



Economic Competition with China

2026 capstone april brent mod



Outline

- **How did China make such big manufacturing and technology gains?**
- **Have those methods become destructive since 2021?**
- **Where is technology competition headed?**



Innovation is the battleground

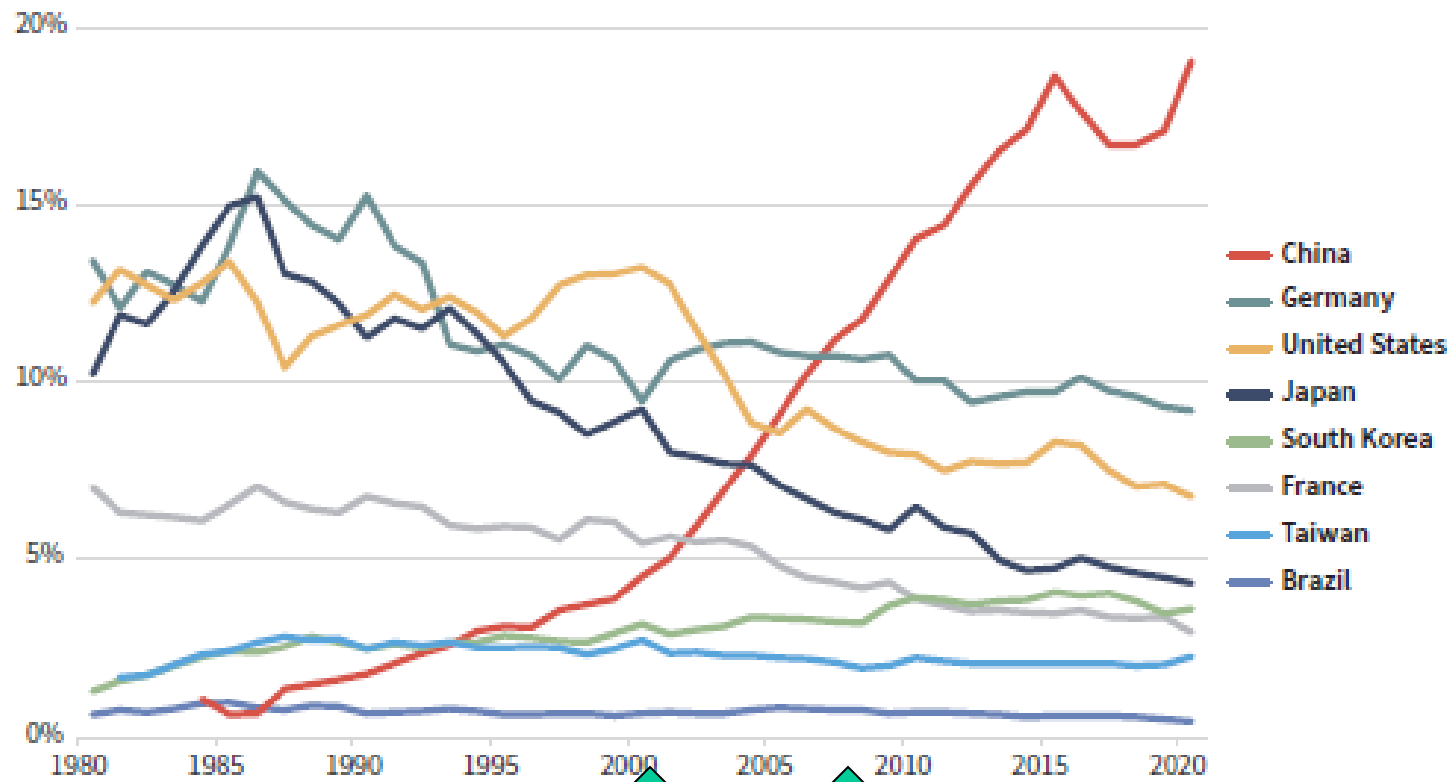


- Technological innovation has become the main battleground of the global playing field.
- Innovation is the *soul* of national progress.



China dominates world manufacturing exports

Figure 3.1: Share of World Manufacturing Exports, 1980–2020



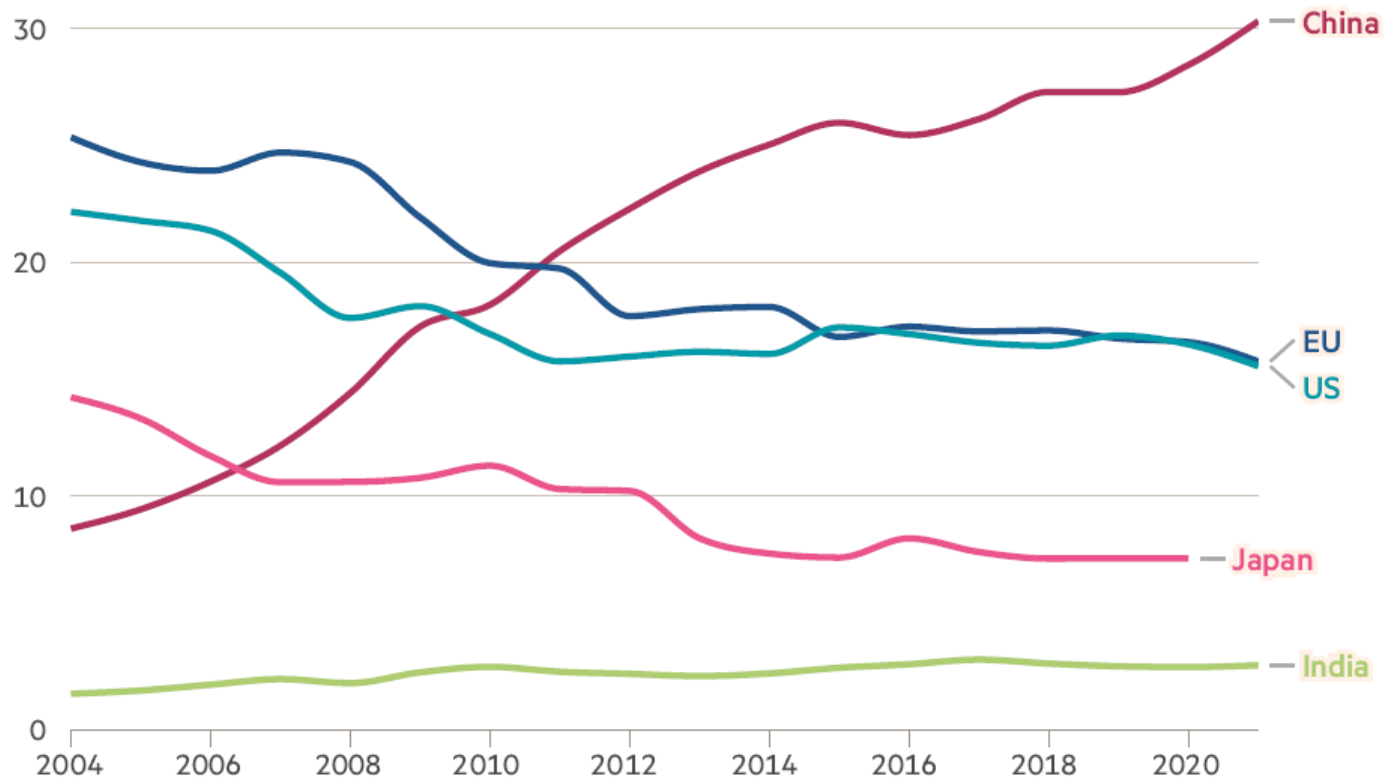
Source: "World Bank, Manufacturing exports; Taiwan Ministry of Finance, exports," CEIC, <https://www.ceicdata.com/en>.



China = U.S. + EU



Shares of global manufacturing value added



Source: "What It Would Take for the World to Disentangle Itself from China," Patrick McGee, Financial Times, January 18, 2023



Fragmentation of production



Richard Baldwin

1985 Toyota Corolla



Car Seat Today

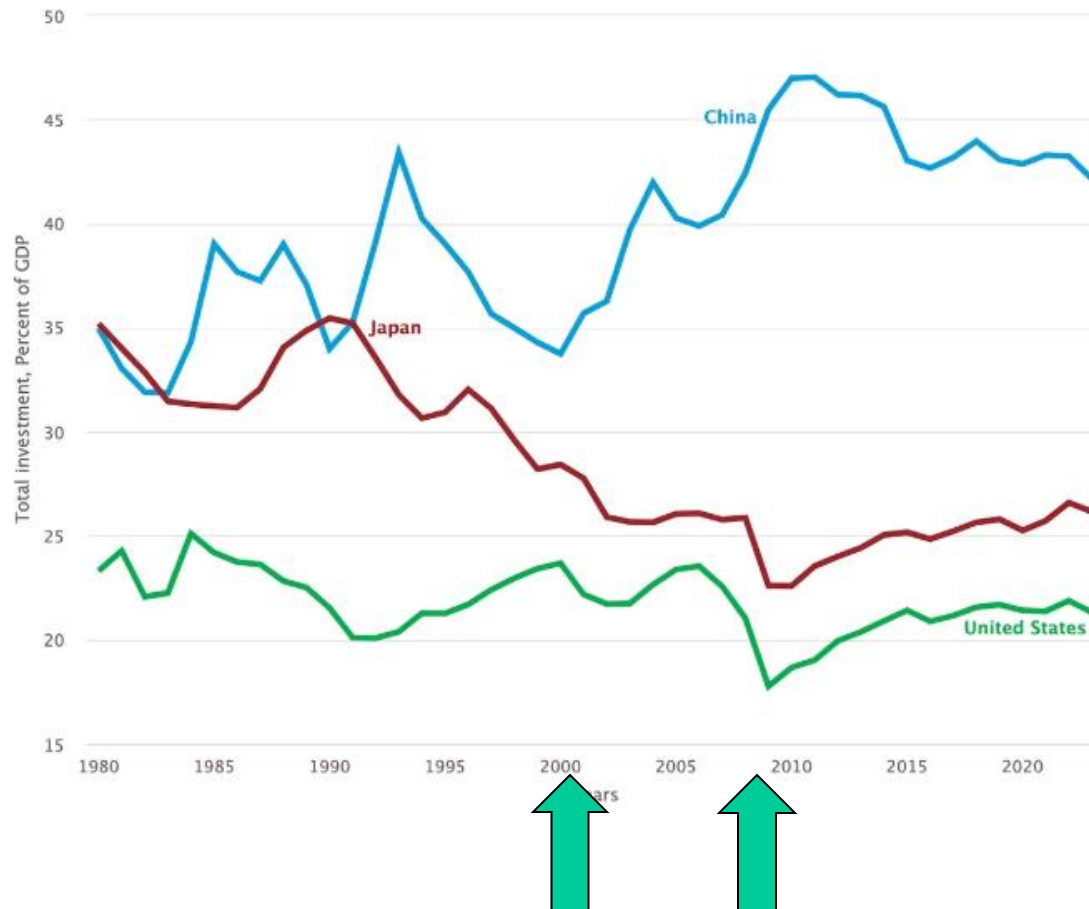




Investment as percent of GDP

How different can you be?

