenlerde en güçlü, sağlık alanında erken aşamada ve yeşil teknolojilerde daha rekabetçi bir görünüm söz konusudur. Çalışma, ortak standartların geliştirilmesi, eşgüdümlü tedarik mekanizmaları ve teknoloji transferi çerçeveleri dâhil olmak üzere AB-ABD sanayi işbirliğini derinleştirmeye yönelik politika önerileri sunmaktadır.

Anahtar Kelimeler: *Geri Getirme (Reshoring), Tedarik Zinciri Dayanıklılığı, Transatlantik İşbirliği, Yari İletkenler, Elektrikli Araçlar.*

Jel Kodları: *F13, L52, O25, Q55.*

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1. INTRODUCTION

The COVID - 19 pandemic (2020 - 2023) exposed profound vulnerabilities in global supply chains, as demand spikes for critical goods, such as personal protective equipment (PPE), medical devices, and semiconductors, which coincided with significant production and logistical disruptions (Freeman et al., 2020; OECD, 2024). In particular, the global semiconductor shortage impacted over 169 industries, including automotive, consumer electronics, and telecommunications; causing production slowdowns and steep price increases (Frieske and Stieler, 2022; Ivanov et al., 2021; OECD, 2023). These disruptions brought into sharp focus the strategic risks associated with concentrated production, especially in East Asia.

As a result, both the European Union and the United States began pursuing reshoring, nearshoring, and "friend - shoring" strategies for critical industries. Resilience has become central to transatlantic policymaking, with both regions seeking to balance economic openness and supply chain autonomy (Schneider and Petsinger, 2021; Gereffi, 2020). The broader geopolitical context, characterized by U.S. - China tensions and the EU's strategic autonomy discourse, has further accelerated these policy shifts (Gereffi, 2023).

In the semiconductor space, the EU launched the Chips Act in 2022, aiming to raise its global wafer production share to 20% by 2030, supported by approximately €43 billion in public and private investments (European Parliament, 2023; Wilson Center, 2022). Similarly, the U.S. passed the CHIPS and Science Act in 2022, committing around US $52.7 billion, including US $39 billion in manufacturing subsidies and 25% investment tax credits, to strengthen domestic production and research capacity (Congress.gov, 2022; CFR, 2023).

These parallel efforts share strategic goals: bolstering domestic manufacturing, minimizing overseas dependencies, and reinforcing supply chain resilience. Yet, implementation differs markedly. The U.S. model strongly emphasizes tax incentives, R&D funding, workforce development, and close industry coordination (CFR, 2023; PwC, 2024). The EU's approach, while ambitious, faces criticisms for fragmented governance and weaker public - private coherence (Financial Times, 2025).

The pandemic revealed Europe's vulnerability in medical supply chains, prompting the formation of the Health Emergency Preparedness and Response Authority (HERA) to coordinate stockpiling, supply diversification, and crisis response (OECD, 2024). The U.S. reinforced its Strategic National Stockpile (SNS), leveraging the Defense Production Act and advance procurement mechanisms to foster domestic capacity. Despite FDA - EMA cooperation, sustained transatlantic coordination in procurement and shared inventories remains limited (Gereffi, 2020; OECD, 2024).

In clean technologies, both sides launched major industrial incentives. The U.S. Inflation Reduction Act (IRA) (2022) offers tax credits for domestically produced EVs and battery components. The EU countered with its Green Deal Industrial Plan (2023), including the Net - Zero Industry Act, Critical Raw Materials Act, and Important Projects of Common European Interest (IPCEIs), (European Commission, 2023a). Though objectives align, fostering clean - tech autonomy, these initiatives also fuel potential subsidy competition. Coordination remains emergent, with the need for harmonized standards and mutual recognition mechanisms.

This paper provides a comparative case study analysis of EU–US reshoring in three key sectors: semiconductors, medical supplies, and EVs/batteries. It examines the policy architecture and the scale of industrial incentives that underpin these efforts, as well as the institutional coordination mechanisms with a particular focus on the Trade and Technology Council. The analysis also considers sectoral outcomes in terms of investment, production, and regulatory cooperation, highlighting both areas of convergence and points of friction.

Beyond mapping current dynamics, the paper explores the opportunities and constraints for deepening transatlantic collaboration. The findings, grounded in policy documents, stakeholder communiqués, and sector-specific reports, aim to inform strategies for harmonizing resilience-building efforts across democratic economies.

The structure of the present paper is as follows: Section 2 articulates the conceptual foundations - defining reshoring, strategic autonomy, and policy instruments. Sections 3 - 5 analyze in - depth case studies on semiconductors, medical supplies, and EVs/batteries. Section 6 represents discussion, which synthesizes comparative insights and examines institutional enablers and barriers. It also includes policy recommendations. Section 7 represents conclusion and suggests themes for future research.

The disruptions of the COVID-19 pandemic unfolded during a deeper structural transformation in the global economy, where production networks were being reconfigured gradually and the state returned to to be a key actor in industrial policy. Today, the EU and the US function within what scholars refer to as a "post-globalization" or "resilient globalization" frame – one that favours openness but prioritizes security, technological sovereignty, and sustainability. In this context, reshoring initiatives are not just emergency-type responses but rather part of the reorientation towards strategic industrial governance. By analyzing in three key sectors (semiconductors, medical supplies, and electric vehicles) this study contributes to the understanding of how advanced economies are redefining globalization through integrated, resilience-driven policy approaches.

2. CONCEPTUAL FRAMEWORK

2.1. Reshoring in Global Supply Chains

"Reshoring" refers to the process by which firms or governments seek to bring production activities back to their home countries or nearby allied regions after a period of offshoring to distant, cost - efficient locations (Barbieri et al., 2020). This trend has come back due to the vulnerabilities exposed by the COVID - 19 pandemic, geopolitical instability, and increased risks of overdependence on single - source suppliers, especially in strategic sectors such as semiconductors, pharmaceuticals, and green technologies (Gereffi, 2020; OECD, 2023).

While reshoring has traditionally been driven by corporate - level motives, such as cost control, quality assurance, and supply chain agility, it is increasingly influenced by public policy. Governments are employing reshoring as a tool to enhance national resilience, reduce strategic dependencies, and stimulate domestic innovation ecosystems (Fratocchi et al., 2016; Sturgeon, 2021). This "policy - driven reshoring" blurs the line between economic strategy and security policy, positioning supply chains as critical national infrastructure.

2.2. Strategic Autonomy In The EU And The US

Both the EU and the US have adopted reshoring policies. The EU frames these endeavors as "strategic autonomy" – initially used to describe defense and security but broadened to include industrial policy, digital infrastructure, and raw materials. The European Commission has explicitly stated that the EU must reduce its "excessive dependencies" on third countries and promote homegrown capabilities in key technologies (European Commission, 2021).

