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# Semiconductors in EU–Taiwan Relations: Bridging Gaps, Building Trust

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As of spring 2026, Taiwan’s strategic centrality to the global economy is being both reinforced and redefined. The island has emerged as the indispensable manufacturing hub for the infrastructure underpinning the artificial intelligence (AI) revolution, driving an extraordinary boom in Taiwan’s economy—GDP growth exceeded 8 percent in 2025. After decades of being driven primarily by consumer electronics, Taiwan’s semiconductor sector is now deeply embedded in the build-out of strategic projects in the United States, with major implications for AI adoption in the military domain.

However, the industrial and technological relationship between the EU and Taiwan remains largely peripheral to Taiwan’s emergence as a strategically central player in AI infrastructure. Even so, as Taiwan moves to consolidate its central position in manufacturing for the AI revolution, EU–Taiwan relations in the semiconductor sector are evolving beyond the traditional model relying on European innovation and Taiwanese industrial scale toward a more strategic partnership shaped by economic security, supply chain resilience, and de-risking from China. Major investments such as TSMC’s €10 billion ESMC project in Dresden, alongside initiatives by Foxconn and GlobalWafers, reflect Taiwan’s growing engagement with Europe, while the EU is seeking to strengthen its own semiconductor ecosystem through the EU Chips Act. Nevertheless, significant hesitation remains on both sides, driven by European caution over perceived risks related to China on the one hand and Taiwanese skepticism about Europe’s business environment on the other.

Although deeper cooperation is attractive for both sides—and is already occurring to some extent—it remains genuinely challenging. Drawing on forty

interviews with Taiwanese and European semiconductor stakeholders, as well as insights from CHIPDIPLO's EU-Taiwan industry dialogue held on the sidelines of SEMICON Europa 2025 in Munich, this paper examines current trade and investment dynamics in EU-Taiwan semiconductor relations and puts forward a series of policy recommendations for the EU. It argues that Europe should adopt measured expectations, improve coordination of its engagement with Taiwan at the EU level, and address both Taiwanese misperceptions and more structural concerns related to Europe's competitiveness and business environment in order to advance deeper cooperation on technology, industry, and economic security with Taiwan.

## **EU-TAIWAN SEMICONDUCTOR TRADE AND INVESTMENT TRENDS IN A SHIFTING GLOBAL CONTEXT**

Relations between the EU and Taiwan in the semiconductor sector are increasingly shaped by Taiwan's structural reorientation toward the United States and other global partners, even as Taiwan's ties with Europe have intensified since the early 2020s. EU-Taiwan interactions are on an upward trajectory, with bilateral trade reaching €71.9 billion in 2024, making the EU Taiwan's fourth-largest trading partner. Semiconductors play a central role in this relationship, accounting for roughly 23 percent of Taiwanese exports to the EU in 2024, while Europe remains an important supplier of high-end machinery and materials. However, unlike the United States, Europe has not experienced an AI-driven surge in demand, leaving the EU-Taiwan trade balance relatively stable but structurally asymmetric. The EU is the largest source of FDI in Taiwan, but Taiwanese investment in Europe—though growing rapidly and increasingly through strategic projects such as those initiated by TSMC in Dresden, Foxconn in France, and GlobalWafers in Italy—remains limited relative to its potential.

Historically, EU-Taiwan semiconductor relations have been anchored in European firms embedded within TSMC's supply chain, particularly in critical equipment

and materials. Companies such as ASML, Air Liquide, and Merck have become deeply integrated into Taiwan's semiconductor ecosystem, evolving from suppliers into on-site industrial partners. ASML provides indispensable extreme ultraviolet (EUV) lithography systems, Air Liquide supplies ultra-pure industrial gases through extensive local infrastructure, and Merck produces advanced chemicals that are increasingly manufactured directly in Taiwan. This reflects a broader shift in which European technological inputs are now embedded within Taiwan's rapidly expanding AI-driven manufacturing base while simultaneously being deployed in TSMC's global expansion projects in the United States and Japan.

