

# China and the Geopolitics of Semiconductors

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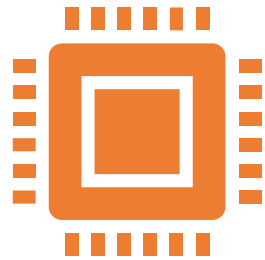
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# Geopolitics of chips



## Industrial advancement:

- New industrial revolution requires AI
- AI requires faster and more available chips
- Faster and more efficient design and testing processes enabled



## Military applications

- Networked sensors
- AI battlefield management
- Drone – manned pairing with AI



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- Chip production concentrated in Taiwan, South Korea and China
- Design concentrated in the US
- Lithography machines are a Dutch monopoly
- China throwing a lot of resources at the problem
  - Chinese tech considerably behind
- But it does not matter!



# Chip Imbalance



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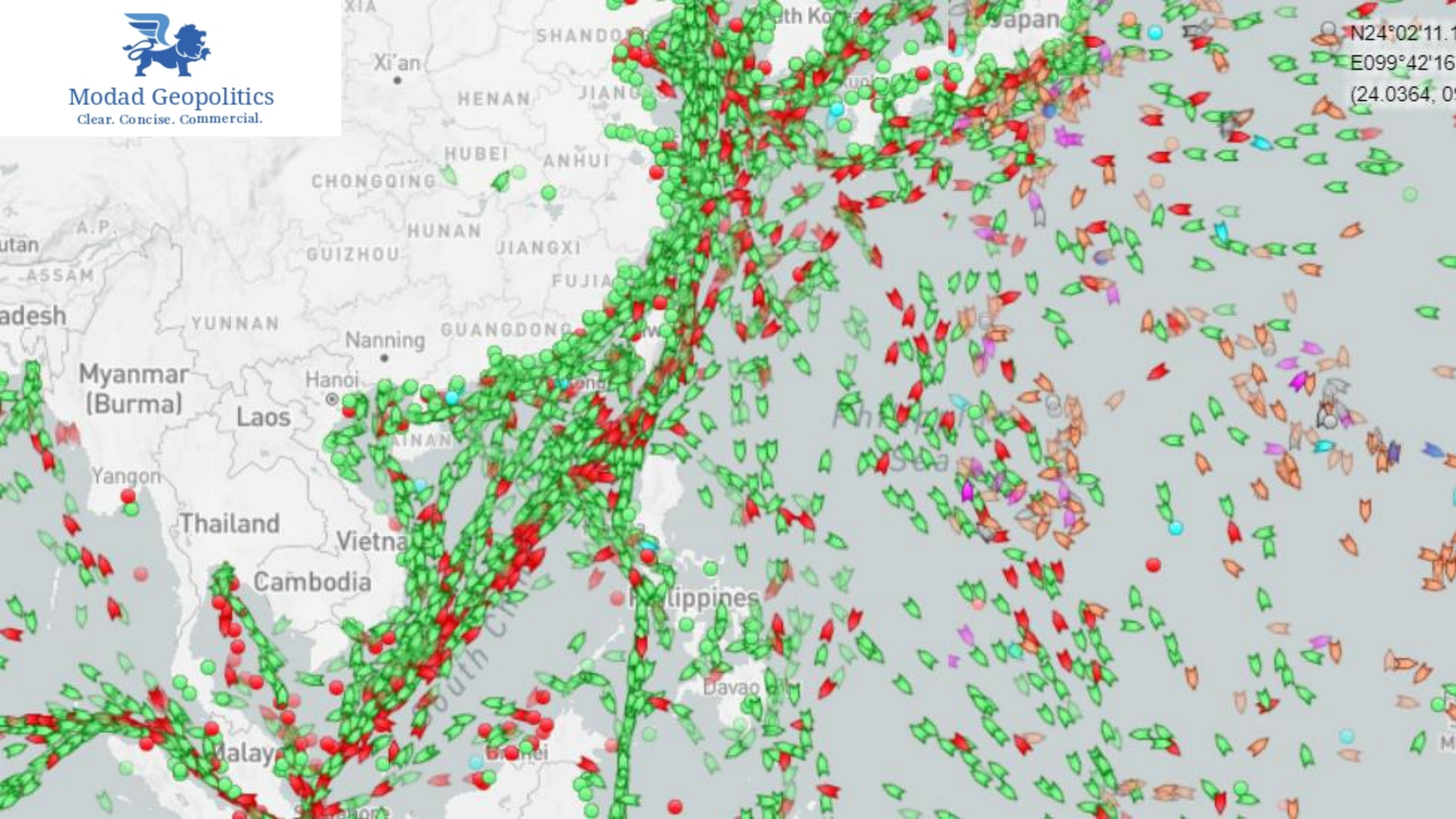


Why Taiwan matters



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# China's perception

- US set up to cut its supply routes
- Alliance being built to contain China, including SK, Japan, Philippines
- Taiwan as a giant US aircraft carrier
- US being duplicitous, claiming Taiwan is Chinese but also treating it as a sovereign state
- Acknowledgement: This is not to say China is right, or that the US does not have its own perception



An aerial photograph showing a vast fleet of cargo ships of various sizes and colors (red, blue, green, white) scattered across a deep blue sea. The ships are densely packed in some areas and more sparse in others, extending towards the horizon. The lighting suggests a clear day with some shadows on the water's surface.