For the United States, reshoring is condsidered as a national security and competitiveness issue, most often described as "supply chain resilience." Policy proposals, like the CHIPS/Science Act, DPA, and IRA, are focused on recovering domestic industrial capacity, securing essential inputs, and minimizing strategic dependence on geopolitical rivals (CFR, 2023; CSIS, 2024). The US policies also acknowledge the importance of "friend - shoring" - the deliberate relocation of supply chains to trusted partners, including the EU (Yellen, 2022).

2.3. Transatlantic Coordination Mechanisms

While the narratives are slightly different, both blocs have implemented some form of policy coordination, notably through the establishment of the EU - US Trade and Technology Council (TTC) in 2021. The TTC is a principal mechanism to coordinate transatlantic policies and strategies in areas including semiconductor supply chains, digital standards, export controls, as well as sustainable trade (Wilson Center, 2022). The TTC Working Group on Supply Chains focuses on information sharing, vulnerability mapping, and opportunities for joint investment.

However, deeper coordination between the two remains uneven. There is convergence in semiconductor strategy, cooperation in health resilience and green technology is still limited, hindered by overlapping subsidies, diverging regulatory requirements, and national industrial competition (DGAP, 2024; PwC, 2024).

2.4. Policy Instruments For Reshoring

Governments have used several tools of industrial policy in attempts to promote reshoring:

- Both the US CHIPS Act and EU Chips Act provide substantial direct investment and fiscal incentives for manufacturing semiconductors (European Parliament, 2023; Congress.gov, 2022).
- In the healthcare sphere in many cases reshoring is supported by strategic stores and compulsory purchase commitments (HERA in the EU, and the Strategic National Stockpile in the US).
- Streamlining environmental, zoning, or FDI screening laws to fast - track investment.
- Forums such as TTC and sectoral dialogues on raw materials and critical technology platforms.

These instruments embody a common approach to industrial resilience as a public good, but also highlight the difficulty of harmonizing heterogeneous economic and regulatory environments.

2.5. Analytical Approach

The study is structured as a qualitative comparative case study, whose aim is to identify converging and diverging trends of EU-US reshoring strategies in strategic sectors.

The three examples -semiconductors, medical supplies, and electric vehicles/batteries were selescted purposively as they are crucial aspects of technology policy, health policy, and green transition. Each embodies a particular aspect of strategic autonomy: digital sovereignty, health resilience, and climate-related industrial transformation.

The desk research and documentary evidence reviewed comes from official EU, U.S. policy documents (e.g., legislative acts, communications, white papers), policy-oriented institutional reports and analyses, industry associations' materials as well as academic scholar articles published between 2020–2024. The documents were subject to qualitative content analysis, organized around four comparative dimensions: 1/ the policy frame and instruments; 2/ level of transatlantic coordination; 3/ sectoral effects in terms of investment, production, and resilience; and 4/ obstacles and sources of policy misalignment.

This multi-leveled analysis strategy will enable comparison not only of policy content but also institutional structures (the mechanisms of recovery) and strategic rationales for reshoring. The latter principle in particular is reinforced by the logic of structured, focused comparison: case consistency should be maintained while still allowing for context-specific cases. The goal is analytical generalization - to identify patterns of convergence and divergence that might usefully inform future transatlantic industrial collaboration.

The focus on three strategic sectors and specific period (2020–2024) are the main limitations of this study, and the conclusions should be cnsidered in this qualitative and temporal context.

2.6. Theoretical Foundations

The idea of strategic autonomy and the concept of supply chain resilience can be interpreted through several complementary theoretical frameworks which help us understand the contemporary reshoring trend. From the perspective of Global Value Chain (GVC) reconfiguration (Gereffi, 2023; Baldwin and Freeman, 2022), the reshoring is a part of a selective retreat against hyper-globalization characterized by regionalisation, diversification of supplies, and production functions relocated to trusted agents. This is a reflection of how global networks adjust to geopolitical and riskier transaction environments.

Theoretical foundations for these transformations and how they can be influenced by firms or government are provided by the Dynamic Capabilities theory (Teece, 2007), which focuses on the ability of firms and governments to sense, seize, and reconfigure resources in uncertain environments.

At a macro level, institutional and evolutionary economics (North, 1990; Rodrik, 2004) tend to stress the importance of governance regimes, institutional learning, innovation, and policy coherence in influencing production restructuring.

By taking into account these perspectives, a deeper and more subtle picture of EU and U.S. reshoring policies emerges not only as reflex responses to a crisis but also as expressions of a new paradigm of global industrial policy that blends market adaptation with strategic state intervention.

3. CASE STUDY: SEMICONDUCTORS

This section applies the proposed analytical framework to the semiconductor industry, analyzing policy instruments, coordination mechanisms, and sectoral outcomes of EU-US actions toward technological sovereignty and supply chain resilience.

3.1. Background

Semiconductors are a foundational technology for the global economy, powering consumer electronics, telecommunications, healthcare, automotive, industrial machinery, artificial intelligence, and defense systems. As the "brains" of the new technologies, they are essential to drive digitalisation and innovation (OECD, 2023).

The semiconductor chain is highly specialized, capital-intensive, and geographically concentrated. Design is still dominated by U.S. companies, such as NVIDIA, Qualcomm, and Intel, but today, East Asia is the center of fabrication, with numerous chip factories located in Taiwan (TSMC), South Korea (Samsung), and China (SMIC). The output of Taiwan alone contributes to more than 60% of global foundries' production, and close to 90% of the global production of chips with gate length below 7nm (CSIS, 2023). This dependence became a major liability during COVID-19, when lockdowns, supply chain bottlenecks, and surging demand led to enormous shortages. By mid-2021, automotive production across the EU and US stalled, with global losses estimated in the hundreds of billions (Frieske and Stieler, 2022; Ivanov et al., 2021).

The crisis made semiconductors a national security priority. In the EU and U.S, policymakers saw dependence on East Asia, and on Taiwan in particular, as a strategic liability as U.S.-China tensions surged. Both the EU and the U.S. pursued plans to lower their reliance: the EU's 2021 Strategic Foresight Report warned that 90% of chips being sourced from abroad was "unsustainable" (European Commission, 2021), and Executive Order 14017 launched a 100-day U.S. review calling for a "whole-of-government" response (White House, 2021).

Yet reshoring faces steep challenges. Constructing advanced fabs, meanwhile, takes billions of dollars in investment, vast amounts of skilled labor, secure utilities, and years' worth of lead time. And production is still transnational: ASML in the Netherlands leads in lithography, Japan is the source of many key chemicals, and U.S. companies own the dominant EDA software. Such deep interdependence renders unilateral reshoring infeasible and highlights the importance of coordinated transatlantic strategies (OECD, 2023; PwC, 2024).

As a result, semiconductors have now become a test case for wider arguments about supply chain resilience and strategic autonomy. Reshoring chips isn't like bringing back textiles or low-margin electronics - it requires innovation ecosystems that include R&D hubs, university–industry relationships, and embedded suppliers. There is a growing consensus around public-private partnerships being the optimum policy model. But subsidies risk triggering global "races" for investment, distorting markets, and stoking geostrategic tensions (DGAP, 2024). This makes multilateral coordination – in particular through the EU–US Trade and Technology Council – crucial to prevent subsidy conflicts, harmonize standards, exchange early-warning information, and ensure interoperability.

