KOREA HOLDS THE OPPORTUNITY TO REINFORCE U.S. AND EUROPEAN SUPPLY-CHAIN RESILIENCE

MID-SIZED INNOVATORS FROM KOREA ARE BECOMING THE TRUSTED BACKBONE OF A MORE DIVERSIFIED AND RESILIENT GLOBAL SUPPLY CHAIN. *By Daniel de Bomford, Quentin Lange*

The world has entered the second phase of supply-chain realignment, one defined not by isolation, but by curation. After years of political momentum behind reshoring and "local production only," the data now offers a sobering reality check. According to the OECD's new Supply Chain Resilience Review, aggressive reshoring and localisation could shrink global trade by nearly 18 percent.

Yet geopolitical pressures have made dependence on single-country production hubs untenable. China's tightening of rare-earth export controls only sharpens the point: concentrated dependencies have become geopolitical levers. The West cannot remain heavily reliant on China, but nor can it realistically rebuild entire value chains at home. It needs a coalition of credible, capable, politically aligned partners.

That is where South Korea steps in, not as a fallback, but as a linchpin.

Korea as a Strategic Ally in the Materials Sector

South Korea is a textbook example of "ally-based resilience": globally integrated, technologically sophisticated, aligned with U.S. and EU economic-security priorities, and competitively positioned to make diversification achievable.

Korean companies' "strength is precision customization at speed."

Seunghun Lee, CEO of YC Chem

Few companies embody this better than Korea Zinc, one of the world's most advanced custom smelters. Chairman Yun B. Choi describes the new landscape succinctly: global tariffs and policy shifts are "accelerating the re-routing of supply chains toward friendly countries," while economies like the U.S. now have a "clear need for diversified processing facilities."

Korea Zinc does not own mines; instead, it sources concentrates globally and competes in metals where a handful of countries, often dominated by China, control more than half of global output. Its model of processing flexibility, operational excellence and open-market sourcing is precisely what allied nations require as they reduce exposure to single-country refining..

18 percent possible decline in global trade if supply chains are relocalised.

Source: OECD Supply Chain Resilience Review

This capability extends across the full spectrum of industrial materials. The smaller supplier of high-spec structural and line pipes, Hanjin Steel Pipe, sources globally across solar infrastructure, construction and industrial plants. A trusted supplier of critical steel components becomes a strategic risk mitigator.

Together, Korea Zinc and Hanjin illustrate what "ally-based resilience" looks like in practice: globalisation redesigned through trusted ecosystems.

Semiconductors: Korean SMEs as the "Second Layer" of Chip Resilience

In the most scrutinised strategic industry of the century, the rush to build fabs in the U.S. and Europe obscures a simple truth: you can relocate facilities, but you cannot instantly recreate supply chains.

This is why Korean semiconductor SMEs have become the "second layer" of global chip resilience. They bridge the gap between what Western governments want, secure, diversified semiconductor capacity, and what is technically achievable in the near term. They offer not just components or services, but an operational logic shaped by decades of localisation and performance demands from Korea's world-leading chip makers.

Korea's equipment makers, Viatron, S.E.A., SEMICS and its materials specialists such as YC Chem sit at the heart of this shift. They provide technologies that are increasingly strategic in the AI-chip race, where thermal management, advanced packaging and high-throughput testing matter as much as transistor scaling itself.

Across this ecosystem, one common thread stands out, well expressed by Dr. Seunghun Lee, President of YC Chem: "Our strength is precision customization at speed." YC Chem has been central to building resilience in South Korea's semiconductor chemical supply chain, localising critical materials such as photoresist rinses previously sourced abroad.

Meanwhile, infrastructure specialists like Shinsung E&G provide the invisible architecture behind the fabs themselves. With more than 50 years of experience designing cleanrooms, dry rooms, HVAC systems and utility lines for Korea's top semiconductor and battery makers, Shinsung now engineers smart, energy-efficient fab environments.

A Broader Look at the Peninsula's Technological Prowess

South Korea's essential technological contributions do not stop at metals or semiconductors.

Samhyun has evolved into a global motion-systems specialist for electric vehicles, industrial robots and advanced air mobility. "Our strength lies in integrating motors, reducers and controllers to create complete motion systems," says President Ki Won Park.

Similarly, Wooriro is a photonics solutions leader whose chips sit at the heart of 5G networks, AI data centers and the emerging quantum communication. Holding roughly 60 percent of the global SPAD sensor market, its ambition, as President Eugene Park states, is "to become a total solutions provider in the quantum technology sector."

By 2026, the defining metric of global economic strategy will not be how much production countries have reshored, but how effectively they have built and integrated allied ecosystems. In this emerging architecture, South Korea stands out as both a technological anchor and a strategic amplifier.