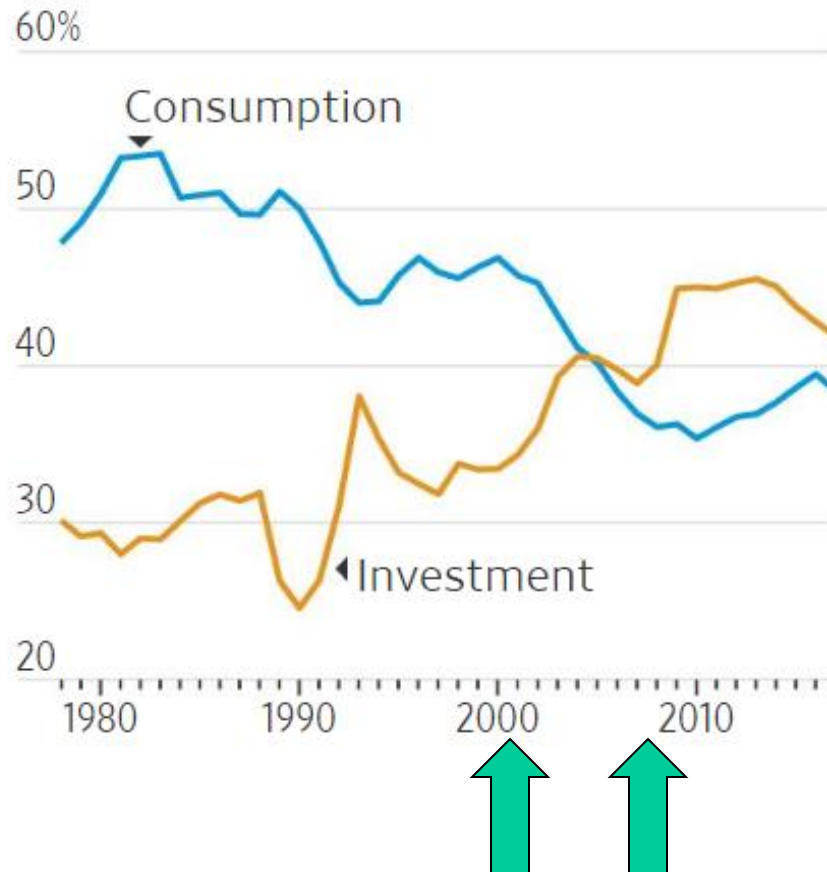
Total investment, Percent of GDP





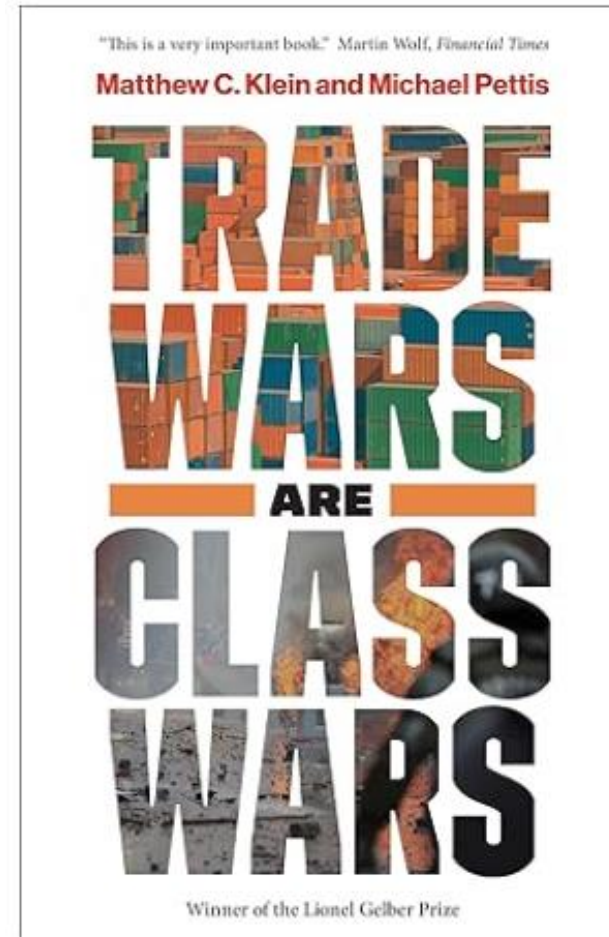
Investment 43 percent of GDP

Household consumption and investment in China as a percentage of GDP





Michael Pettis





Michael Pettis

Commonplace May 7, 2026

- Shifted resources from households to manufacturers
 - Cheap capital, local government subsidies
- Beggar thy neighbor mercantilism
 - Drives deindustrialization & stagnant wages on America

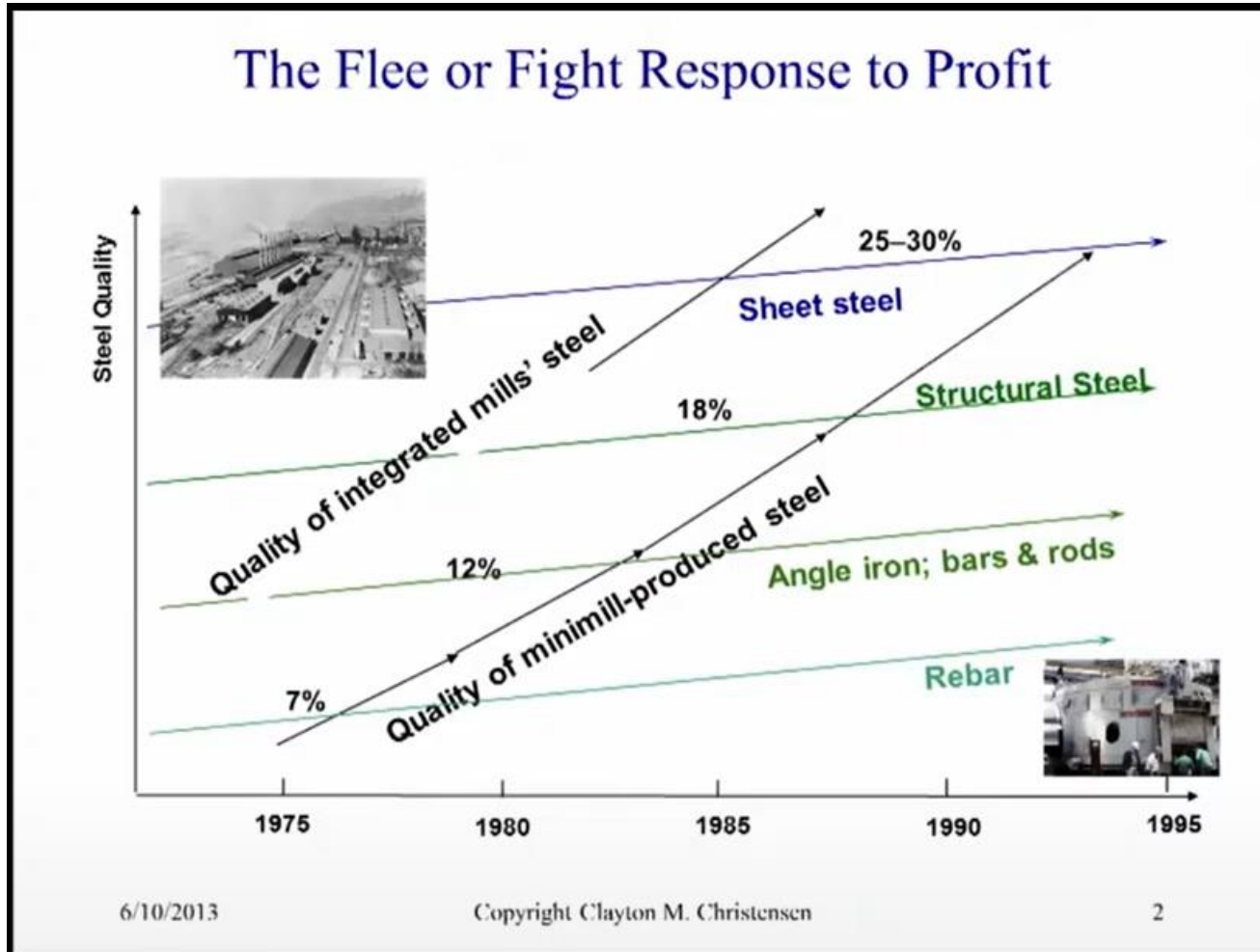


In simpler terms

- **Method:** Whole-of-nation cost minimization & investment maximization
 - Low profits help companies compete
- **Strategy:** Second-best technology + low costs to take global market shares in slices
- **Impact:** **Redistributes manufacturing from others to itself**

