

Industrial policy for technological sovereignty in the context of shifting geopolitical power

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TIPS FORUM 2023

Industrial Policy in an era of global structural change: Implications for Southern Africa

Shrinking industrial policy space

- Traditional view of industrial policy as only useful to correct market failure
- Successfully used in East Asia to support rapid growth but considerably weakened in aftermath of the Asia Financial Crisis (1997).
- Discredited in mainstream economic doctrine but consistently used US against rivals (e.g. fall of Japanese dominance in the semiconductor industry).
- WTO rules: the space that was available to East Asian countries until the 1990s has become much narrower today

Shifting geopolitical power balance & revival of industrial policy

- Re-emergence of China as a global manufacturing hub
- Made in China 2025 and smart manufacturing aspirations
- National security implications of (potential) technological leadership of China in key digital technologies
- Supply chain disruptions in medical equipment and chips at the height of the covid-19 crisis
- US and its European allies: zero capacity in the manufacturing of the most advanced chips (Cytera, 2023).
- Technological sovereignty: industrial policy instrument to secure home production of advanced chips while barring China from advanced technology and manufacturing equipment

Industrial policy for sovereignty: Sun Zi's art of war and US-China fight for control of supply chains in the semiconductor industry

1. Which sovereign is imbued with moral law (i.e. is in harmony with his people)?
2. Which of the two leaders has the most ability?
3. With whom lie the advantages derived from heaven and earth (i.e. time and terrain)?
4. On which side is the discipline most rigorously enforced?
5. Which side has the stronger army (internal cohesion and quantitative strength)?
6. On which side are men and officers highly and consistently trained?
7. On which side are methods and discipline administered with more constancy?

US Industrial policy tools and WTO rules

- Trade war against China and technological chokehold: strangling to kill
- CHIPS and Science Act of 2022.
- Chip 4 alliance + stick and carrots
- Human capital development
- Technology transfer
- Making use of favourable financial system and leveraging EDA dominance

China's industrial policy tools for sovereignty

- Made in China 2025 (unveiled in 2014): a multisector development plan for smart & innovation-driven manufacturing.
- Semiconductor industry: strategic priority because of its implication for the technologies of the future
- National Integrated Circuit Industry Investment Fund (2014)
- Notice on Several Policies to Promote the High-quality Development of the Integrated Circuit Industry and Software Industry in the New Era (2020)
- Human capital accumulation policy (including foreign talent recruitment).

Assessment: the 5 pillars

US

- Moral law:
 - Bipartisan support, issue framed as a national security concern
 - Against foundational free-market doctrine
- Advantage of terrain and time
 - Dominant but declining leadership
 - Control of key choke points in EDA and SME through allies
 - Financial system
- Methods and discipline
 - Gains unevenly distributed
 - Short-term profit driven, risk of defection
 - Coercion of allies, market loss

CHINA

- Moral law
 - Coherence within CPC around development goals: rejuvenation of Chinese nation
 - Reclaiming its perceived legitimate place in world economy
- Time and terrain
 - New entrant with a strong R&D infrastructural basis
 - Leverage in key inputs for mirror measures
 - Large market potential, dynamic innov syst
- Methods & discipline
 - Devoted state apparatus
 - Swift measures against cases of corruption
 - Long-term planning: hare vs tortoise

Lessons for Africa

- Under existing WTO rules and the changing geopolitical configuration, industrial policy has received a new role that African countries can put to use for their own technological development
- “Quod licet Iovi, non licet bovi”: the policies tools used by the US not available to anyone else: monetary & technological privileges at the service of national security and technological leadership
- China’s technological advance can be slowed but not derailed
- China’s experience and its strategy to overcome the technological chokehold provides practical lessons for countries seeking technological upgrade and catch up

Trade & Industrial Policy Strategies

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