3.2. The US CHIPS And Science Act

The CHIPS and Science Act of 2022 represents the largest federal investment in American semiconductor manufacturing and research in decades. The law was signed with broad, bipartisan support that authorizes $280 billion in spending, including $52.7 billion for domestically oriented production, research, and workforce (Congress.gov, 2022). The Act should also be understood in terms of economic and security concerns - namely, revitalizing domestic fabs, reducing supply chain dependencies, and keeping pace with China's rise in technology (White House, 2022; CFR, 2023).

The key measures include incentives for the construction and modernization of fabs as well as $11 billion for research programs in the Department of Commerce as well as NIST, and the establishment of a National Semiconductor Technology Center as well as an Advanced Packaging Program. Labor incentives (grants and scholarships) aim to alleviate chronic labor shortages. Alongside, the Bureau of Industry and Security (BIS) has introduced new export controls to limit sales of advanced chips to Chinese companies, reinforcing the Act's geopolitical dimension (CSIS, 2023).

The legislation has prompted significant investment announcements. TSMC has announced a $40 billion dual-fab complex for Arizona, Intel is pledging $100 billion in new fabs in Ohio and beyond, Samsung is spending $17 billion in Texas, and Micron is building a $100 billion memory chip megafab in New York. Collectively, these projects could create more than 40,000 direct jobs and tens more of indirect ones (PwC, 2024).

A central strength of the Act lies in its clarity and centralized administration through the Department of Commerce's CHIPS Program Office. This is in contrast to the EU Chips Act which is based on national co-funding and has stimulated a rapid industry uptake (DGAP, 2024). However, challenges remain. Increasing costs, shortage of skilled labor, and regulatory challenges have further slowed work, and TSMC has pushed back the start of volume production at Arizona to 2025 (Reuters, 2024). Critics also warn of the potential for long-run subsidy dependence and the risks of crowding out private investment. Furthermore, the Act has reinforced U.S.–China tensions and could further speed up the fragmentation of the global chip ecosystem (Gereffi, 2023).

For Europe, the CHIPS Act is cooperative and competitive. It has led to parallel efforts, most prominently the EU Chips Act, and has generated concerns including subsidy races, protectionism, and "Buy American" clauses (Wilson Center, 2022). But there are also opportunities for cooperation. Through the EU-US Trade and Technology Council, they have initiated joint work on supply chain mapping, early warning systems, and R&D. Crucially, eligibility clauses would allow businesses with associated ownership to access U.S. finance if they satisfy security requirements, laying the groundwork for greater transatlantic convergence (CFR, 2023).

3.3. The European Chips Act

The European Chips Act was adopted in July 2023 and is the most ambitious strategic effort of the European Union to catch up its position in the global semiconductor industry and improve technological sovereignty. Rising to address the global chip shortages of the COVID-19 pandemic as well as rising geopolitical insecurity, the Act seeks to mobilize €43 billion of public and private investment and to double Europe's global market share in semiconductors to 20% by 2030 from under 10% at present (European Parliament, 2023; European Commission, 2022b). It fits with the EU's overall narrative of strategic autonomy: the ability to independently act in crucial industrial fields without becoming too dependent on third countries.

The CHIPS Act has three primary goals:

1) Reinforcing the EU's chip production capacity by fostering mega-fabs and incentivizing foreign investments,
2) Strengthening the EU's semiconductor research and design ecosystem including pilot lines, advanced packaging, quantum, edge computing, among others,
3) Creating a coordinated governance framework for monitoring risks, intervening during future supply crises, and improving value chain transparency.

At its core, the Act aims to close the innovation-to-market gap, moving beyond Europe's leadership in research (through centers such as IMEC in Belgium, CEA-Leti in France, and Fraunhofer in Germany) to reassert leadership in commercial-scale manufacturing.

The ECA is based on three interacting pillars. Pillar 1 "Chips for Europe Initiative," is a new financial instrument implemented jointly by the European Commission and the Chips Joint Undertaking (inherited from the Key Digital Technologies JU), with a budget of €3.3 billion from the EU, matched by national and private co - funding. This initiative supports R&D infrastructure, pilot lines for new technologies (e.g., below 2nm), design libraries, and startup support mechanisms. Pillar 2 "Security of Supply" establishes the notion of "first-of-a-kind" production facilities for those semiconductors or for the materials that are not available in Europe. These can be eligible for public aid through more accommodating state aid rules. Importantly, traditional competition law prohibitions can be exempted to enable such investments permitting industrial policy to reflect strategy. Notably, the Commission allows for exemptions from traditional competition law constraints to accommodate such investments, aligning industrial policy with strategic goals. Pillar 3 "Monitoring and Crisis Response" sets up a Semiconductor Alert System to trigger early warning on shortages, disruptions, or sudden demand spikes, and empowers the Commission to take response measures coordinated with the Member States, which could include prioritization legislation or joint procurement.

Taken together, these tools constitute a holistic package addressing both upstream innovation and downstream uptake in industry options as well as the associated capacity building, connectivity, talent development, and secure supply chains (European Commission, 2022b; Wilson Center, 2022).

By early 2024, the European Chips Act had triggered several high-profile investment announcements: Intel's €30 billion 'mega-fab' in Magdeburg, Germany (co-financed by up to €10 billion in public support), scheduled to start construction in 2025; the STMicroelectronics/GlobalFoundries joint-venture fab in Crolles, France, claiming the production of chips (FD-SOI) targeting end markets like automotive and industrial applications; Infineon's expansion in Dresden, producing power semiconductors for electric vehicles; R&D hubs in Belgium (IMEC), the Netherlands (ASML), and Italy (PoliNanoTech), strengthening Europe's design and innovation base, and others.

These developments represented a strategic shift towards rebuilding of the production ecosystem in Europe, particularly when it comes to chips that are for automotive, energy, and health sectors where Europe has a high share in the global market. However, the European Chips Act lacks the central funding and centralized governance structure of the US CHIPS Act. Actual implementation relies strongly on the fiscal capabilities of national governments to co-finance EU support, which creates asymmetric incentives and a race among Member States for attracting investment. Germany, France, or Italy are leading in both financial commitments and project attraction, while smaller economies struggle to participate meaningfully (DGAP, 2024). Moreover, critics have observed a lack of coherence between EU industrial strategies, including the Chips Act, the Green Deal Industrial Plan, and the Net-Zero Industry Act.

In this regard, the EU-US Trade and Technology Council is an important forum for coordinating industrial strategies, preventing subsidy conflicts and promoting joint investment or common standards, in particular for semiconductor technologies (Wilson Center, 2022; CFR, 2023). While the European Chips Act is a clear step forward, the successful outcome will depend on persistent strategic investments, supra-national coordination, and external collaboration in light of the fast pace of technological development.