Nucor Steel

Clay Christensen



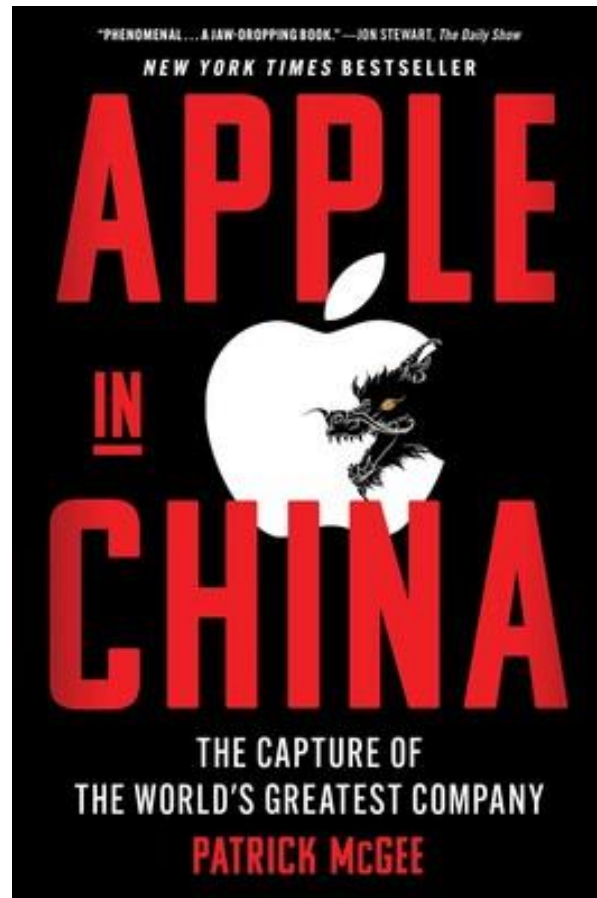


Taking markets from below accelerates growth

- Dominating each phase of production allows learning by doing, cluster benefits, & tech upgrading
- Build base for next level



Apple has helped China do it



- Apple investment in China = twice the Marshall Plan
- Process skills leaked to BYD



Share of GDP in manufacturing

Share of GDP in manufacturing	Percent
China today	28
U.S. today	11
U.S. in 1970	23

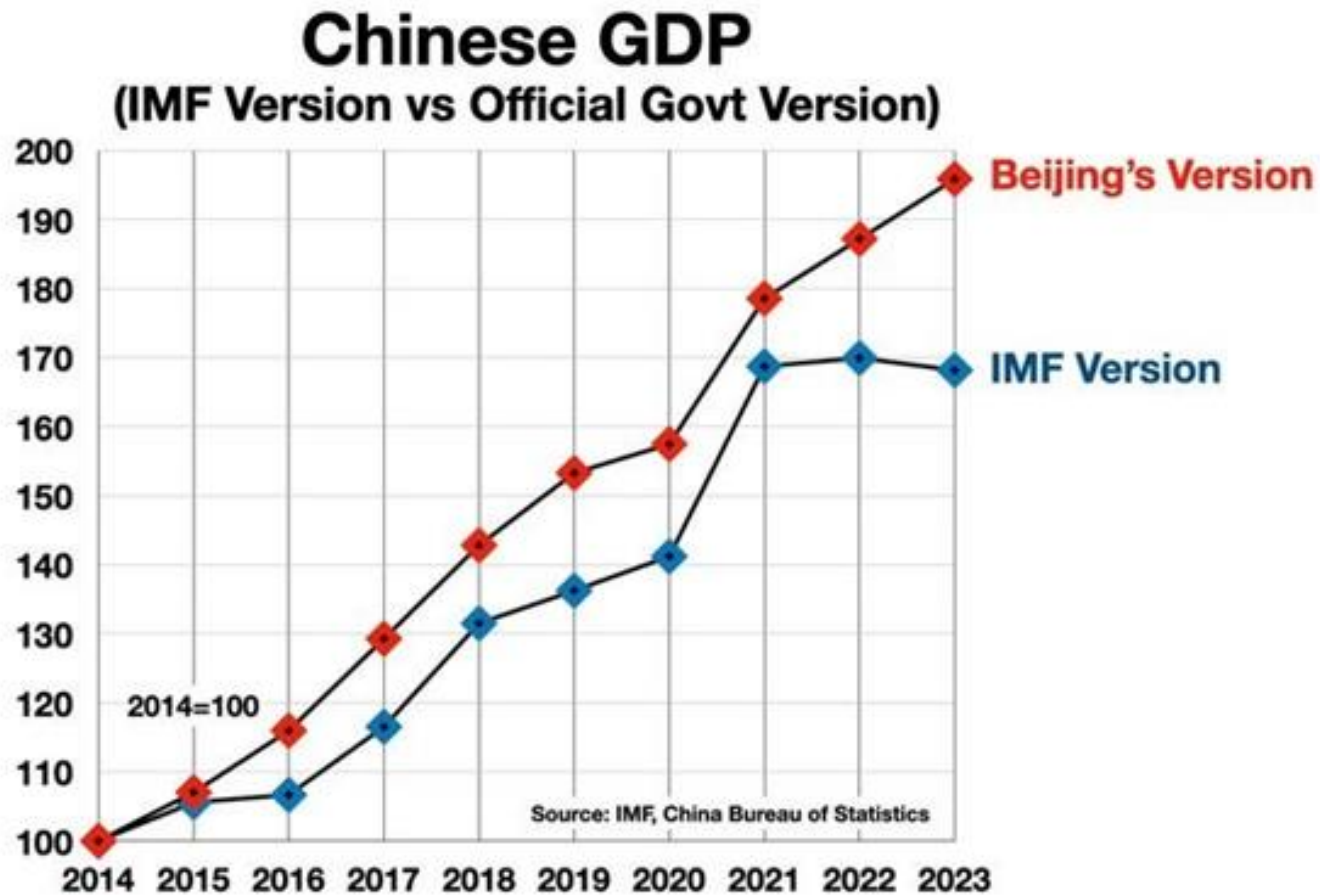


Outline

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- **Have those methods become destructive since 2021?**



Slowdown since 2021





Involution & over-capacity

- Involution: collapse of demand & race to the bottom on profits
- CCP has diverted cheap capital from real estate to industry
- Both produce over-capacity



Hard times

- Could solve by boosting consumption, but Xi opposes
 - Xi sees industry & technology as national power
- China could be in for hard times



But high-tech exports could get worse

- EV's could decimate auto industries in rich nations
- China shock 2.0



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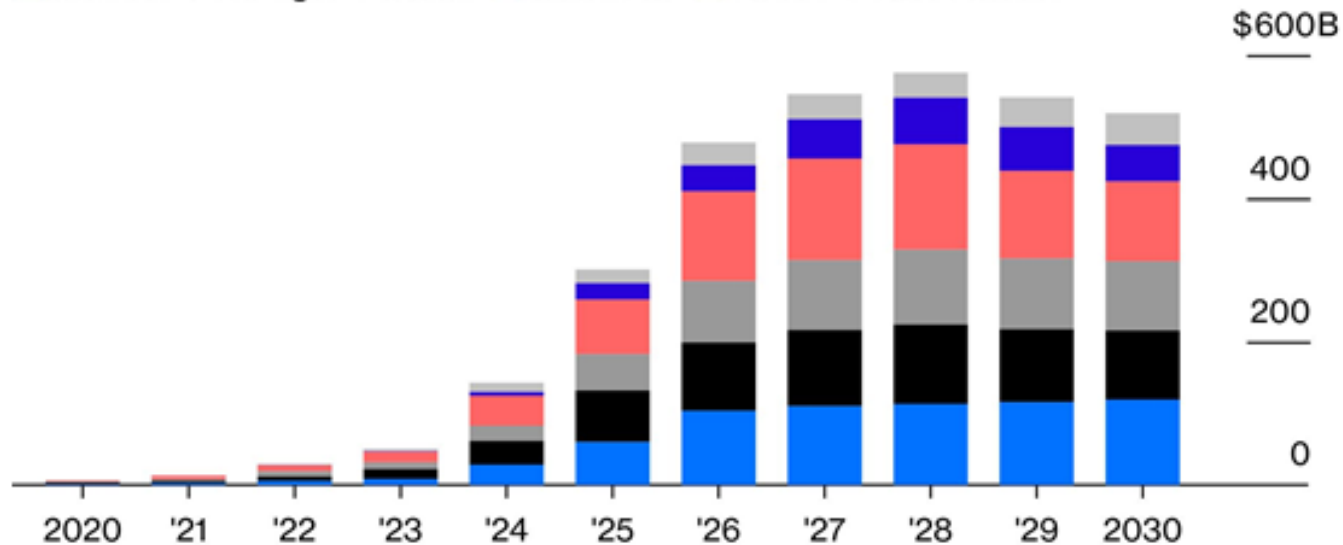


Will the Mag 7 save us?

An Epic AI Investment Boom

Past and forecast spending on data centers for training and inference

Amazon Google Meta Microsoft Oracle Tier 2 cloud



Source: Bloomberg Intelligence

Note: Tier 2 cloud includes Coreweave and Apple.

Bloomberg Opinion



Who wins?

- Much AI spending goes to inputs from China & Asia
- U.S. may lead algorithms, but China will do well at applying AI to industry
- Both strong in different areas?
- **Asymmetric racers on different tracks**



What do you think?

Asymmetric Racers on different tracks



China

- Low rates of return & high investment
- One step behind technology linked to manufacturing
- Manufacturing juggernaut helps defense

U.S.

