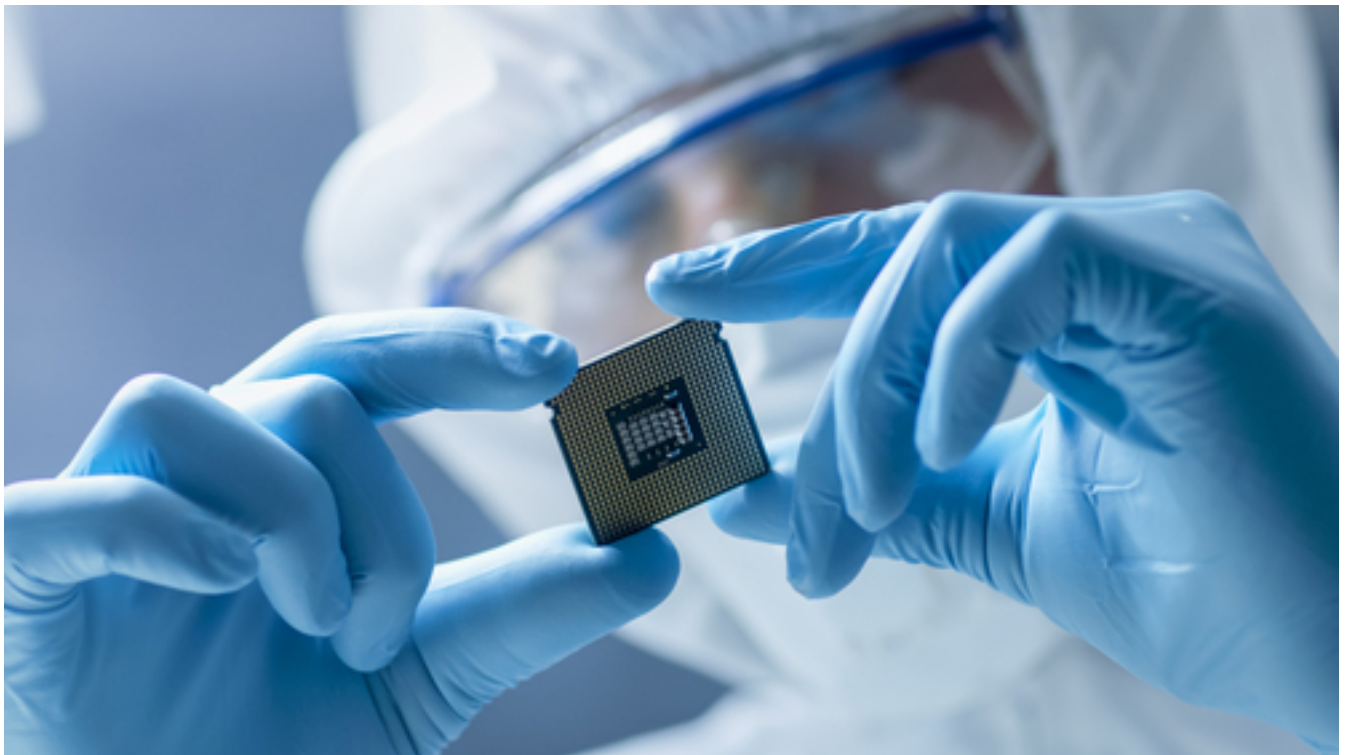




By: *Tomorrow's Affairs Staff*

# The unequal war for dominance in the hi-tech sector between the US and China



Chinese Prime Minister Li Qiang welcomed US Treasury Secretary Janet Yellen with the words that the relations between the two countries will be like the rainbow that appeared over Beijing: "after the storm, we will definitely see more rainbows".

This sugar-coated Chinese postcard scene might be the wishful thinking of the new second man in Beijing's hierarchy, but behind it rages a high-tech war.

As of August 1, China will begin implementing export restrictions on gallium and germanium, critical raw materials for making microchips.

It is a response to US restrictions on the export of technology and chip design from last October to deny China access and development of critical technologies.

High-level US-China meetings have become more frequent in recent weeks and resulted in announcements of new meetings between the two state administrations, easing political relations that have been virtually frozen since last February.

However, beneath this thaw, there is a cooling of relations regarding the central issues of interstate disputes - the restriction on trade of high technologies due to risks to national security.

Both countries have conflicts at that level. They have been punishing each other with restrictive measures, but the prospects for success are not equal.

## A double-edged sword

While worrying for semiconductor producers, China's new export restrictions on two critical

minerals, which will take effect from early August, do not appear to be as strong a response to US restrictions on technology exports.

As traditionally the largest global producer of rare metals and critical raw materials for the production of chips, China has been trying to weaponise its position.

China produces as much as 98% of gallium and about 70% of germanium, with US producers importing more than 50% of their needs from China.

The dependence is high, and it seems that the Chinese threat to restrict exports will bear fruit.

In the short term, it probably will. So far, China has not had much success in using similar strategies when it has tried to influence the market with administrative measures. Such decisions can be a double-edged sword.

China's dominance in the global market of rare metals is not nature-based. These metals are not rare in other regions, but their processing is expensive and often unprofitable. China just produces them at a low cost.

It is possible to increase their price on the market due to their limited export, which will be the case with the two minerals from August 1, and therefore there will be an increase in global production competition.

Customers will simply turn to other, new suppliers. A higher price will motivate them to produce, while the effects of Chinese restrictions will disappear.

The US already imports a fifth of its gallium needs from the UK and Germany, and more

than 30% of its germanium needs from Belgium and Germany, so a reorientation to those suppliers is just a matter of increasing orders.

It has been estimated that the Chinese restrictions will not stop at the export of only these two metals, provided that the US does not give in to the pressure of these measures.

However, the expansion of restrictions would also apply to other rare metals, but a similar market dynamic applies just as much to them as to gallium and germanium.

Reduced supply will increase prices and motivate non-Chinese producers to increase production, and the market will be in balance again - with China as the loser.

## China is dependent on US technology

The US restrictions have hit the Chinese high-tech industry hard, particularly the plans of the state and the Chinese Communist Party to base economic development in the coming years on the development of AI, super-computers and related technologies where China wants global dominance.

There is no adequate response to the US restrictive measures in China. Its gigantic annual chip imports of \$400 billion depend on US technologies.

The entire industry can only function with "US imports close to the facility that edge, there's U.S. tools, U.S. design software and U.S. intellectual property throughout the process", said Chris Miller of Tufts University and author

of the book Chip War.

China's prospects for success in this war against the US have been further reduced by the fact that Japan and the Netherlands, global leaders in the production of state-of-the-art chips, sided with the US and its restrictive measures regarding the export of sensitive technologies to China.

Last January, they accepted a request from Joe Biden's administration to apply similar restrictions to those of the US on the export of products, technology and tools for the production of the latest generation chips.

## No good option for Beijing

Yellen tried to comfort her hosts during her recent visit to Beijing, saying that the restrictions would not seriously affect the Chinese economy and that their effects concern "very narrow high technology areas".

But Beijing wants precisely those areas to be the bearers of its economic expansion and the proclaimed recovery of the economy after a three-year cooling-off due to the Covid-19 pandemic.

However, US restrictions will obviously not allow it. The dependence of the Chinese hi-tech industry on US technology is inevitable, and it is impossible to resist it with administrative measures banning the export of critical materials.

This leads to two unfavourable solutions for China - to abandon plans for global dominance in the high-tech sector, or renounce the use of imported (American) technologies for military purposes or purposes of technological supremacy over the West.

This is the key front line where there will be further talks on rapprochement between Washington and Beijing, but the players already seem unequal.