Table 1 synthesizes the two acts and compares them according to different dimensions.

Table 1. Comparison of the EU and US Approach to Semiconductors' Resilience

Dimension	**EU Chips Act**	**US CHIPS Act**
Name	European Chips Act	CHIPS and Science Act
Year of adoption	2023	2022
Funding amount	€43 billion (public + private)	$52.7 billion (federal funding)
Primary focus	Strategic autonomy, resilience, design to fab	National security, tech leadership, fab expansion
Governance structure	Decentralized (EU + national co-funding)	Centralized (Dept. of Commerce)
R&D Support	Strong (IMEC, pilot lines, Chips Joint Undertaking)	Strong (NSTC, packaging, NSF programs)
Manufacturing incentives	Eligible 'first-of-a-kind' fabs, state aid exemptions	Direct subsidies + 25% tax credit
Implementation challenges	Fragmented national support; asymmetric funding capacity	Workforce gaps; project delays; subsidy dependency
International cooperation	TTC; coordination still developing	TTC; strong bilateral outreach

Source: The author

3.4. Transatlantic Collaboration

The COVID-19-triggered chip shortages and the accelerating global geopolitical rivalry between the United States and China spurred an unprecedented new wave of strategic convergence in the European Union-US semiconductor space. Collaboration in technology and innovation has been a feature of relations between the two regions at bilateral and multilateral levels historically; however, the period after 2020 has seen an unparalleled institutionalization of this. At the heart of these efforts is the above-mentioned EU-US Trade and Technology Council (TTC) - a high-level transatlantic forum, launched in June 2021, to respond to emerging technology challenges while fostering a strategic alignment.

The TTC is the primary institutional channel for EU-US cooperation on semiconductors. It will be co-chaired by the European Commission Executive Vice Presidents for Digital and Trade, as well as by the U.S. Secretaries of State, Commerce, and U.S. Trade Representative. Its ten working groups, in particular Working Group 3, on secure supply chains, have identified the semiconductor value chain as a priority issue of transatlantic strategic interest (European Commission, 2023b; USTR, 2022).

Key TTC initiatives on semiconductors focus on strengthening resilience and coordination. An Early Warning System allows the EU and the US to exchange information on possible significant supply chain risks and to cooperate to prevent shortages or take joint action against third countries that impose unilateral restrictions. Both sides have also conducted joint mapping of semiconductor ecosystems to map critical nodes across raw materials, equipment, design, and packaging to define dependence and investment gaps. At the same time, cooperation in R&D is being supported through convergence of R&D agendas and funding programs; joint projects are being looked at in the fields of next-generation semiconductors, quantum computing, and photonics. Finally, an investment screening dialogue has intensified to facilitate closer coordination on FDI with potential strategic or security dimensions.

These initiatives represent a clear departure from traditional trade liberalization toward a strategic industrial partnership in which resilience and competitiveness are treated as common interests.

Despite differences in political systems and industrial organization, the EU and US face a striking similarity in their approaches to semiconductors. Both blocs now understand semiconductors to be essential for national security, economic stability, and technological sovereignty, a consensus that has helped to generate wide public support for industrial policy in a sector once dominated by market forces. The US is the leader in chip design, AI/ML, and venture capital, with NVIDIA, AMD, and Qualcomm being pace setters at the moment. The European Union, by contrast, is home to global leaders in lithography (ASML), power semiconductors (Infineon), and industrial electronics. These complementarities generate prospects for co-evolution of supply chain and co-creation of innovation. In addition, the US CHIPS and Science Act, and the EU Chips Act ensemble the same policy instruments, such as direct subsidies, tax and R&D investments, and public-private partnerships. This convergence facilitates coordination and reduces frictions related to compliance and eligibility. Both sides are also investing in talent pipelines, with growing interest in academic exchanges, dual-degree programs, and mutual recognition of engineering and vocational credentials. Together, this alignment provides a strong basis for deepening engagement on a bilateral basis, especially in the areas of standard-setting, cross-border investment facilitation, and the control of geopolitical risk.

However, a number of structural obstacles still prevent cooperation between both sides of the Atlantic from fully materializing. A key concern is a race-to-the-bottom subsidy war, where both jurisdictions are vying to attract the same leading firms, such as TSMC, Intel, and GlobalFoundries, with ever-rich incentive packages. This competition risks distorting the investment decisions and breaking down the global supply base. Provisions in the US CHIPS Act that privilege domestic sourcing and labor have, relatedly, led to European concerns on market access and fair competition. These frictions mirror broader disputes triggered by the Inflation Reduction Act, particularly in relation to electric vehicle subsidies.

Regulatory divergences further complicate cooperation. Variations in environmental regulations, labor regulation, and industrial permitting can impede joint ventures and slow down project realization, with the EU's more nuanced regulatory regime commonly seen as a disadvantage (when it comes to fab construction) versus the US. Institutional asymmetries also count. The US runs its CHIPS program centrally through the Department of Commerce, while the EU depends upon national co-funding and exemptions from competition law, which may result in uneven implementation and coordination challenges across member states (DGAP, 2024). Finally, geopolitical alignment remains incomplete. The United States has pushed aggressively to control exports in order to limit China's access to advanced semiconductor technology. Though the EU broadly approves of these measures, it has adopted a cautious position towards decoupling, introducing potential strategic ambiguity in joint enforcement and technology containment policies (Gereffi, 2023).

In second place, establishing joint research programs under Horizon Europe or the US National Science Foundation (NSF) would deepen technological collaboration and foster long-term innovation. Thirdly, collaborative investment screening and reciprocity agreements could help create joint fab development or co-location strategies. In fourth place, aligning educational and certification systems for engineers and technicians would strengthen labor mobility and ameliorate mutual workforce shortfalls. Finally, building out the TTC's early warning system into a formal crisis coordination protocol - with data - sharing, inventory stockpiling, and rapid - response funding - would increase preparedness for future shocks.

It can be concluded that the semiconductor sector has emerged as both a symbol and a test case for transatlantic industrial cooperation in a multipolar world. The EU and US have taken important steps towards harmonizing strategies, reducing risks, and identifying areas of potential cooperation. Yet, the way forward will need institutional innovation, trust building, and regulatory harmonization to progress towards a truly integrated supply chain resilience.

4. CASE STUDY: MEDICAL SUPPLIES AND HEALTH RESILIENCE

This case follows the above analytical framework but puts an emphasis on reshoring and resilience policies in the medical supplies sector. It assesses how much transatlantic coordination has been taking place both amid crisis and post-COVID-19.

4.1. Background

The COVID-19 pandemic exposed the extreme vulnerability of the global supply chains for medical equipment (PPE, ventilators), diagnostic reagents, and pharmaceuticals. Both the European Union and the United States experienced severe shortages at the beginning of the pandemic as a result of heavy reliance on foreign suppliers, such as China and India (OECD, 2021; WHO, 2020). Supply shocks were compounded by export bans, price gouging, and logistical blockages that set off a chain reaction of failures in the national health systems.

