

STRENGTHENING THE GLOBAL SEMICONDUCTOR SUPPLY CHAIN IN AN UNCERTAIN ERA

SIA/BCG Report: While geographic specialization has promoted innovation and kept costs low for consumers, it has also created supply chain risks that should be addressed through government incentives to boost domestic chip production

"These chips are a wonder of innovation and design that power so much of our country and enable so much of our modern lives.... We need to make sure these supply chains are secure and reliable."

*-President Biden
Feb. 24, 2021*



THE GLOBAL SEMICONDUCTOR SUPPLY CHAIN HAS SUPPORTED CONTINUOUS INNOVATION, BENEFITTED CONSUMERS, AND DELIVERED ENORMOUS VALUE

A hypothetical alternative with fully self-sufficient local supply chains in each region would require at least **\$1 trillion** in incremental upfront investment and result in a **35% to 65%** overall increase in semiconductor prices, ultimately resulting in higher costs of electronic devices for consumers.



GEOGRAPHIC SPECIALIZATION HAS CREATED VULNERABILITIES IN THE GLOBAL SEMICONDUCTOR SUPPLY CHAIN



- There are more than **50** points across the value chain where one region holds more than **65%** of the global market share.
- About **75%** of global semiconductor manufacturing capacity, for example, is concentrated in China and East Asia, a region significantly exposed to high seismic activity and geopolitical tensions.
- 100% of the world's most advanced (below 10 nanometers) semiconductor manufacturing capacity is currently located in Taiwan (**92%**) and South Korea (**8%**).

GOVERNMENT ACTION IS NEEDED TO ADDRESS VULNERABILITIES IN THE GLOBAL SEMICONDUCTOR SUPPLY CHAIN AND ENSURE ITS LONG-TERM STRENGTH AND RESILIENCE

To reduce the risk of major global supply disruptions, the U.S. government should enact market-driven incentive programs to achieve a more diversified geographic footprint. **A new \$50B federal incentive program will enable establishing a minimum viable capacity to cover the US consumption from critical applications.** The additional capacity from such incentives would, for example, enable the U.S. to meet domestic demand for advanced logic chips used in defense, aerospace, and critical infrastructure.

