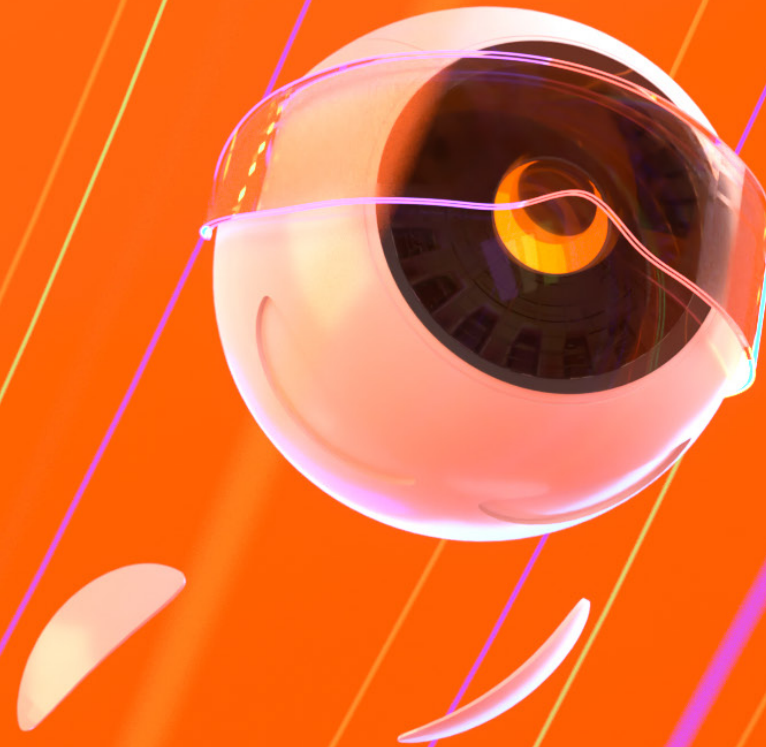


Investment Recipes

by  AtonRā Partners



SEMICONDUCTORS – IS CHINA READY NOW?

Little pain, lot to gain for the Chinese semis industry

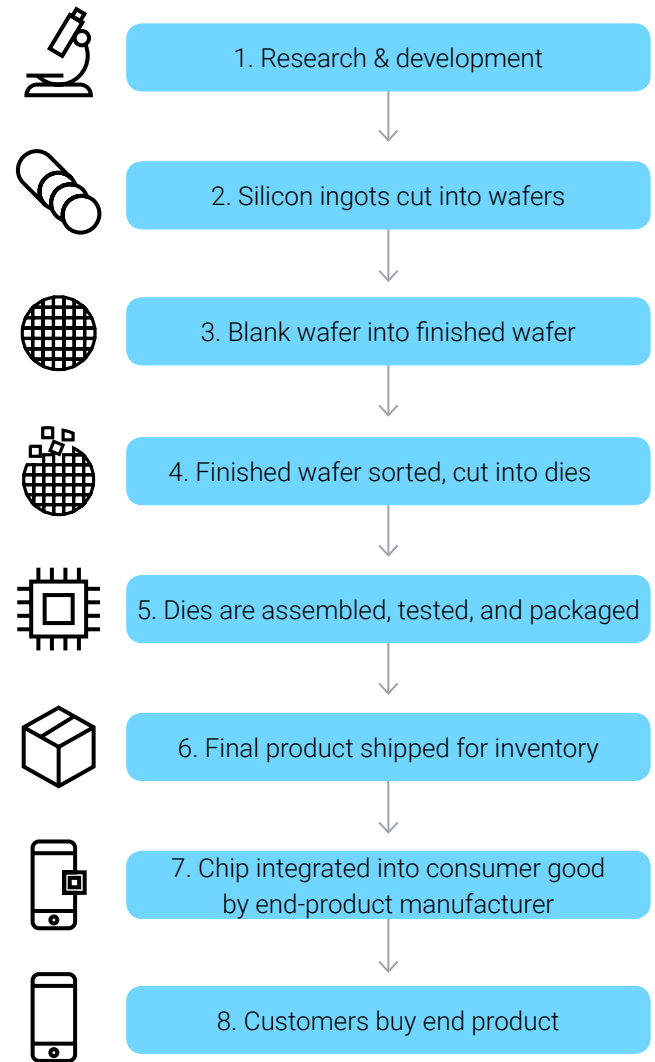
- In the last **Investment Recipes**, we presented our view on the economic decoupling of two tech giants, the U.S. and China. We concluded that:
 - China is **three to five** years behind.
 - The effect of this decoupling will have **wide-ranging repercussions**.
 - We keep a close eye to evaluate a **direct exposure** to Chinese names.
- In this issue, we put under our loupe the Chinese semiconductor industry.
- The **trade war** is having little or no impact at all on Chinese semiconductor economy, and actually more damages are suffered by U.S. semiconductor companies.
 - But it is creating tensions on the semiconductor **global value chain** as the **interdependence** of this industry is really tight. (see chart in the next page)
- We believe that the current situation, despite short-term negative impacts, will **accelerate the development of the Chinese semiconductor industry**.