Over eighty countries issued export restrictions on medical goods during January-May 2020, which disrupted the availability of essential goods (WHO, 2020). The United States experienced severe shortages of N95 respirators, while Europe struggled with fragmented procurement, uneven stockpiles, and delayed cross - border assistance (Gereffi, 2020; ECFR, 2021). These disruptions, in turn, led to far-reaching demands for building greater supply chain resilience, domestic manufacturing, and strategic reserves.

4.2. The US Approach

The U.S. response focused primarily on expanding the role and capacity of the Strategic National Stockpile (SNS) and leveraging the Defense Production Act (DPA). Initially criticized for unpreparedness and underfunding, the SNS was overhauled in 2021 under the Biden Administration. The government significantly increased funding for domestic production of essential goods, including PPE, syringes, and rapid test kits.

Key measures included:

- Using the Defense Production Act (DPA) to require or induce companies to manufacture ventilators, PPE, and testing supplies.
- Signing advanced purchase agreements with key manufacturers (3M, Honeywell) to secure supply.
- Creating a COVID-19 Supply Chain Task Force to lead a coordinated effort between the federal government and the private sector to procure of critical resources.
- Expanding partnerships with domestic companies through BARDA (Biomedical Advanced Research and Development Authority, 2022) for vaccine and therapeutics production.

The Department of Health and Human Services (HHS) also launched the Medical Countermeasures Supply Chain Strategy, which emphasizes reshoring active pharmaceutical ingredient (API) production and developing domestic capacity for biologics, diagnostics, and vaccines (U.S. Department of Health and Human Services, 2021).

4.3. The EU Approach

The European Union's initial response was not only hampered by bureaucratic inertia but also by institutional fragmentation as health policy is still predominantly a national competence. The During the first wave of the pandemic, Member States implemented uncoordinated procurement strategies and export restrictions - causing friction within the single market (ECFR, 2021).

Recognizing these deficiencies, the European Commission launched two important initiatives:

- Joint Procurement Mechanism (JPA) - Enabled coordinated purchases of vaccines, PPE, and therapeutics at the EU level. Despite some delays, the JPA eventually became a key channel for vaccine distribution, notably via agreements with BioNTech/Pfizer and Moderna.
- Health Emergency Preparedness and Response Authority (HERA) - Established in 2021, HERA is a permanent EU agency tasked with threat monitoring, procurement

coordination, supply chain mapping, and emergency response (European Commission, 2022a).

HERA has four pillars: 1/ intelligence gathering and foresight; 2/ strategic stockpiling; 3/ advanced R&D investment; and 4/ crisis coordination and the mobilization of funding.

The EU also launched actions under the EU4Health programme to facilitate the production of vaccines and medical countermeasures on its territory, including investments in fill - finish facilities and cold - chain infrastructure.

Table 2. Comparison of the EU and US Approach to Medical Supplies

Dimension	EU	US	EU - US Collaboration
Institutional Setup	HERA, Joint Procurement Agreement	Strategic National Stockpile, DPA, BARDA	Limited; no standing coordination mechanism
Manufacturing Capacity	Select reshoring of APIs, fill - finish plants	Direct investments via DPA and long - term contracts	Shared firms (e.g., Pfizer - BioNTech), weak formal ties
Stockpiling Strategy	Centralized via HERA, reliant on national inventories	Expanded SNS, federal procurement and surge capacity	Ad hoc information sharing
Procurement Mechanism	EU - level JPA and EU4Health	Federal contracts, DPA mandates, advanced market commitments	No joint procurement
Regulatory Synergy	EMA reforms, joint HTA development	FDA accelerated pathways, EUA reform	Mutual recognition improving

Source: The author

The pandemic exposed a coordination gap in transatlantic health security, driven by institutional fragmentation and political sensitivities around sovereignty and public health. However, it also laid the groundwork for stronger regulatory alignment and the potential for joint crisis response mechanisms.

4.4. Transatlantic Collaboration

Transatlantic cooperation in the area of health security resistance has been more limited compared to that in the semiconductor industry. The US and EU engaged in vaccine diplomacy on an ad hoc basis, G7-level vaccine diplomacy, and COVAX collaboration, but did not have long-term mutual cooperation on on procurement, manufacturing, and stockpiling strategy (Wilson Center, 2022).

Nevertheless, some initiatives emerged. First, there was a form of regulatory harmonization as the U.S. FDA and the EU EMA both increased mutual recognition for inspections and started aligning review procedures for emergency use authorizations. In second place, there has been a rise in the transatlantic research on genomics, vaccine platforms, and antimicrobial resistance under Horizon Europe and NIH partnerships. Last but not least, TTC Health Tech Dialogue (HTD), albeit not formalized in any way, was launched and has had discussions within TTC on pandemic preparedness, transparency in the supply chain, and digital health platforms. Still, these initiatives do no match for the industrial coordination seen in semiconductors. It lacks a formal mechanism for transatlantic health security, there are differences between procurement and liability models, as well as competitive pressures in biotech and pharma markets, and there is still a national control over health policy and stockpile management.

To advance cooperation in this sector, several concrete steps can be taken. A first priority is the formalization of a Transatlantic Health Resilience Framework, ideally under the TTC or G7, which would provide a structured platform for coordinating procurement, stockpiling, and medical research and development. Another important measure is the expansion of the mutual recognition between the FDA and EMA, particularly for emergency authorizations, inspections, and quality standards. Such regulatory interoperability would allow for faster responses in times of crisis and greater trust in medical products on both sides of the Atlantic. Joint preparedness also requires practical mechanisms for crisis response. Developing shared stockpiles or at least interoperability protocols, especially for PPE, diagnostics, and antivirals would ensure that both partners can respond swiftly to unexpected shocks. At the same time, strengthening transatlantic R&D consortia focused on pandemic response, pathogen surveillance, and scaling up manufacturing capacity would build the scientific and industrial foundations for long-term resilience. Finally, greater transparency in pharmaceutical supply chains is essential. Shared risk assessments and the development of crisis dashboards would improve monitoring, reduce vulnerabilities, and allow for coordinated response in the event of future health emergencies.

Overall, the transatlantic health-security domain illustrates the limits of crisis-driven coordination. While both HERA and the U.S. SNS now integrate foresight and procurement tools, their interaction remains largely information-based rather than operational. There is no permanent platform in the health field, equivalent to the TTC in semiconductors, for joint crisis management and storage. However, the simultaneous arising of HERA and of the SNS indicates a convergence in gradual institutional learning between these two actor sides, both of whom now seem to understand the necessity of politically speculative governance anticipation as well as long-term supply chain mapping. In this respect, health resilience is likely to develop as the "new frontier" of formal EU-US collaboration, putting aside strong interoperability of regulation and sharing of data exchange frameworks.

5. CASE STUDY: ELECTRIC VEHICLES

This section applies the comparative framework to examine transatlantic industrial policies in electric vehicles and battery supply chains, including how climate objectives relate to industrial competitiveness and technological autonomy.