TSMC's internationalization has transformed EU-Taiwan relations from a Taiwan-centric production model into a multi-regional industrial ecosystem. While Europe's first major engagement with TSMC dates back to the Crolles2 Alliance in the early 2000s, which has left some bitter memories in Europe, today's cooperation is far more structural, exemplified by the €10 billion ESMC fab in Dresden. This joint venture with Bosch, Infineon, and NXP marks a reversal of roles: TSMC now returns to Europe as the global industry leader rather than serving as a junior technology partner. The project is also catalyzing a broader "Silicon Saxony" ecosystem, attracting Taiwanese suppliers and linking Germany with emerging semiconductor nodes in the Czech Republic and Poland to form a regional ICT triangle.

Beyond Germany, Taiwan is gradually expanding its industrial footprint across Europe. GlobalWafers is expanding wafer production in Italy, Foxconn is entering advanced packaging in France, and multiple Taiwanese firms are establishing a presence in Central and Eastern Europe. The Czech Republic, Poland, and Slovakia are emerging as important partners for Taiwan, with cooperation supported by government-backed research centers, talent programs, and supplier localization strategies. Lithuania represents a more politically driven but less commercially successful case, where semiconductor cooperation has been constrained by limited execution capacity, talent bottlenecks, and a political approach not supported by the private sector.

Despite this expansion of the EU-Taiwan semiconductor relationship, structural constraints remain significant. In Dresden, TSMC faces challenges related to talent shortages, infrastructure adaptation, and ecosystem localization, while European suppliers must meet the demanding certification requirements of TSMC's tightly controlled production model. More broadly, European fragmentation, regulatory complexity, and concerns about China's potential reactions to normal business interactions with Taiwan—concerns that are often exaggerated—continue to limit the scale and coherence of EU engagement. Europe is also frequently overlooked or misinterpreted in Taiwanese boardroom discussions.

Overall, EU-Taiwan semiconductor relations are entering a new phase of deeper but uneven integration. The relationship is no longer defined solely by trade flows or supplier linkages but increasingly by the gradual deepening of a partnership shaped by economic security and supply chain resilience, as well as by new opportunities arising from shifting market and innovation dynamics. However, this emerging partnership remains fragile, constrained by asymmetries in expectations, scale, strategic priorities, modes of cooperation, and institutional coordination.

## TOWARD A REALISTIC PATH OF DEEPENED COOPERATION

Despite growing semiconductor trade and investment ties, Europe is still viewed in Taiwan as a less attractive and more complex environment than the United States or Japan due to slower growth, cultural differences, regulatory fragmentation, high energy costs, and bureaucratic complexity. These perceptions are reinforced by Europe's relatively limited market pull in the AI chip boom. However, there is a clear shift in dynamics: political support for diversification is growing on both sides, and Europe's industrial strengths in the automotive, aerospace, and medical technology sectors, alongside emerging opportunities in silicon photonics, drones, and AI infrastructure, are creating new avenues for cooperation with Taiwan. In parallel, Europe's

policy push to expand demand for advanced chips, many of which will continue to be produced in Taiwan, strengthens the case for deeper industrial partnership. To secure a credible path forward, the paper therefore outlines the following set of targeted recommendations for the European Union:

### 1. Seize the opportunities created by TSMC's strategic transformation

TSMC's transformation from a consumer-electronics foundry into a central infrastructure player in the global AI semiconductor ecosystem makes its presence in Europe strategically significant and the success of the Dresden project a Europe-wide priority. Rather than focusing primarily on financial incentives, the EU should prioritize ensuring the long-term attractiveness of Dresden by addressing the core determinants of TSMC's investment decisions: land availability, energy costs and reliability, water management, talent pipelines, and administrative efficiency. The experience of Japan's Kumamoto project shows that large-scale semiconductor investment depends less on subsidies than on a coherent ecosystem of public support, streamlined governance, and enabling infrastructure. If Europe can deliver these conditions in Dresden, it will not only anchor TSMC's most advanced manufacturing footprint in Europe but also strengthen the continent's position within TSMC's global production network.

