Supply Chain Explorer

By the Emerging Technology Observatory

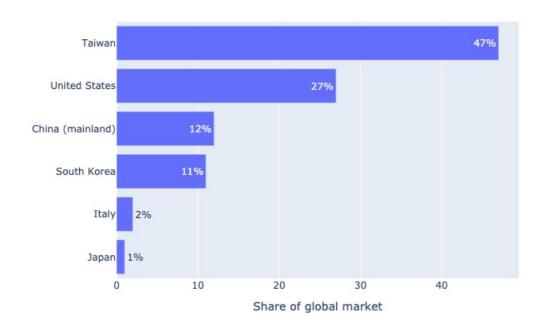
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Fabrication

Fabrication turns designs into chips. Semiconductor fabrication facilities ("fabs,") make chips in these wafers in two steps: forming transistors and other electrical devices in material layers within silicon wafers; and forming metal interconnects between the electrical devices in insulating layers above the silicon.

There are two business models for fabs: (1) fabs owned by integrated device manufacturers ("IDMs"), which manufacture chips based on their own designs; and (2) foundries, i.e., fabs operating independently and manufacturing chips for third-party customers. Firms headquartered in the United States, Taiwan, South Korea, Japan, and China control the vast majority of the world,Äôs fab market share and fab capacity-most of which is also physically located in these countries. Three firms - headquartered in the United States (Intel), Taiwan (TSMC), and South Korea (Samsung) - control virtually all of the world,Äôs advanced logic fab capacity, with the most cuttingedge fabs concentrated in Taiwan and South Korea.

Country provision



Notable supplier companies

- · GlobalFoundries United States
- Hua Hong China (mainland)
- Intel United States
- · Kioxia Japan
- · Microchip United States
- NXP Netherlands
- · Powerchip Taiwan

- Renesas (negligible market share) Japan
- SMIC China (mainland)
- STMicroelectronics Switzerland
- Samsung South Korea
- TSMC Taiwan
- UMC Taiwan