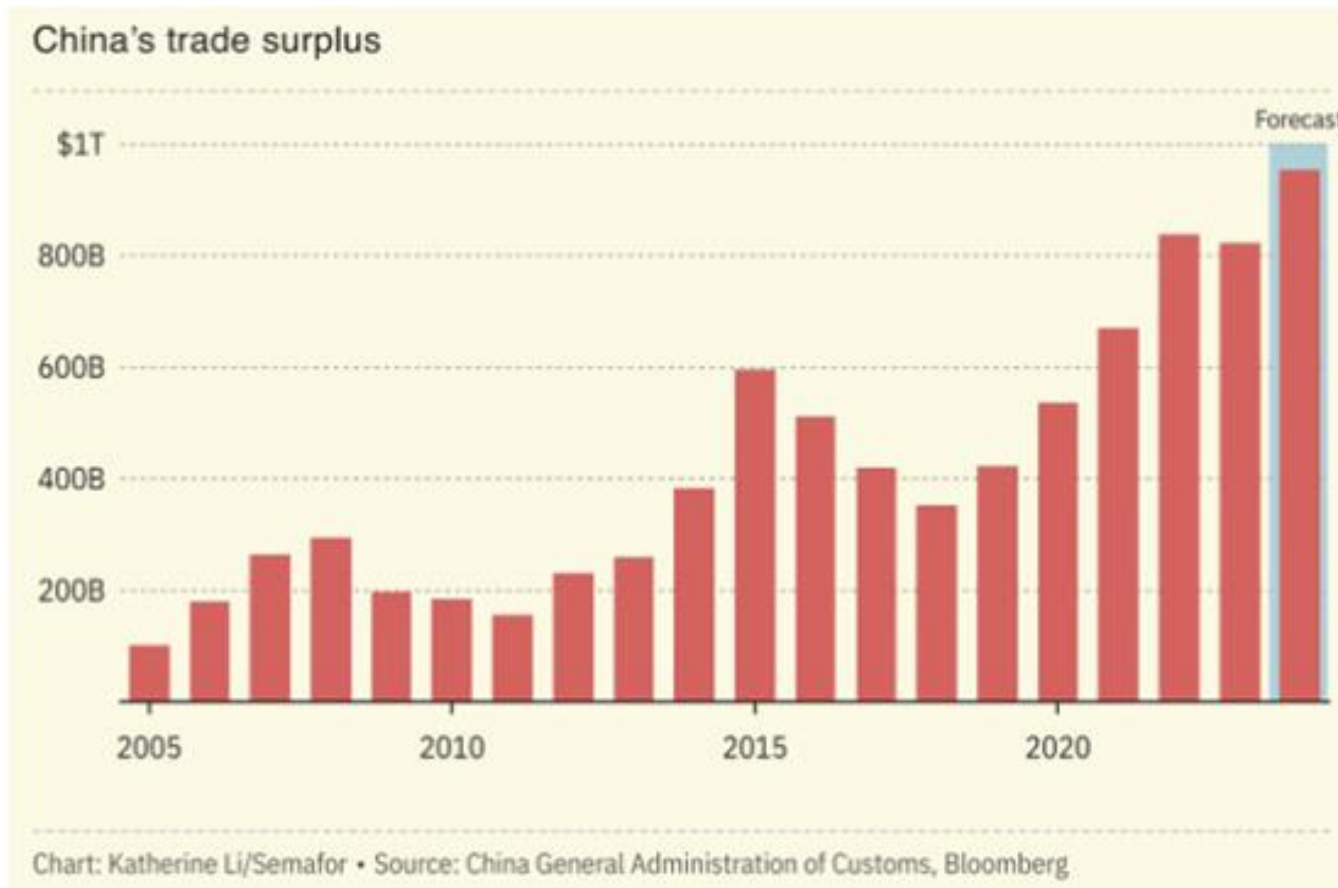
- High rates of return & low investment
- Cutting-edge innovation led by knowledge sectors
- Weak manufacturing hurts defense

Bonus Slides





China's trade surplus in goods



Global trade surpluses & deficits



Figure 1. Net Trade in Goods and Services



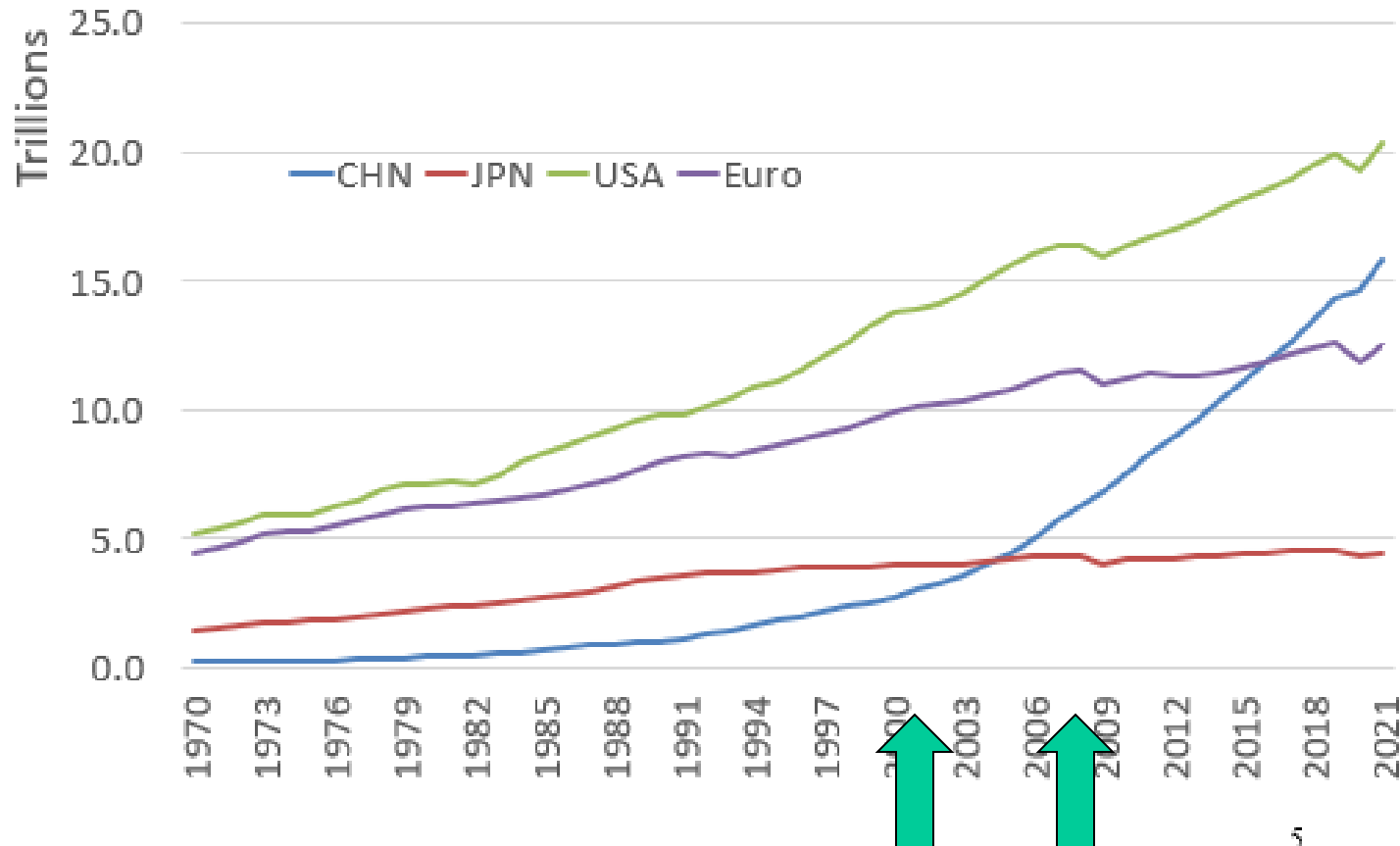
Source: "Net Trade in Goods and Services (BoP, current US\$)," World Bank Open Data, accessed July 10 2024, <https://data.worldbank.org/indicator/BN.GSR.GNFS.CD?locations=CN-DE-AU-CA-KR-JP-GB-US>.