SOURCES:

<https://www.scmp.com/economy/china-economy/article/3034434/chinas-canton-fair-highlights-changing-nature-nations>



East to west: an interconnected value chain

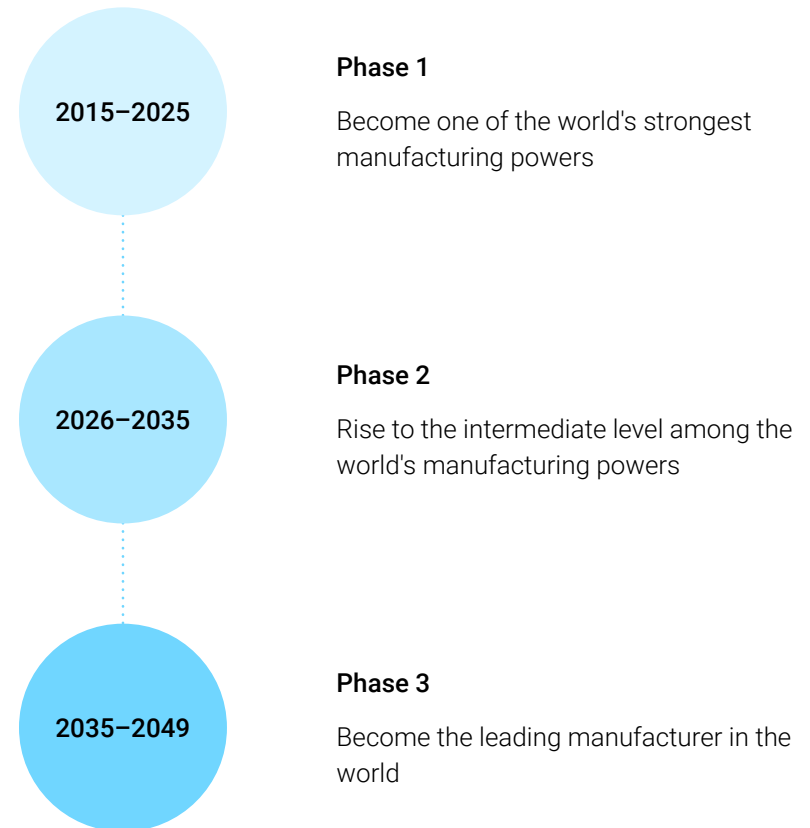


SOURCES:
<https://www.semiconductors.org/wp-content/uploads/2019/03/Trade-graphic-768x392.png>

A new Silicon Valley is possible

- In our opinion, Trump’s administration is underestimating the Made in China plan.
- China is aware that its plan will take-off after having accumulated the following resources:
 - **Talents** to start up the program.
 - **Capitals** to fund the development of the program.
 - **Competences** to build trust in Chinese tech.
 - **Ecosystem** to have an edge and gain traction over Silicon Valley.
- The trade war's short-terms effects on the Chinese semiconductor industry are **inventory problems** and **sales loss** , but on the other side:
 - it is triggering an early boost for governmental **investment** in high tech;
 - it is increasing people awareness of the equation **no semiconductors = no lifestyle modernization**, which is necessary to attract workforce
- The effect is triggering the **accumulation of capital** and **brain-drain reversal**, which is crucial for the development of new talents and core competences within China.

