

China: Commercial and Dual Use Technologies: China's Challenge

2022 Nunn School Symposium on Global Technological Development

April 13, 2022

John R McIntyre
Professor of Management (Strategy & Innovation) &
International Affairs
Scheller College of Business
Georgia Tech CIBER
Georgia Tech, Atlanta, Georgia, USA
John.mcintyre@scheller.gatech.edu



Georgia Tech Scheller College of Business

**Center for International Business
Education and Research**

China's Economic Rise: Select Features

- Began in 1977: Deng Xiaoping's Four Modernizations
- 1990's Global Integration & accelerated development
- December 2001: WTO membership
- China's clear ambition: MIC 2025
- MIC 2025: A mercantilist blueprint
- For both economic and military development (dual-use nature of technology)
- "Socialism with Chinese characteristics": Chinese industrial policy
- Designed to turn China into the preeminent industrial superpower by 2049



MIC 25's Foundation Stone: Surpass the West by 2049

- Shifting from low-end manufacturing to high-end manufacturing powerhouse
- (See Breznitz's *Run of the Red Queen*, 2014)
- Targeted R&D investment on “state of the art” technologies: ten cut-across sectors
- From copy cap to “re-innovation”



The Ten Key Sectors



New information
technology



Numerical
control tools



Aerospace
equipment



High-tech ships



Railway
equipment



Energy saving



New
materials



Medical
devices



Agricultural
machinery



Power
equipment



China's Commercial Achievements and Challenge

- R. Lighthizer, US STR, June 15, 2018 famous statement: What is fair competition?
- Political realism versus neoliberal view!
- Competitive factors: -lower cost workforce, huge subsidies, low yield financing, huge internal market, state sector, FDI
- Global competitors in select defined commercial areas:
 - 1. Smart phones
 - 2. Telecom network gear (e.g. Huawei)
 - 3. Commercial drones
 - 4. Renewable energy: wind turbines and solar panels
 - 5. Electric Vehicles and lithium ion batteries
 - 6. Rapid trains and commercial aircraft (Comac)
 - 7. Mobile gaming & social media (e.g., TikTok)
 - -See McIntyre and Spigarelli, *The New Chinese Dream*, 2019



Special Case for Strategic Areas: US Industrial Policy?

- US industrial policy: Controversial and in periods of external challenges (industrial preparedness)
- 1957 Sputnik; 1970's Japanese competition, early 2000: climate change, 2010: loss of manufacturing
- Current external challenge: China's Rise and Tech Threat (rising power trap, Graham Allison)
- Special Challenges
 - 1. Semiconductor Manufacturing/advanced packaging
 - 2. Critical Mineral and Materials
 - 3. Pharma & Active Ingredients
 - 4. Large Capacity Batteries
- US policy response on multiple fronts
- Pending legislation U.S. Innovation and Competition Act
- Bill to counter China Tech Threat
- Include \$52 bn to boost silicon-chip manufacturing



Georgia Tech Scheller College of Business

Center for International Business
Education and Research