### 2. Recalibrate and scale up research cooperation

EU-Taiwan R&D cooperation is dynamic but remains constrained by fragmentation on the European side and limited access for Taiwanese actors to EU funding frameworks. Taiwan operates through centralized and strategically coordinated mechanisms, while Europe relies on a patchwork

of national initiatives. A more structured and scalable approach, building on instruments such as Horizon Europe and the Eureka Network, is needed to enable Europe to present a coherent interface and develop targeted, outcome-driven collaborations aligned with industrial needs.

### **3. Improve conditions to facilitate EU-Taiwan joint investment**

Taiwanese private capital has historically shown limited engagement with Europe due to perceptions of low growth and regulatory complexity. However, recent investments and shifting geopolitical conditions are creating new incentives for diversification. Building on early successes, the EU should support the creation of joint semiconductor investment vehicles linking European and Taiwanese actors at both Member State and EU levels to channel capital into strategic sectors.

### **4. Strengthen downstream supply chain integration**

Europe's anticipated expansion of its AI infrastructure, including data centers, should create opportunities for Taiwanese firms across the value chain. However, the absence of a coordinated European strategy risks limiting the continent to a role as an end market rather than a production base. Developing a coherent ecosystem for data center construction and advanced manufacturing, alongside the potential introduction of a "trusted supplier" framework, would help anchor Taiwanese investment and deepen industrial integration.

### **5. Enhance talent and workforce cooperation**

Both Europe and Taiwan face acute talent shortages, and existing cooperation mechanisms remain limited in scale and effectiveness. Europe must strengthen its attractiveness to Taiwanese talent while expanding joint training, academic partnerships, and mobility programs. Large-scale, industry-linked initiatives, inspired by international best practices, could help build a sustainable talent pipeline and reinforce long-term cooperation.

### **6. Send clearer market signals regarding demand projections**

The absence of clear and credible demand projections for AI chips in Europe limits investment decisions by global semiconductor players. By articulating long-term demand outlooks, particularly in relation to AI infrastructure, the European Commission can provide the visibility needed to attract investment and support the development of a competitive ecosystem.

### **7. Cooperate on foundational chips through demand-side policies**

China's rapid expansion in mature-node semiconductor capacity is reshaping global markets and creating dependency risks for Europe. While trade defense measures have limitations, the EU and Taiwan can cooperate by shaping demand around criteria such as trustworthiness and resilience. The development of procurement frameworks and a potential "trusted supplier" label would strengthen the EU's economic security.

### **8. Address fragmentation in engaging with Taiwan's semiconductor ecosystem**

European engagement with Taiwan remains fragmented, often resulting in intra-European competition rather than coordinated outreach. Strengthening the EU-Taiwan Trade and Investment Dialogue, improving internal coordination, and developing a more structured interface with key Taiwanese institutions, for instance through posting a dedicated DG CONNECT representative at the European Economic and Trade Office in Taipei, would enhance the effectiveness of cooperation.

### **9. Overcome ambiguous signaling regarding China de-risking**

Geopolitics remains a key constraint to deepened EU-Taiwan relations. Despite shared de-risking narratives, Taiwanese stakeholders view EU messaging on China as inconsistent, unclear, and weakened by internal divisions and corporate decisions. This ambiguity, combined with Europe's cautious stance in US-China competition, undermines confidence that closer cooperation with the EU will bring long-term and stable strategic returns. Addressing this does not require changing the One China policy but rather improving coherence, consistency, and predictability in Europe's de-risking approach.

Taken together, these measures highlight a realistic path for deeper EU-Taiwan semiconductor cooperation, one that takes into consideration perceptions, misperceptions, market and innovation dynamics, as well as the geopolitical environment.

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