THE MADE IN CHINA PLAN

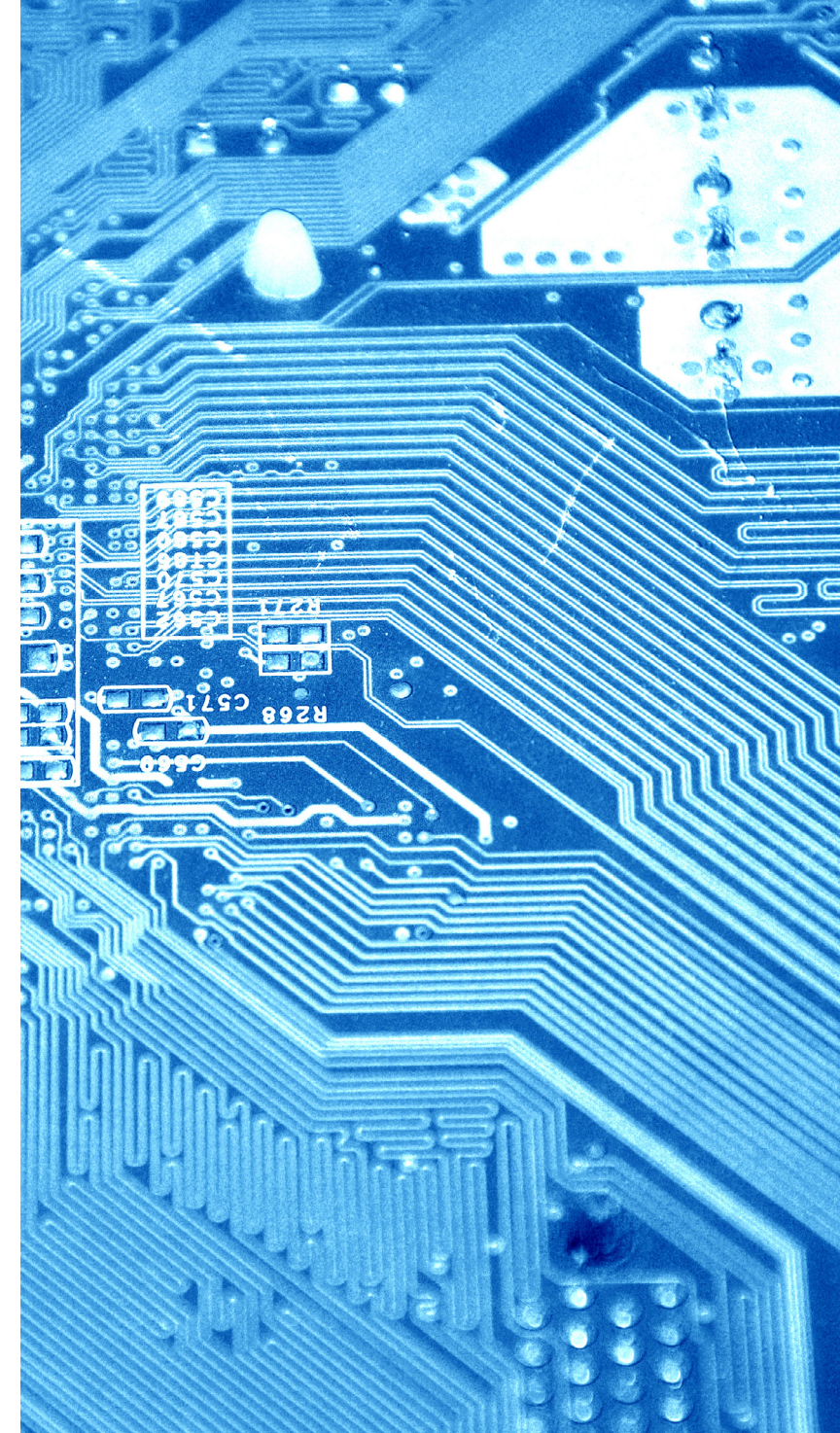


SOURCES:

<https://multimedia.scmp.com/news/china/article/made-in-China-2025/index.html>

Chinese tech leapfrogs

- **Alibaba (BABA:US)** has launched Hanguang 800, its first AI inference chipset that can recognize billions of images in just five minutes, as opposed to an hour with prior technologies .
- **Baidu (BIDU:US)** presented in July its AI chipset called Kunlun, which reaches performances 30 times better than FPGA AI accelerator .
- **HiSilicon** (Huawei – not listed) has recently launched Kirin 990 5G, a very advanced system-on-a-chip (SoC), built on 7 nm node. It contains a CPU, GPU, 5G modem all in one.
- **Gree (000651:CH)** is investing \$2bn in becoming one of the leaders of the Chinese chipset landscape. These intelligent chips will first find their way in smart appliances and then they will be deployed elsewhere.
- **Cambricon** (not listed) is one of the few semiconductor unicorns developing AI chipsets. Cambricon 1M is used for cloud-based services and reaches performance of 5 Tops/watt (number of operations per energy consumed, higher is better) , a number that is 15 times larger than an Nvidia Tesla T4 GPU.



Catalysts:

- **Trade war.** Trump's decision to tax Chinese goods is accelerating Chinese plans to improve its own semiconductor industry .
- **Downstream investment.** Chinese downstream companies (Alibaba, Baidu) have been successful in chip design and are outbeating their western GAFAM rivals.
- **Awareness.** The Chinese population is becoming more aware of the role of tech in the modernization of lifestyle. People engagement is growing, and this will gather and foster the skilled workers' need to build competitive competences.
- **Private sector.** The Chinese private ecosystem is ahead of competition, especially when it goes down to the startup environment. Cambricon (not listed) and Horizon Robotics (not listed) are just two among the several Chinese unicorns.

Risks:

- **Talent.** Access to talents was crucial to the development of Silicon Valley. The gravitational forces of the Californian area are still larger than any other country.
- **Over-investment.** Excessive injection of capital has already led to overcapacity, thus limiting the competition of certain companies .
- **Territorialism.** Embittering or prolongation of the US sanction might lead to isolation. According to a KPMG study, this is acknowledged as the 4th risk in terms of importance for semiconductor industry leaders .

Bottom Line:

- China is using the momentum generated by the trade war and sanctions to **speed up its semiconductor development.**
- Industrial leaders have correctly spotted what Chinese tech is missing: **lack of innovation.** This has helped them to target correctly the bazooka of Chinese investments.
- Investments are directed towards **high added value activities:**
 - **Investments in R&D activities** in order to fill the gap with US industries.
 - **Talent creation** and retention,
 - **Refocusing** from low end to high end manufacturing and design

SOURCES:

KPMG – Semiconductors: As the backbone of the connected world, the industry's future is bright
<https://assets.kpmg/content/dam/kpmg/us/pdf/2019/03/kpmg-semiconductor.pdf>

About AtonRâ Partners

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