5.1. Background

The worldwide push for climate neutrality, triggered by the Paris Agreement and the European Green Deal, has made electric vehicles (EVs) and battery technology essential to 21st-century industrial policy. The automotive industry - the backbone of both the American and European economies - is undergoing a fundamental shift as governments seek to phase out internal combustion engines, speed up green transport infrastructure, and localize battery value chains.

Batteries are not only about clean energy but they also represent a strategic supply chain issue, with dependency on critical raw materials (lithium, cobalt, nickel, graphite) that the industry sources from geopolitically sensitive or concentrated locations. China dominates the value chain and over 70% of the global production of battery cells (IEA, 2022). Both the EU and the US have accordingly made battery and EV policy a priority in their industrial strategies, aiming to combine climate objectives with economic resilience and geopolitical risk mitigation.

5.2. The US Approach

The Inflation Reduction Act (IRA), enacted in August 2022, comprises the American administration's climate and industrial policy. It provides more than $370 billion in climate and energy investments, including strong incentives for clean technologies such as electric vehicles, battery materials, and renewable energy (White House, 2022).

Key IRA provisions of interest to EVs and batteries are:

- Consumer credits for new EVs of up to $7,500, subject to final assembly in North America and the use of battery components and other critical minerals sourced from the US or FTA partners.
- Incentives to support battery cell, module, and anode production in the U.S.
- Funding through the Department of Energy (DOE) and the Loan Programs Office (LPO) for the establishment of gigafactories and critical mineral processing.
- Executive actions and legislative requirements (for example, Defense Production Act authorities), to encourage domestic mining and processing activities, and provide and secure supply agreements with key allies.

These actions generated a whirlpool of private investment. As of mid-2024, more than $90 billion in battery and EV supply chain projects had been announced, such as Ford – SK Innovation, Tesla, GM – LG Energy Solution, and Panasonic (CSIS, 2023).

5.3. The EU Approach

The EU's approach is enshrined within its Green Deal Industrial Plan (2023) and incorporates the Net-Zero Industry Act, the Critical Raw Materials Act, as well as already existing frameworks such as the Battery Alliance and Important Projects of Common European Interest (IPCEIs).

The key elements include:

- Flexing EU competition rules to allow targeted subsidies for strategic industries like battery manufacturing and raw materials processing.
- Two waves of battery IPCEIs (Important Project of Common European Interest), in 2019 and in 2021, have mobilized over €10 billion of public support and €20 billion of private co-investment, to support companies such as Northvolt, Verkor, and ACC.
- Establishment of European Battery Alliance (EBA) - a public-private platform envisaged to coordinate research, standards, skills development, and ecosystem integration within Member States.

- Development of Critical Raw Materials Strategy in 2023, which sets benchmarks for domestic sourcing (10%), processing (40%), and recycling (15%) of strategic materials by 2030 (European Commission, 2023c).
- European Union's funding for cross-border projects in mining, refining, cell manufacturing, and recycling, which would involve countries such as Germany, France, Finland, and Poland.

EU industrial policy does not have the same level of centralization as the US IRA, but is more focused on cooperative industrial networks, regional integration, and supply chain sustainability.

5.4. Transatlantic Cooperation

The IRA generated frictions in EU-US relations, notably over the domestic content requirements for EV tax benefits, considered discriminatory under WTO rules (and potentially harmful for the European producers) (European Commission, 2023b). The European policymakers argued that the IRA risked triggering a "subsidy race" and distorting competition.

Diplomatic negotiations in turn resulted in the establishment of a Transatlantic Clean Energy Partnership (TCEP - a chapter under the TTC). In parallel, the US Treasury issued guidance allowing for some flexibility - for example, by recognizing EU extraction and processing as compliant with the "critical minerals" rule (USTR, 2023).

Despite initial tensions, there are strong foundations for cooperation in shared climate goals and emissions targets, mutual need for resilient and diversified battery supply chains, overlapping technology standards and regulatory priorities and cross - investment by major firms (e.g. BASF, BMW, Tesla, Northvolt).

The EV and battery sector represents a mix of strategic convergence and policy competition. While both regions aim to build domestic capacity and reduce dependencies, their subsidy models and governance approaches differ significantly. Nevertheless, the shared challenge of decarbonization and securing clean energy technology provides a powerful rationale for enhanced coordination (Table 3).

Table 3. Comparison of the EU and US APPROACh to Electric Vehicles

Dimension	EU	US	EU - US Collaboration
Policy Framework	Green Deal, Net - Zero Act, CRMA, IPCEIs	Inflation Reduction Act, Bipartisan Infrastructure Law	TTC Dialogue on Clean Tech; ad hoc negotiations
Incentives	Public funding via Member States + EU subsidies (EBA, IPCEIs)	Tax credits (IRA Sections 30D & 45X), federal grants	Limited mutual recognition; subsidy competition risks
Raw Materials Strategy	Recycling, strategic stockpiling, EU sourcing targets	DPA authorizations, mining/processing incentives	MoUs and dialogues on critical mineral cooperation

Private Investment	>€20 billion via EBA and IPCEI consortia	>$90 billion announced post - IRA	Cross - border investment by shared firms (Tesla, BASF, Umicore)
Workforce Development	EBA skills agenda, Erasmus+ for engineers	Domestic workforce grants, apprenticeships via DOE programs	Potential for joint training, mutual credential recognition

Source: The author

Several coordinated actions can be taken to avoid subsidy competition and make a social and economic impact.

One step would be to build a Transatlantic Battery Partnership, similar to the Semiconductor Working Group within TTC, to facilitate joint supply chain mapping, joint research efforts, joint plans to ensure access to raw materials, and shared infrastructure planning.

Just as significant is the standardization for sustainability. Standardizing methods for life-cycle emissions, recycling, and the ethical extraction of raw materials would guarantee that environmental and humanitarian concerns become a permanent focus of industrial collaboration.

A transatlantic "green subsidy code" could also be a way to guard against a subsidy race. Through the establishment of transparency, notification, and reciprocity mechanisms, distortions would be limited and investment in clean technology could be promoted.

The next step could be to accelerate research cooperation Joint R&D projects funded through Horizon Europe and the US Department of Energy could focus on priority areas like solid-state batteries, rare earth substitutes, and second-life battery systems.

And lastly, cross-border skills initiatives would complement such efforts. Dual certificates, exchange programs, and industrial PhDs in battery engineering would contribute to a workforce that could strengthen the competitiveness of this strategically strategic sector in the long term.

While the exclusion of European producers from federal tax credits arising from IRA's domestic-content rules initially caused friction, more recent discussions within the TTC and Transatlantic Clean Energy Partnership have introduced greater flexibility to accommodate EU-sourced critical minerals and components. Both blocs have the same long-term aim - leadership in electromobility via secure, sustainable value chains - but they are getting there by different institutional routes. The U.S. model is based on fiscal incentives and centralized direction through the Department of Energy, while the EU hinges on state-aid exemptions, cross-border IPCEIs, and the European Battery Alliance. This structural imbalance illustrates the challenge of reconciling climate and industrial imperatives operating according to specific governance logics. Yet, convergence is emerging on sustainability standards, joint R&D collaboration, and shared talent efforts; a testament that points to the evolution of a transatlantic EV-battery ecosystem based on complementary skill sets rather than direct rivalry.