Most of China's gains since 2001

GDP in constant dollars at exchange rates

**GDP (Real GDP, 2015 constant dollars)
1970-2021**

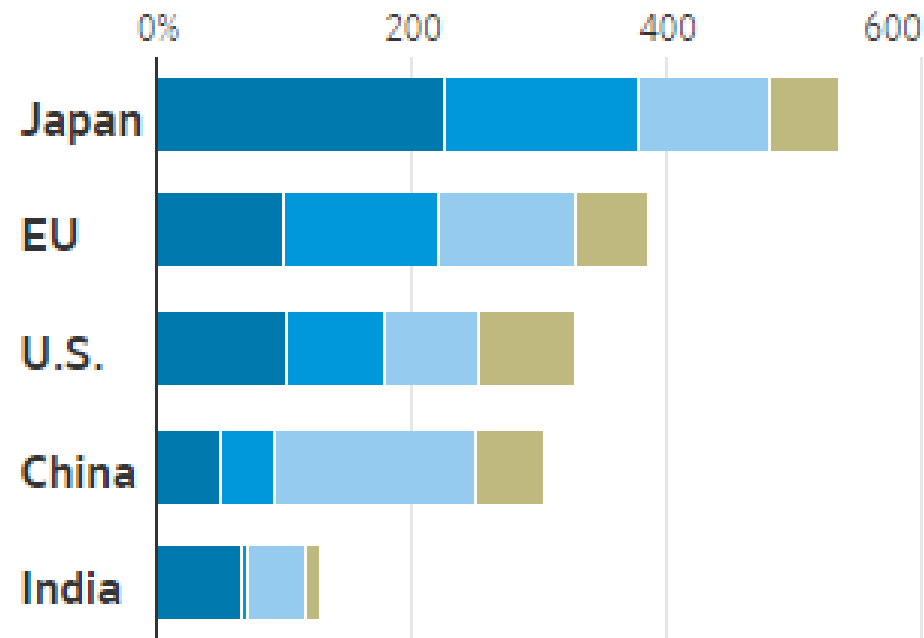




Comparative debt

Debt by sector as a share of GDP, Q1 2019

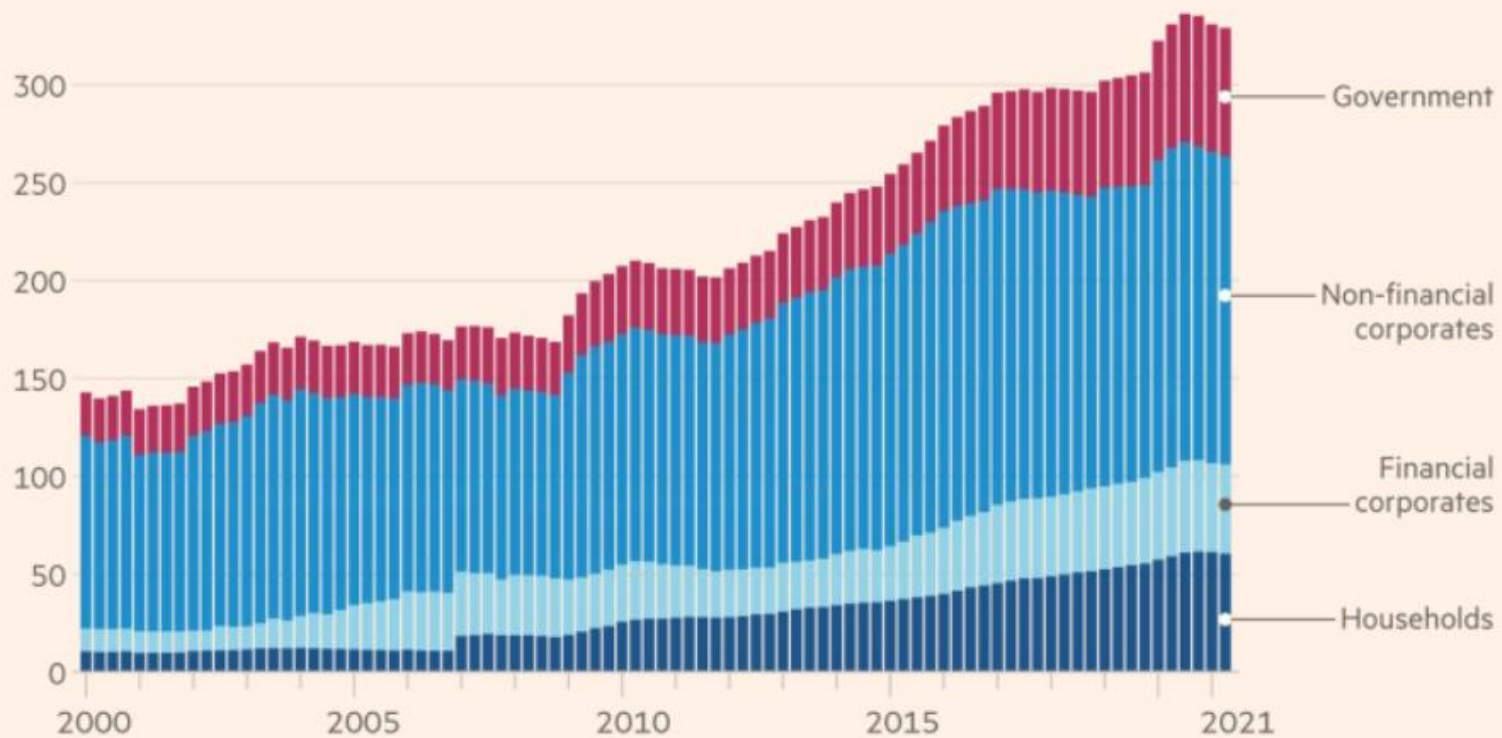
■ Government ■ Financial
■ Non-financial corporate ■ Household





Rising debt

Chinese debt as a % of GDP, by sector




Source: Institute of International Finance
© FT



U.S. vs China total debt

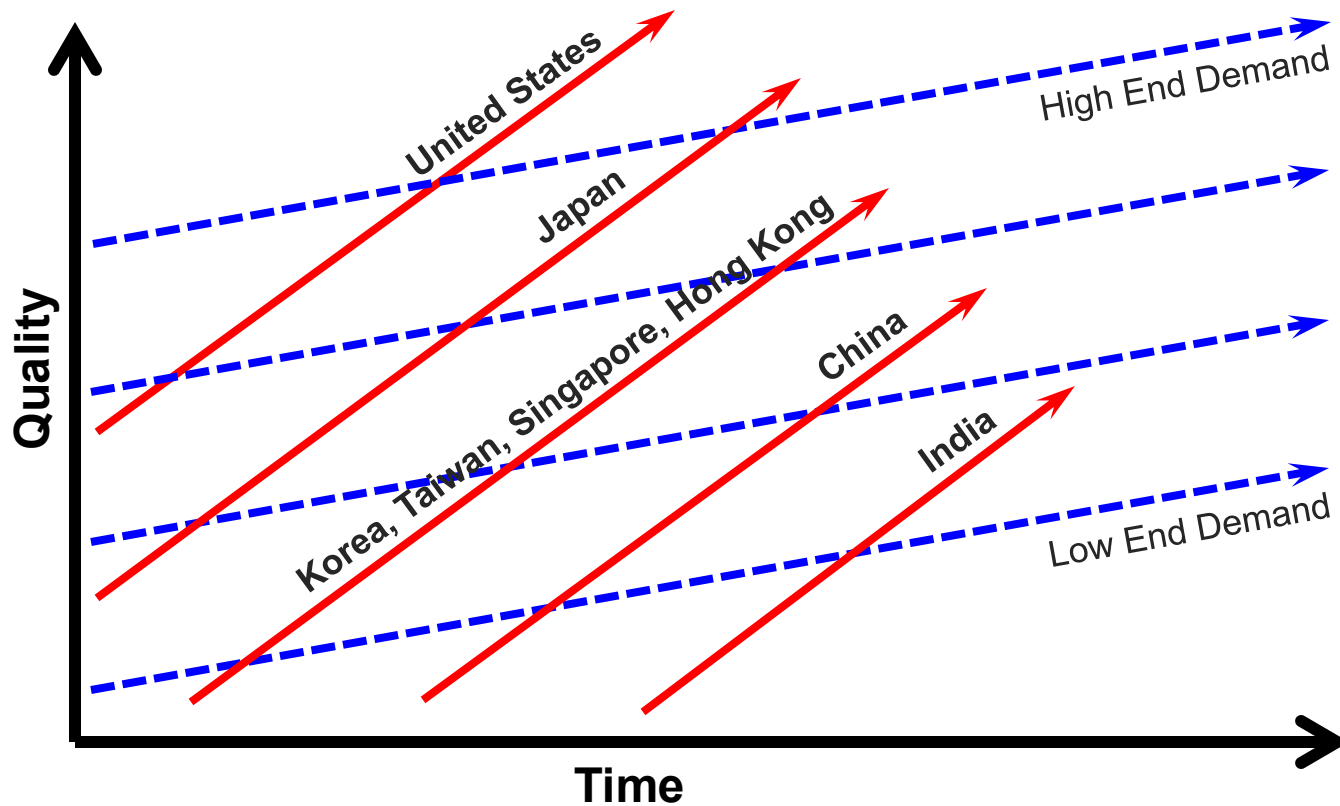
Total Debt Overview (2024-2025 Estimates)

Debt Category 	United States	China
Government Debt (Nominal)	~\$38.3 Trillion	~\$18.7 Trillion
Government Debt-to-GDP	~121% – 125%	~90.1% – 96%
Corporate Debt-to-GDP	~77.2%	~165%
Total Debt-to-GDP	~249%	~287% – 300%+