## Limitations of pressuring China

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- Sanctions questionable
- Asian powers hedging
- China's options that impact supply chains
  - Rare Earths minerals
  - Manufacturing capacity
  - Ore smelting capacity
- Convinces China that this is a total conflict
- Effects may require 30 years!



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# China Is the World's Manufacturing Superpower

Top 10 countries by share of global manufacturing output in 2019\*



\* output measured on a value-added basis in current U.S. dollars

Source: United Nations Statistics Division



statista

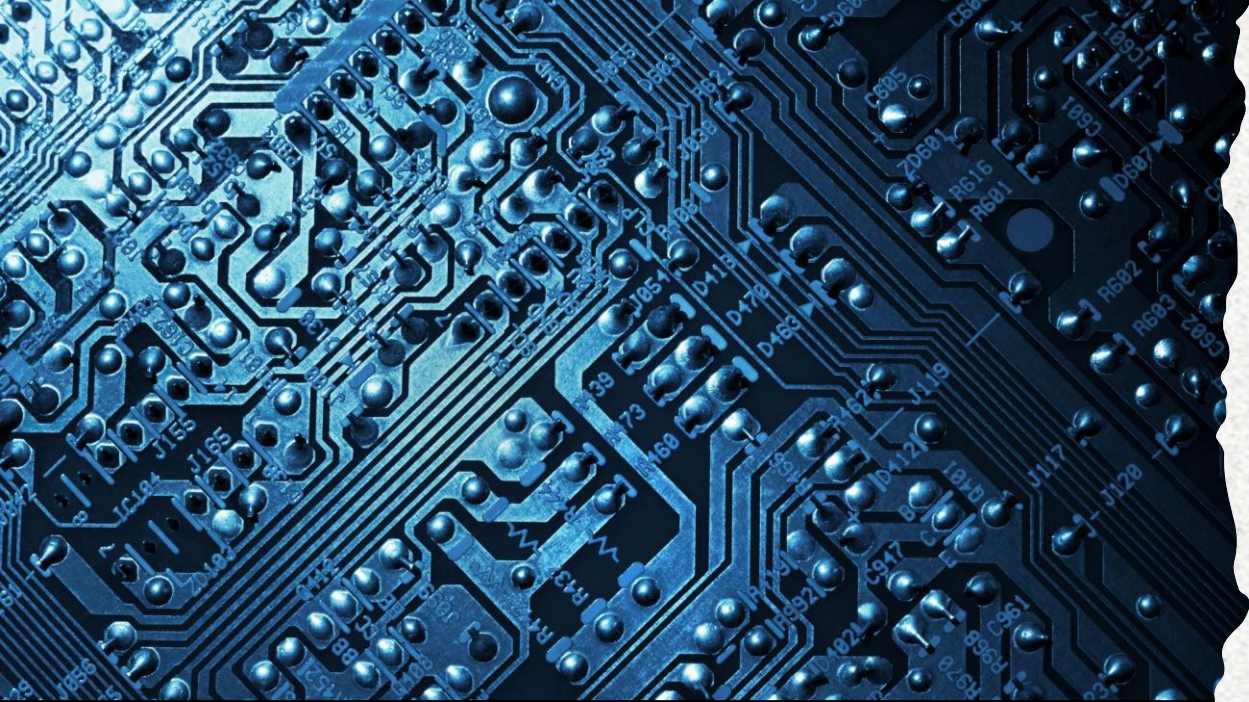


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## Understanding China's reaction

- Preference is for settlement with KMT
- Double down militarily
- Develop indigenous capability
- What if this goes military?
  - China – led coalition: Iran, Russia, Central Asia
  - Attempts to develop alternative maritime routes
  - Disrupt US – Asia trade
  - Destroy Taiwan's trade





# Chip Dilemma

- China is a huge chip market and manufacturing powerhouse
- The leadership positions in design and manufacturing are relatively unassailable
- China will get Taiwan one way or another
- Chip competition will intensify – the US will treat any potential adversaries and threats as it is treating China
- Countries need to onshore, but don't have the economies of scale, skills or technology to do so successfully.



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Thank you

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