Technology sector

China blocks use of Intel and AMD chips in government computers

Microsoft's Windows and foreign database programs also sidelined as Beijing favours Chinese hardware and software

US President Joe Biden, centre, was given a tour of an Intel factory in Arizona on Wednesday by the chipmaker's chief executive Pat Gelsinger, left © AP

Ryan McMorrow and **Nian Liu** in Beijing and **Qianer Liu** in Hong Kong 8 HOURS AGO

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China has introduced new guidelines that will mean US microprocessors from Intel and AMD are phased out of government PCs and servers, as Beijing ramps up a campaign to replace foreign technology with homegrown solutions.

The stricter government procurement guidance also seeks to sideline Microsoft's Windows operating system and foreign-made database software in favour of domestic options. It runs alongside a parallel localisation drive under way in state-owned enterprises.

The latest purchasing rules represent China's most significant step yet to build up domestic substitutes for foreign technology and echo moves in the US as tensions increase between the two countries. Washington has imposed sanctions on a growing number of Chinese companies on national security grounds, legislated to encourage more tech to be produced in the US and blocked exports of advanced chips and related tools to China.

Officials have begun following the new PC, laptop and server guidelines this year, after they were unveiled with little fanfare by the finance ministry and the Ministry of Industry and Information Technology (MIIT) on December 26. They order government agencies and party organs above the township level to include criteria requiring "safe and reliable" processors and operating systems when making purchases.

On the same day in December, the state testing agency, China Information Technology Security Evaluation Center, published its first list of "safe and reliable" processors and operating systems, all from Chinese companies.

Among the 18 approved processors were chips from Huawei and state-backed group Phytium. Both are on Washington's export blacklist. Chinese processor makers are using a mixture of chip architectures including Intel's x86, Arm and homegrown ones, while operating systems are derived from open-source Linux software.

Beijing's procurement revamp is part of a national strategy for technological autarky in the military, government and state sectors that has become known as *xinchuang* or "IT application innovation".

The standards "are the first nationwide, detailed and clear instructions for the promotion of *xinchuang*", said a local government official managing IT system substitution.

State-owned enterprises were similarly told by their overseer, the State-owned Assets Supervision and Administration Commission, to complete a technology transition to domestic providers by 2027, according to two people briefed on the matter. Since last year, state groups have begun quarterly reporting on their progress in revamping their IT systems, though some foreign technology would be allowed to remain, the people said.

The state-led march away from foreign hardware will dent US companies in China, starting with the world's dominant PC processor makers, Intel and AMD. China was Intel's largest market last year, providing 27 per cent of its $54bn in sales and 15 per cent of AMD's $23bn in sales. Microsoft does not break out China sales but president Brad Smith last year told the US Congress that the country provided 1.5 per cent of revenues.

Microsoft and Intel declined to comment. AMD did not respond to a request for comment.

It may be difficult for Intel or AMD ever to make the list of approved processors. To be evaluated, companies must submit their products' complete R&D documentation and code. The top criteria for evaluation is the level of design, development and production completed within China, according to a notice from the state testing agency.

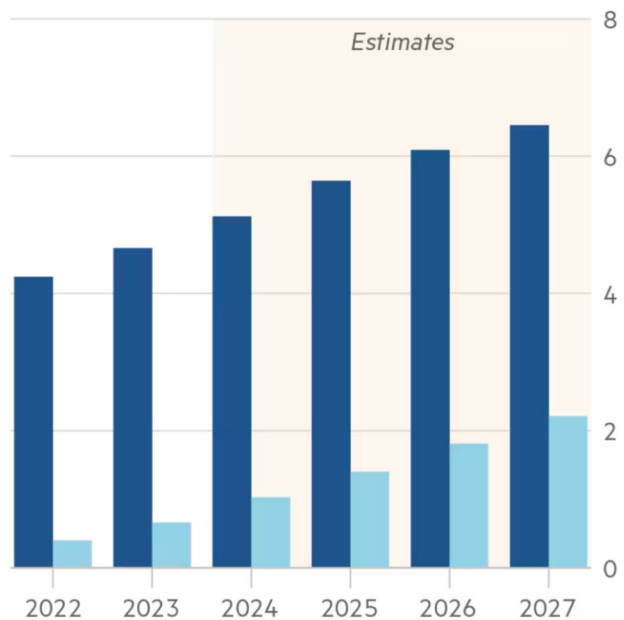## Analysts expect growth for Xinchuang PCs and servers

PC shipments (mn units)
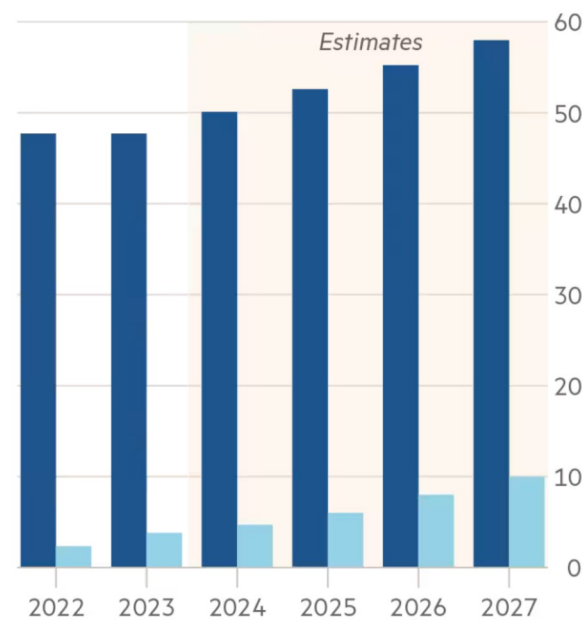
■ Total ■ Xinchuang

Server shipments (mn units)

■ Total ■ Xinchuang

Source: Guotai Junan Securities
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In recent months, provincial and city-level finance ministries have pushed out dozens of notices on the new guidance, trying to ensure compliance among thousands of purchasers. Two procurement officials who spoke to the Financial Times said some leeway remained to buy computers with foreign processors and Microsoft Windows.

One of the officials, based in Shenzhen, said they now needed to take an additional step to register and explain purchases of foreign processors. The central government purchasing office this month also said limited purchases of Intel- and AMD-powered computers could continue, provided departments "comply with relevant management procedures".

Lao Zhangcheng, in charge of purchasing 16 fully Chinese computers for an organisation under the Shaoxing city transport bureau, said his colleagues had no choice but to get used to domestic operating systems.

"We are replacing old computers that have foreign chips," Lao said. "After this purchase, basically everyone in the office will have a domestic computer. The old

purchase, basically everyone in the office will have a domestic computer. The old computers we have left with Windows systems can still be used under certain situations."

Lin Qingyuan, a chip expert at research group Bernstein, said substitution would progress faster for server processors than for PCs because of the more limited software ecosystem in need of replacement. He expected *xinchuang* servers to account for 23 per cent of total China server shipments in 2026.

"The purchasing guidance has made the *xinchuang* policy more actionable for officials," he added.

Analysts at Zheshang Securities estimate the country will need to invest Rmb660bn ($91bn) from 2023 to 2027 to replace the IT infrastructure in government, party organs and eight major industries.

China's finance ministry, the MIIT and China IT Security Evaluation Center did not respond to requests for comment.