China at a different level

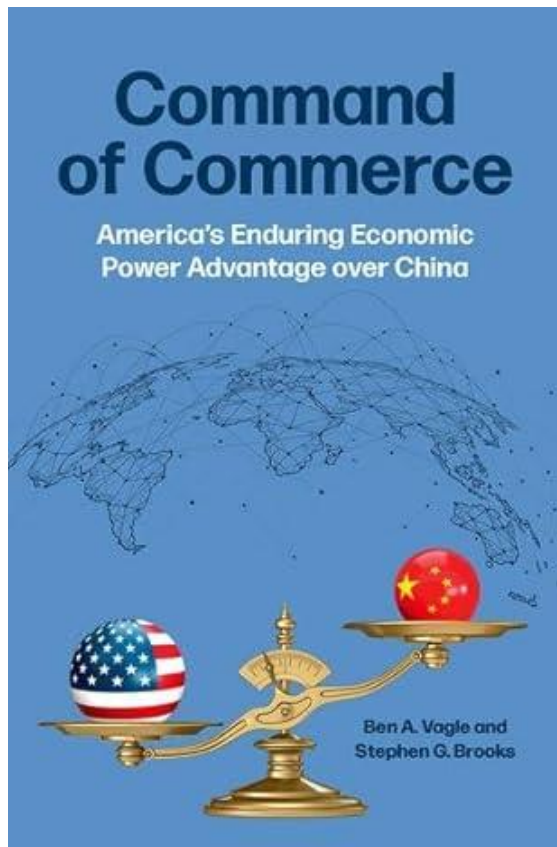


Clayton Christensen





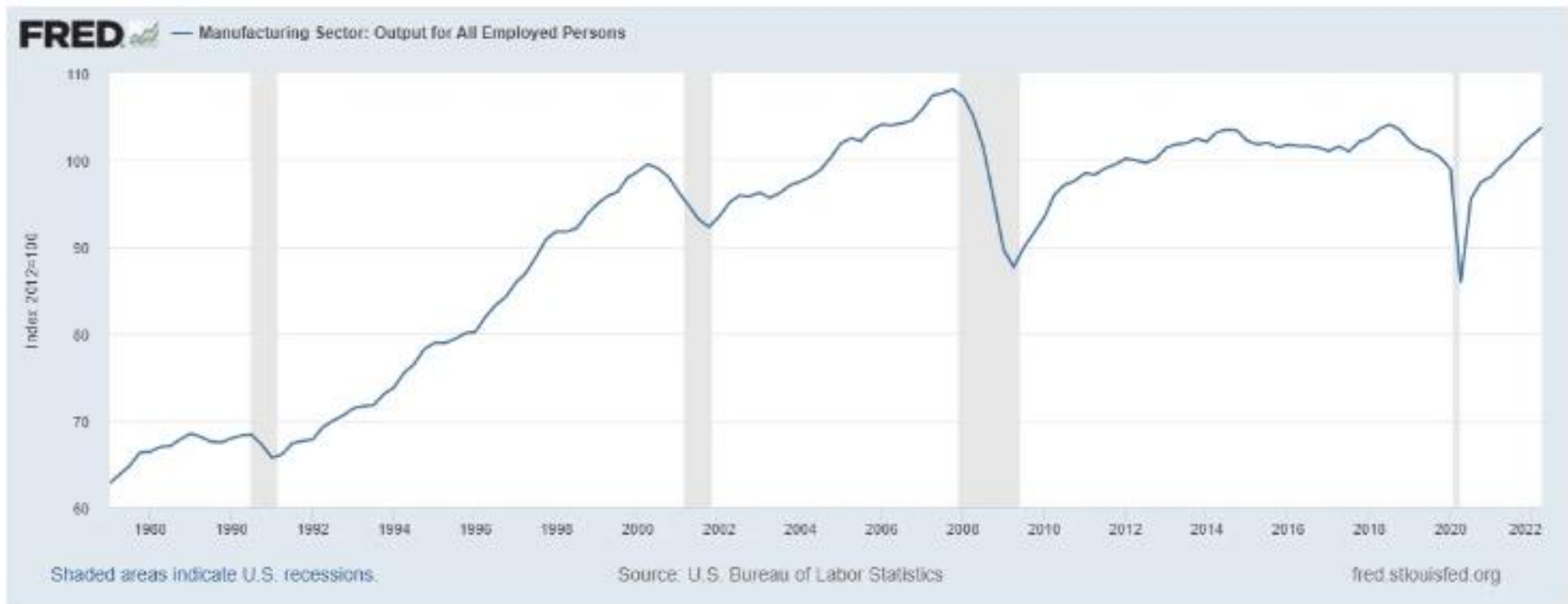
Economic impacts of an extended cut off



- Taiwan war games show high risk of escalation
- If allies join a trade embargo, China's losses would be 5-11 times as high as America's
 - If only U.S., closer to equal
- China would suffer lasting damage



U.S. manufacturing output flat since 2001





Implications for defense

	Investment	Technology	DIB
China	Super high	One step behind linked to manufacturing	Manufacturing strengths help DIB
U.S.	Low	Cutting edge led by knowledge sector	Manufacturing weaknesses hurt DIB



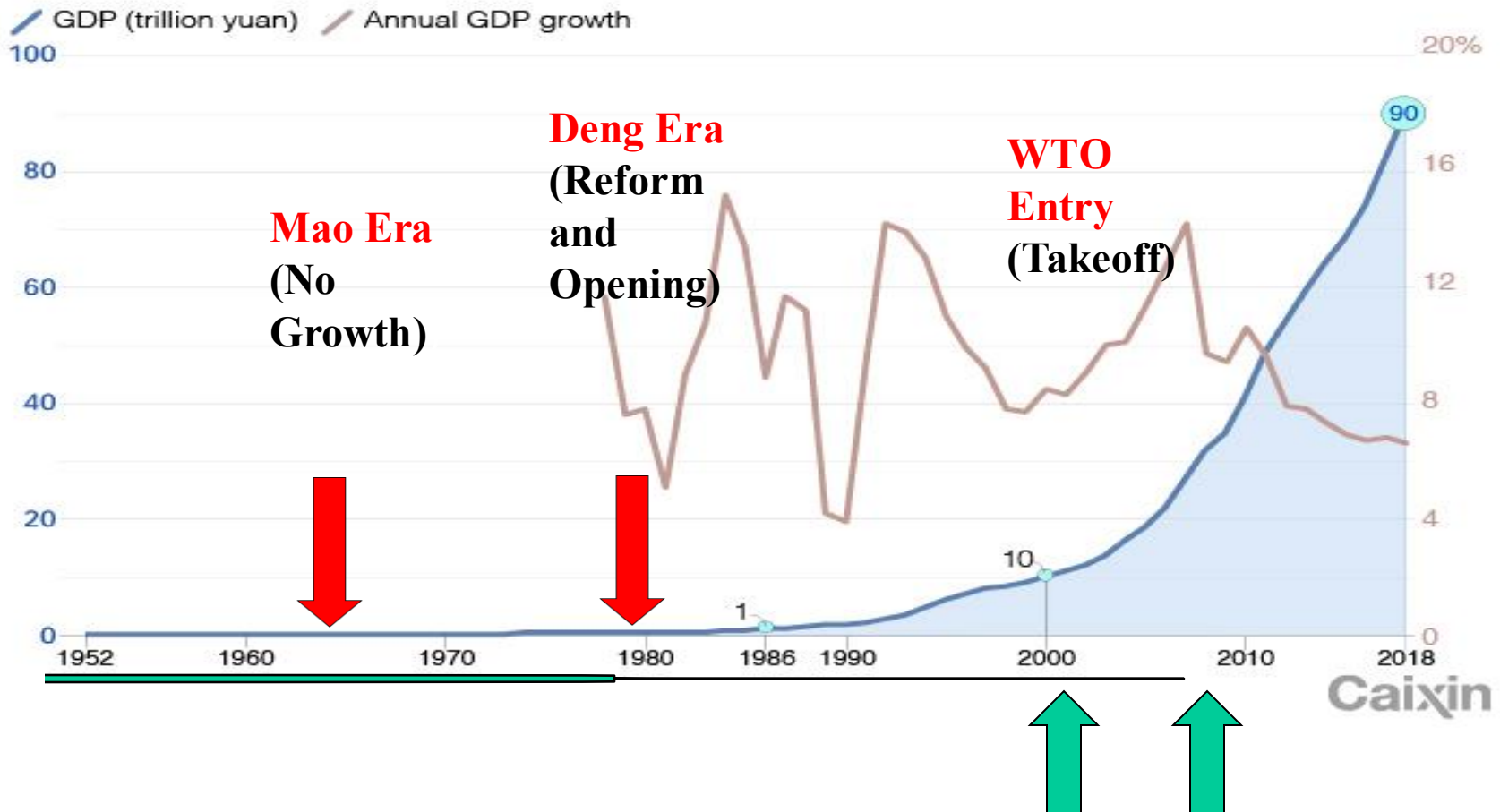
How leads in what?

GDP	Technology	Manufacturing	DIB
U.S. leads at exchange rates	U.S. leads in cutting edge	China leads; increasingly at high-tech levels	U.S. better at exquisite
China leads at purchasing power parity	China does well in applications to industry	U.S. has lost ground but has new models (Tesla & Hadrian)	China better at mass