6. DISCUSSION

6.1. Overview Of The Three Cases' Convergence And Divergence

Existing research on supply chain resilience and industrial policy is a necessary framing for interpreting the results of this research. Framed in the light of Gereffi (2020), it seems like the COVID-19 crisis has become a kind of structural stress test for global value chains, exposing the fragility of highly concentrated systems of production. Yet, while Gereffi highlights firm-level adaptation towards resilience, this article illustrates the increasingly state-led nature of developing resilience as industrial and trade policy become strategic levers of governance.

Similarly, Baldwin and Freeman (2021) contend that globalization is being replaced by an era of selective regionalization; the present results qualify this observation by revealing a tendency to increasing institutional regionalization in shared transatlantic regulatory structures.

Contrastingly, Schneider-Petsinger (2021) predicted the degree of policy harmonization between the EU and US to be far greater, but appearance by this evidence shows that coordination is still sector-specific and asymmetric.

This interpretation is consistent with McNamara's (2023) view that the EU industrial policy activism is as a step in a broader geopolitical reorientation rather than complete transatlantic integration. Finally, the use of a dynamic capabilities lens (Teece, 2007) implies that governments, in common with firms, build adaptive capacity through their deployment of flexible policy instruments and institutional learning - an observation which recasts resilience as an economic and governance capability.

The comparative analysis of the EU and US responses to post-COVID supply chain vulnerabilities across semiconductors, medical supplies, and EV batteries reveals an evolving but asymmetric industrial policy convergence. While both sides are increasingly aligned in their strategic diagnosis - namely, the need to bolster resilience, reduce dependencies, and reassert technological sovereignty - their institutional pathways, funding models, and degrees of coordination vary widely (Table 4).

Table 4. Comparison of the EU and US Approach to the Three Sectors

Sector	**Strategic Framing**	**Governance Model**	**Funding Mechanism**	**Degree of Transatlantic Cooperation**
Semiconductors	Tech sovereignty & security	US: Centralized; EU: Hybrid	Direct subsidies (US); Co - financing (EU)	Medium (TTC Semiconductor WG)
Medical Supplies	Public health resilience	US: Federalized; EU: National with HERA	Strategic stockpiling & contracts	Low (Ad hoc; limited institutional linkages)
EVs & Batteries	Climate goals + green industry	US: Federal tax system; EU: Mixed subsidy networks	Tax credits (US); IPCEIs & EBA (EU)	Low - Medium (Clean Tech Dialogue, IRA talks)

Source: The author

Across all three sectors, both the EU and the US are re-establishing the industrial policy as a legitimate economic tool. This marks a major departure from the neoliberal consensus that shaped the transatlantic economic policy since the 1990s. The shared willingness to deploy subsidies, regulatory flexibility, and strategic public - private partnerships suggests a paradigm shift toward active state intervention, especially in sectors with geopolitical saliency.

However, the EU's model of "strategic autonomy" diverges from the US model of "economic security." Although both involve reshoring and domestic investment, the EU's focus is predominantly on resilience through diversification and open strategic autonomy, whereas the US takes a more national security - oriented approach, especially in semiconductors and clean tech (Schneider and Petsinger, 2021).

This divergence has tangible policy consequences. The US tends to act more rapidly and decisively, due to its centralized governance and discretionary spending authority. In contrast, the EU's efforts are often slowed by institutional complexity, fiscal fragmentation, and competition rules - although the Green Deal Industrial Plan and the new state aid frameworks are gradually narrowing this gap.

A second insight concerns policy instruments and institutional capacity. The US has leveraged its federal fiscal tools to deploy vast subsidies - e.g., under the CHIPS Act and the IRA - with clear eligibility criteria and implementation timelines. The EU, constrained by limited centralized budgetary power, has instead pursued regulatory levers (e.g., CRMA, Net - Zero Industry Act), co - financing models (e.g., IPCEIs), and strategic alliances (e.g., EBA, HERA). This has led to asymmetries in the speed of implementation. For instance, the U.S. semiconductor fabs have moved further faster than their EU equivalents, due to quicker permitting and direct subsidies. Also, battery production in the U.S. has had stronger cost incentives through tax incentives under the IRA's tax system, whereas the EU initiatives rely on state-level co-investment dominated by projects and on the European's Commission approval.

In addition, the U.S. SNS turned out to be faster in stockpiling than the fragmented national systems of the EU at the time of the COVID, although HERA now plays a centralizing role. However, the EU's approach arguably promotes more extensive long-term coordination as IPCEIs and alliances, such as the EBA, institutionalize cross-border cooperation and shared governance.

Despite significant strategic alignment, transatlantic coordination remains sector - specific, reactive, and loosely institutionalized. The TTC represents a valuable platform, especially in semiconductors, but cooperation on medical supplies and EV batteries remains underdeveloped. Even in semiconductors - where the TTC's Semiconductor Working Group exists - joint investments, R&D, and standard - setting are still in early stages.

Limited coordination is attributed to: national interest prioritization (e.g., "Buy American" provisions, EU competition over national champions); regulatory incompatibility (e.g., differing standards, permitting processes, labor laws); competition for subsidies (esp. in green tech, where the IRA was perceived in Europe as distorting trade) and incompatibilities of institutional capacity (e.g., the EU's balance between supra-national goals and national competencies).

Recent empirical evidence is consistent with the concern that subsidies can transform the entire supply chains. Navarra (2023) finds that corporate subsidies in the US not only create advantages at the firm level but that there are also important international spillovers among connected industries through higher exports and additional employment. This underlines why transatlantic subsidy races risk redistributing these benefits unevenly, heightening the need for transparency and coordination. The cases explored highlight a paradox: transatlantic industrial strategies are converging in their degree of ambition, but could be diverging in their delivery. This divergence might undermine the benefits of economic integration and strategic interdependence in the long run, especially if the competition for subsidies, investment or market access intensifies.

These strains are not, however, inherent. Common experiences from the COVID-19 pandemic and the war in Ukraine have reset the transatlantic economic priorities, allowing scope for a closer alignment. What used to be a taboo industrial policy has increasingly become a shared policy space. The climate transition challenges, technological leadership, and public health preparedness call for trusted partnerships. In this regard, the EU and US remain each other's most natural allies.

Three strategic changes are necessary to exploit this opportunity. First, institutional deepening is crucial: the Trade and Technology Council and related fora should be upgraded to permanent, well-resourced institutions, with wide cross-sectoral mandates. Normative alignment on these core principles, such as transparency, reciprocity, and sustainability also could de-escalate trade frictions and maintain some policy space for innovation. Finally, joint industrial foresight should be established, with regular scenario planning, stress tests, and supply chain mapping to identify shared risks and enable coordinated mitigation strategies.

