United States government's anti-China semiconductor strategy thrown into disarray by congressional budget cutting

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The recent "crisis" over the US debt limit has exposed the contradictions tearing apart the US state. Currently at stake is one of the Biden administration's flagship pieces of legislation, the CHIPS and Science Act, which aims to shift the vast semiconductor supply chain back inside the US in preparation for war with China.

The CHIPS Act provides roughly $280 billion in funding to create a domestic manufacturing capability for semiconductors, a crucial component in nearly every facet of the economy. However, $170 billion of that funding requires yearly appropriation by Congress and is thus subject to the new spending limits agreed upon by the Democrats and Republicans.

This money is split between the National Science Foundation and the Department of Energy, and is intended to fund workforce development, STEM education, and research and development over the next three years. Already funded is $52 billion in direct subsidies to chip manufacturers in exchange for beginning work on US-based foundries.

Even before the theater surrounding the debt ceiling, Congress had already declined to provide the full funding authorized by the CHIPS Act. For the 2023 fiscal year the NSF received $9.87 billion out of a maximum $11.9 billion, and the DoE received $8.1 billion out of a maximum $8.9 billion. With the new spending limits agreed to by the Democrats and Republicans, this shortfall is likely only to grow in the coming years.

While semiconductors are vitally important to the economy as a whole and the money authorized by the CHIPS Act is officially non-defense spending and thus subject to the new spending limits, the law is at its core a foreign policy measure aimed at China. The US ruling elite reacted with trade war measures to the CCP's "Made in China 2025" program, which aims to make China a center for manufacturing semiconductors and most other advanced technology products.

The US is also concerned that the dominance of Taiwan Semiconductor Manufacturing Company, which produces the bulk of the most advanced chips, poses an obstacle to its efforts to provoke a war with China. Almost any open military conflict in or around Taiwan would end the production of semiconductors on the island, with massive ramifications for the global economy. Washington is hoping to induce TSMC to move much of its production to the US, so it has a freer hand in turning Taiwan into a battlefield.

However, subsidies and tax breaks alone cannot run a factory, especially one working at the extreme levels of precision necessary to produce modern semiconductors. Washington and the chip companies confront a massive shortage of skilled labor as they attempt to create new production facilities. The obstacles to training enough workers to staff the facilities being planned already cast doubt on the effectiveness of the CHIPS Act. The unwillingness of Congress to fully fund the act only makes this problem nearly insurmountable.

Some members of Congress have called for the CHIPS Act to be fully funded, but they do so from the perspective of economic nationalism. The *New York Times* cites comments from Democratic California Representative Ro Khanna, who said, "To make America a manufacturing superpower, we have to have advances in technology. Technology has to be the driver of that because it requires massive increases in productivity." Representative Zoe Lofgren (D-

California) explicitly stated the act needed to be fully funded in order not to "cede the future to China."

The support of the Democratic Party, along with anti-China hawks in the Republican Party, for the CHIPS Act is an expression of the two parties' joint support for US militarism and trade war. Economic nationalism, which is shared by all sections of the capitalist class, is a key component of the preparation for military conflict with China.

Khanna, who was Bernie Sanders' 2020 campaign co-chair and who has the support of the Democratic Socialists of America, shows that this right-wing nationalism is also a central plank of the American pseudo-left and the trade unions. The latter have been engaged by the Biden administration as its instruments to keep workers in line behind its economic and foreign policy agenda.

The inability of the US to fund its scientific aspirations, even in service of key national security imperatives, is deeply rooted in its economic decline. The initial development of semiconductors as well as related technologies like lasers owed much to the large amounts of money the US government was able to pour into scientific research in the aftermath of World War II.

The importance of nuclear weapons to war planning led to massive investments in engineering and technology as well as basic research. Money was poured into not just particle physics, with the hope of creating more powerful bombs, but into guidance and delivery systems, command and control networks, and computer modeling of many natural phenomena including the weather.

This massive investment in science and technology had follow-on effects in the rest of society. Companies were eager to commercialize their research however they could, but it could not escape the broader dynamics of capitalist development. The economic crises of the 1970s led semiconductor manufacturing to move offshore in search of cheaper labor. The erosion of the vast economic trade and balance of payments surplus, its weakening global position, and the decline in funding for science and technology all played a part.

This new attitude toward science and research was epitomized by the 1993 cancellation of the Superconducting Super Collider, four years and $2 billion into construction. The SSC would have been a massive step forward in experimental particle physics, even compared to the Large Hadron Collider which came a decade later.

The cancellation came shortly after George H. W. Bush had promised that a so-called "peace dividend" resulting from the freeing up of vast sums that had previously been spent on military preparations against the Soviet Union would make such investments in science and infrastructure possible. Instead, the ensuing decade would see the dismantling of domestic programs, including spending on scientific research and education.

This decline has found its sharpest expression in the explosion of the COVID-19 pandemic. Governments throughout the world spent years ignoring the warnings of scientists while cutting funding for medical research and letting stockpiles of medical equipment run dry. The ignorance championed by the ruling elite has found noxious expression in agitation against necessary public health measures and the anti-vax movement.

The further development of semiconductors and computing technology more generally is critical for the advancement of society, but it cannot be carried forward under the nationalist framework of capitalism without the impetus of massive geopolitical conflict and imperialist war. Long gone are the days where investments in military preparedness would trickle down and benefit the rest of society (at an unconscionable cost). The development of science and technology can only be advanced by an internationally united working class which puts it to use for the good of all of humanity and not for the defense of the national capitalist state and the obscene privileges of a wealthy few.