Long slow takeoff

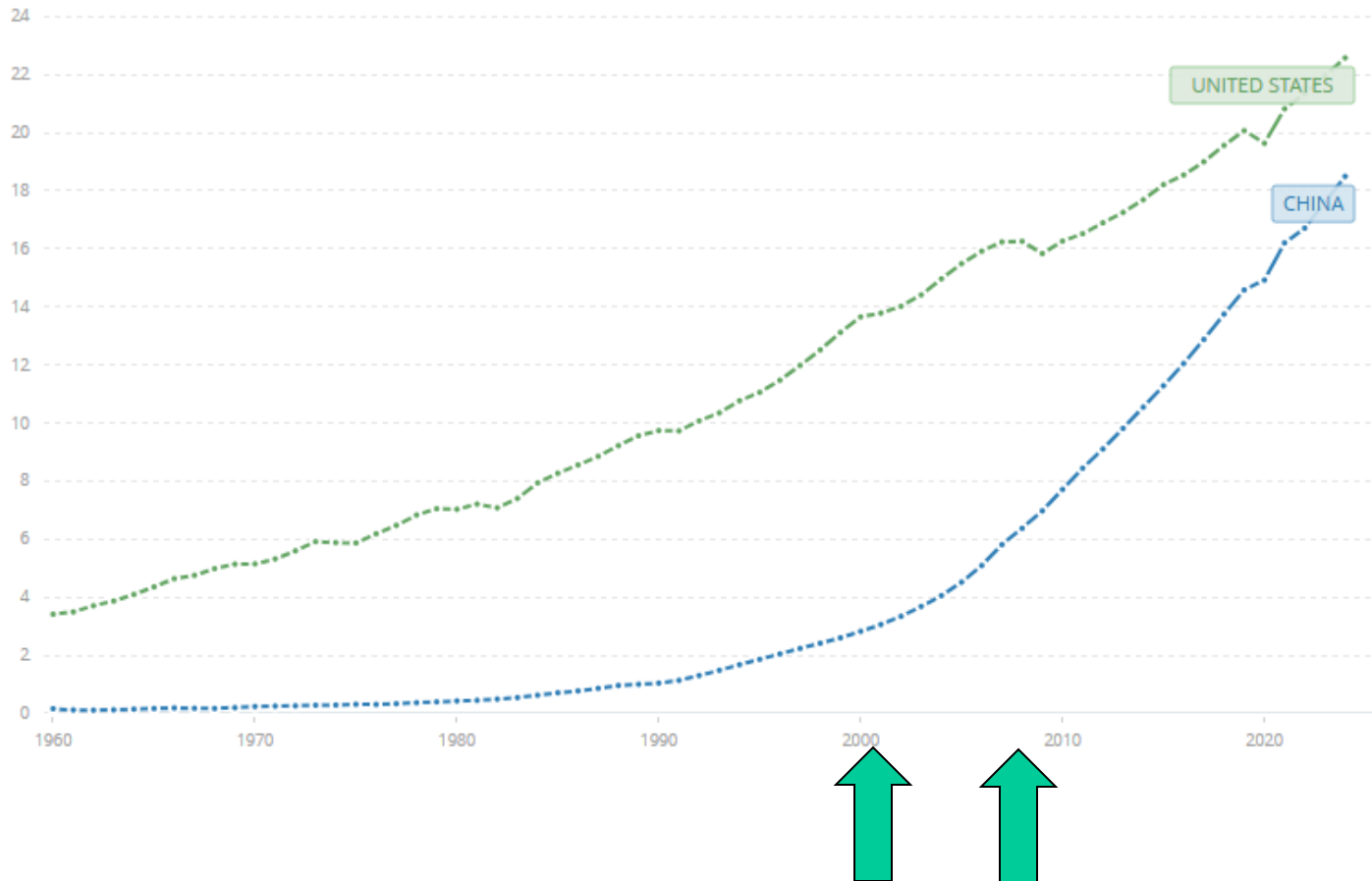
Expanding Economy





Most gains since 2001

GDP in constant dollars at exchange rate

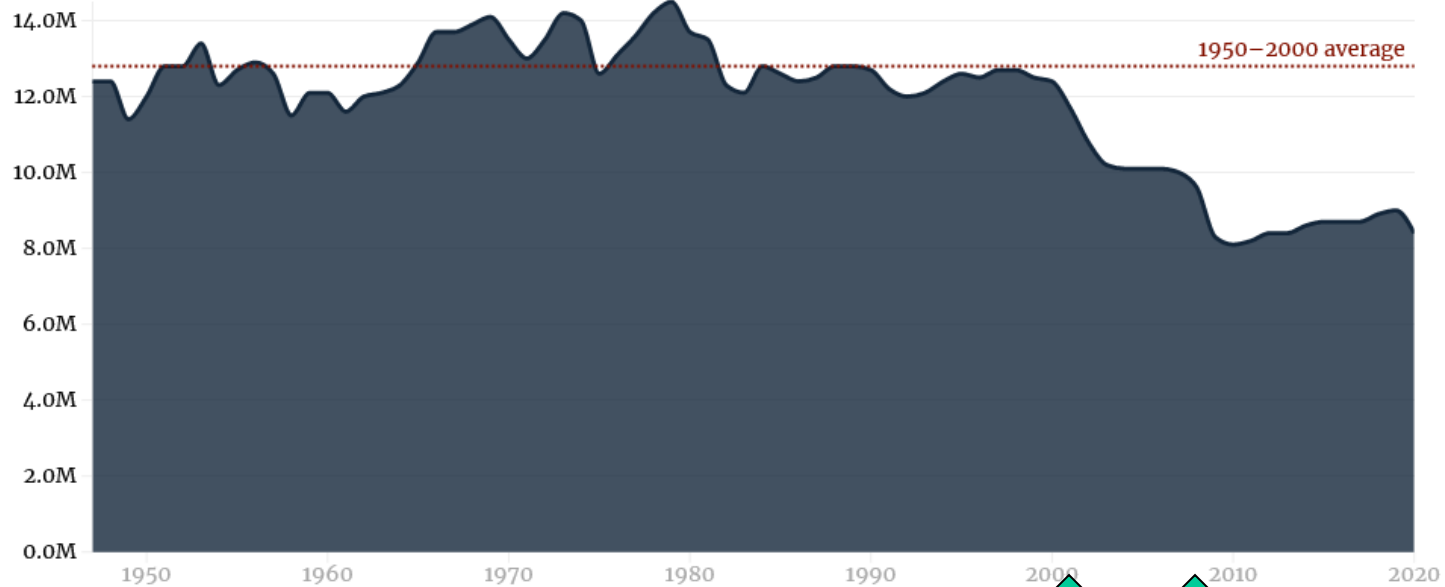




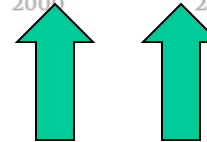
U.S. manufacturing jobs down

The Sudden Collapse in Manufacturing Employment

Production and nonsupervisory employees in the U.S. manufacturing sector (millions)



Source: U.S. Bureau of Labor Statistics · Note: Value for each year calculated as average for the 12 months.



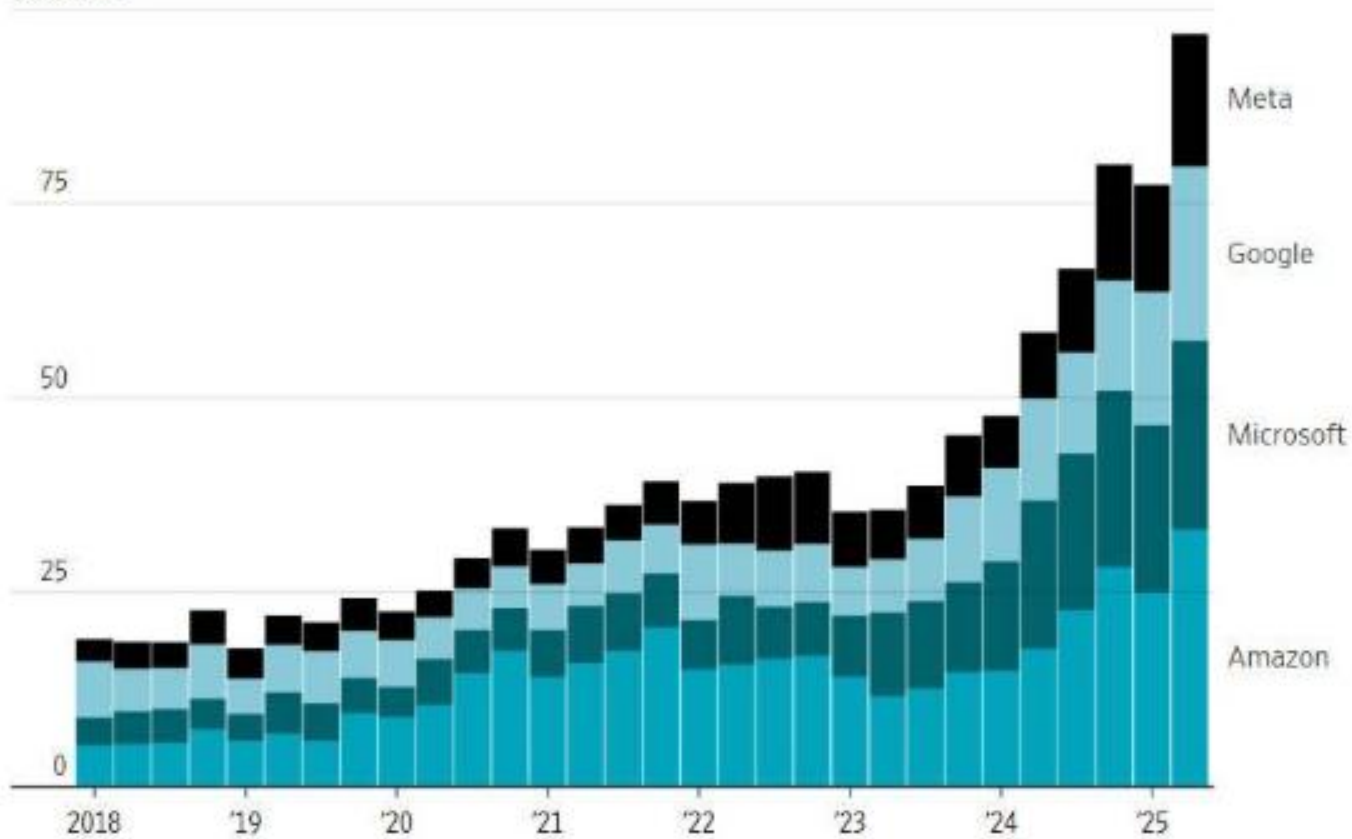


Is it the Mag 7 vs. China Inc.?