6.2. Policy Recommendations For EU - US Collaboration

The comparative case study of semiconductors, medical supplies, and EV batteries shows that the trajectory of future trans-Atlantic trade lies in coordinated resilience, not frictional decoupling. If the EU and US are able to coordinate their approaches, while not surrendering national prerogatives, they can lead the global transition toward secure, sustainable, and inclusive supply chains.

The two sides could do this by institutionalizing a standing industrial policy dialogue. A committed TTC Industrial Resilience Forum could bring together senior officials, industry representatives, and experts working together to coordinate sectoral strategies, develop supply chain mapping, and connect investment plans. Within such a framework, working groups on health security, battery value chains, and critical technologies other than semiconductors could be envisaged.

A second priority is to align green and strategic subsidies. A transatlantic "green subsidy code," modeled on the OECD Export Credit Arrangement, would help promote transparency, prevent distortions, and encourage reciprocity in climate-related industrial incentives. Better cooperation between EU and US regulators in designing subsidy programs would reduce the risk of cross-border distortions and encourage a greater confidence in investment decisions.

Cooperation in research, innovation, and the development of skills could also be strengthened. Leveraging funding mechanisms, such as Horizon Europe–DOE partnerships, would accelerate the development of advanced semiconductors, next-generation vaccines, and solid-state batteries. A Transatlantic Talent Mobility Scheme, meanwhile, would allow for the exchange of engineers, scientists, and other skilled workers so as to build the innovation ecosystems on both sides.

Another move is to enhance regulatory interoperability. Closer collaboration between the FDA and EMA, ECHA and EPA, and relevant transport and energy regulators could facilitate smoother approval and greater mutual recognition. Aligning standards and certification schemes for sustainable products, like those for cleaner vehicles, recycled materials, and green manufacturing processes, could lower friction and accelerate common goals.

Health security and supply chain crisis mechanisms could also be reinforced. Formal EU–US coordination procedures for future health emergencies, such as joint procurement planning, data sharing, and interoperable stockpiling arrangements, are necessary. Joint stress-testing exercises applied to supply chains for strategic goods, from PPE to APIs and diagnostics, would develop readiness and resilience.

Co-investment in 'strategic infrastructure' and monitoring tools is set to be another key collaboration pillar. A common, digital supply chain dashboard under the TTC could share real-time information about vulnerabilities, chokepoints, and risk exposure. Shared investments in infrastructure, like semiconductor R&D hubs, battery testing labs, and climate technology accelerators, would make the transatlantic bloc a leader in critical industries.

In addition, the EU and US could further coordinate their third-country partnerships. Harmonizing approaches to friendshoring and supply chain diversification in the Global South would promote common engagement for sustainability, transparency, and labor rights. This programmatic approach to partnering (f.e into joint frameworks with states such as India, Brazil, and Vietnam) could could integrate these countries into strategic raw material and technology ecosystems in ways that benefit all sides. To this economic argument, the geopolitical argument is also added. As McNamara (2023) argues, the EU's new industrial activism reflects not only crisis-driven pragmatism but also a broader strategic reorientation, positioning industrial policy as a tool of geopolitical influence. Framing EU-US cooperation within this lens highlights that transatlantic governance must balance economic efficiency with strategic alignment in an era of systemic rivalry.

7. CONCLUSION

The post - COVID period marked a strategic shift towards supply chain autonomy. The transatlantic partnerships are strongest in high-tech industries and weakest in health. There is much scope for improving cooperation – notably in regulatory convergence, procurement, and coordinated industrial policy. Additional research can be done on implementation frameworks and new industries, such as AI hardware and critical minerals.

The COVID - 19 pandemic marked a turning point in global economic governance by revealing the fragility of highly interdependent supply chains. As this paper has shown through the case studies of semiconductors, medical equipment, and electric vehicle batteries, the EU and US both reacted with proactive industrial strategies to ensure access to critical goods and to build economic resilience.

While the underlying motivations - ranging from health security to technological sovereignty and climate transition - are broadly aligned, their implementation diverges significantly in institutional form, policy instruments, and political economy. The United States has embraced centralized, subsidy - driven interventions, enabled by the CHIPS and Science Act and the Inflation Reduction Act, and supported by expansive federal capacities. In contrast, the European Union's approach is more decentralized, combining supranational coordination (e.g., via HERA or the European Battery Alliance) with Member State initiatives, co - financing instruments (e.g., IPCEIs), and regulatory frameworks (e.g., CRMA, Net - Zero Industry Act).

Despite periodic frictions, particularly over subsidies and trade preferences, the transatlantic economic relationship has demonstrated a high degree of strategic convergence. Institutions like the Trade and Technology Council (TTC) have emerged as promising platforms for coordination. However, the current patchwork of dialogues, working groups, and bilateral agreements falls short of what is needed to support deep, long - term collaboration in the face of shared challenges such as climate change, geopolitical instability, and technological decoupling pressures.

The evidence from various sectors suggests that resilient transatlantic supply chains are needed and feasible, but that they also demand institutional innovation, normative alignment, and mutual confidence. To get beyond the convergence in rhetoric and into convergence in practices, new conditions for coordinated industrial policy are necessary.

The ability of transatlantic supply chains to withstand disruption may now be as important as the "end-product" it brings to market as we enter a time in the global economy when real political friction and environmental urgency are more in plain sight. Although obstacles remain - subsidy coordination, asymmetries in governance, and so on - the opportunity to frame a new model of collaborative industrial policy is within reach.

All of this can be achieved by capitalizing on transparency, shared foresight, and mutual advantage to chart a course affirming economic security over vulnerability, strategic autonomy over unilateralism, and technology leadership over exclusion.

This study has several limitations which should be considered in the context of interpreting its results. First, the study has a qualitative document-based design with secondary data and policy sources as a base rather than primary fieldwork or quantitative indicators. While permitting detailed context analysis, this approach restricts the possibility of statistical generalization. Second, the sectoral frame of semiconductors, medical supplies, and EVs/batteries only represent a part of the essential industries, and dynamics might not be representative for other sectors like digital infrastructure, critical minerals, or renewable energy.Third, the time frame (2020–2024) includes the early post-pandemic period when policies and responses were still evolving. As such, the results capture a moment in time rather than being indicative in the long run.The limitations in this study could be addressed by mixed method designs, broader sectoral coverage, and tracking policy processes over time in future studies.

Future research could expand beyond semiconductors, health, and EV batteries to examine other strategic sectors such as critical minerals, AI hardware, and renewable energy infrastructure. Important directions to explore involve trade-offs between reshoring and diversification, development of metrics of resilience, and the labor and skills dimension of supply chain transformation. Other studies should also investigate the institutional capabilities of the TTC as well as the risk of subsidy competition and the geopolitical spillovers with third countries, especially to the Global South. Finally, a more richer research agenda would link industrial policy with sustainability, inclusivity, and long-term transatlantic competitiveness.

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