Mag 7 investments in AI

Capital expenditures, quarterly

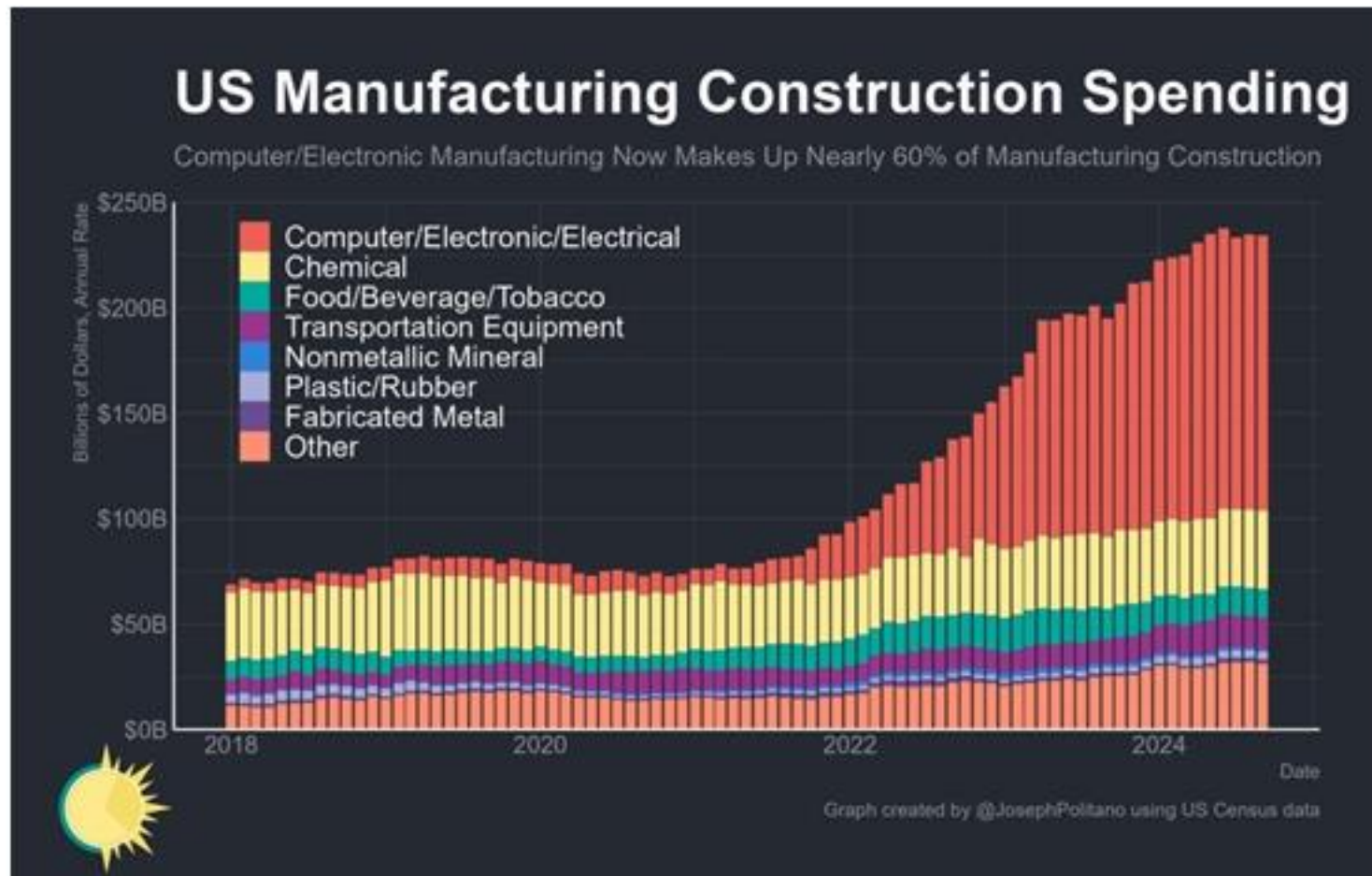
\$100 billion





Is it Changing?

U.S. manufacturing construction up

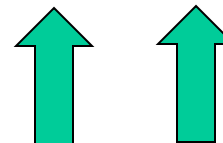
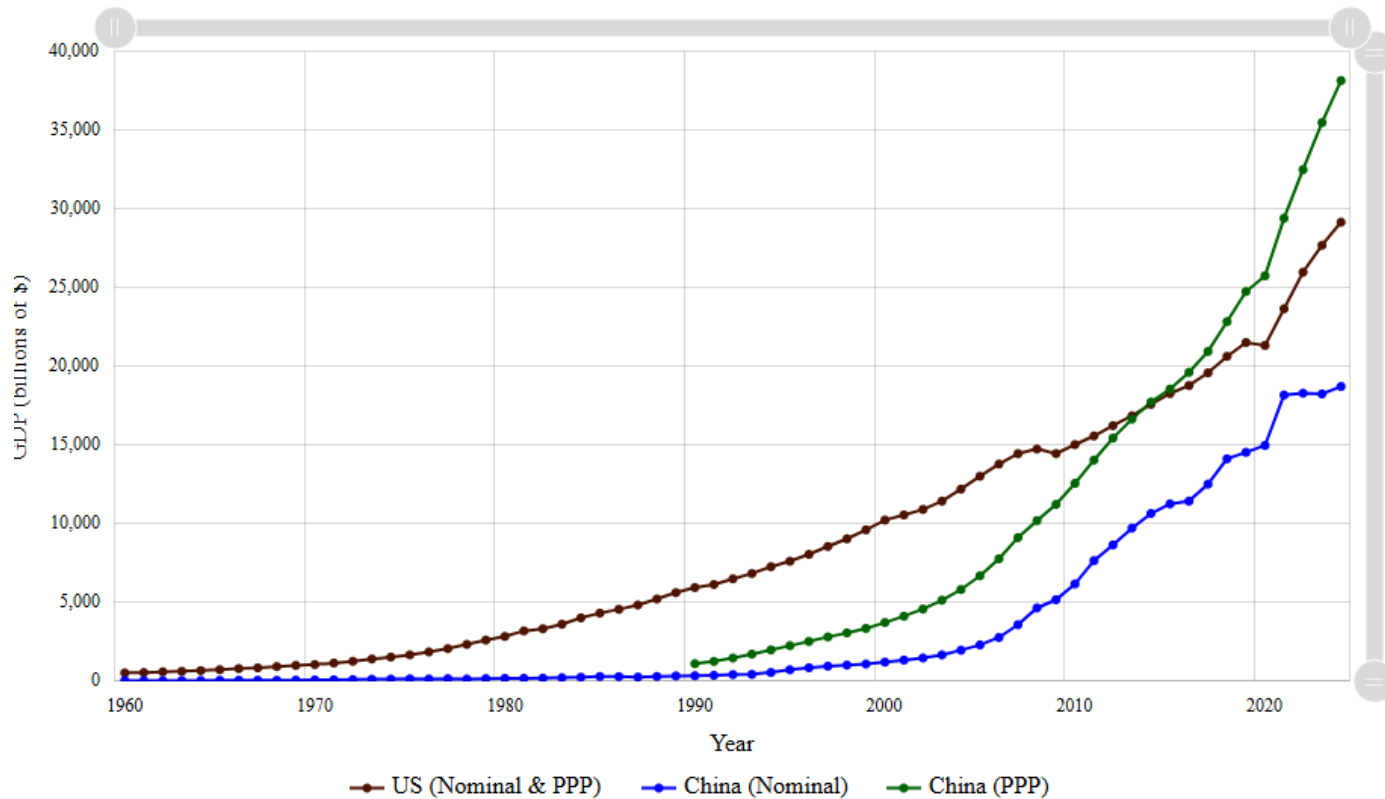




U.S.-China GDP at PPP

Purchasing power parity

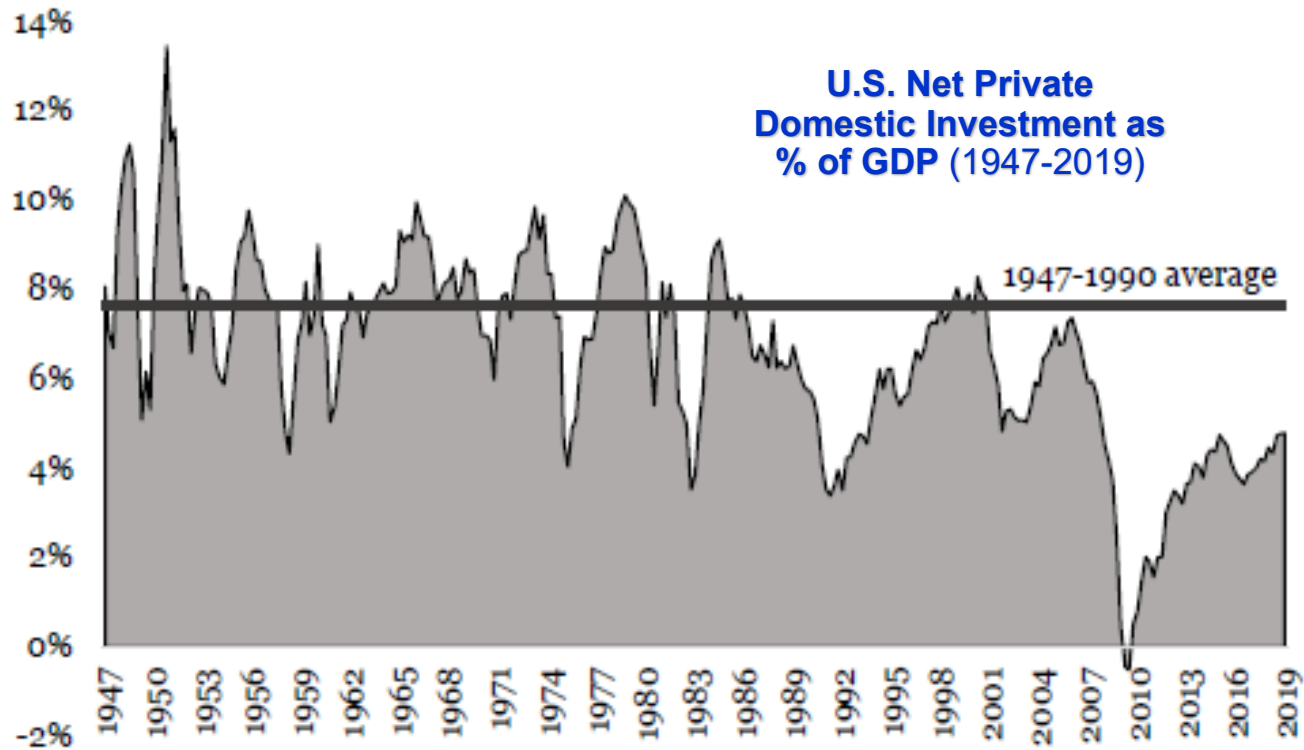
United States vs China by GDP



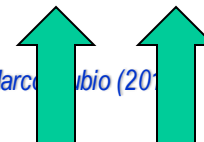
U.S. private investment down



Rubio

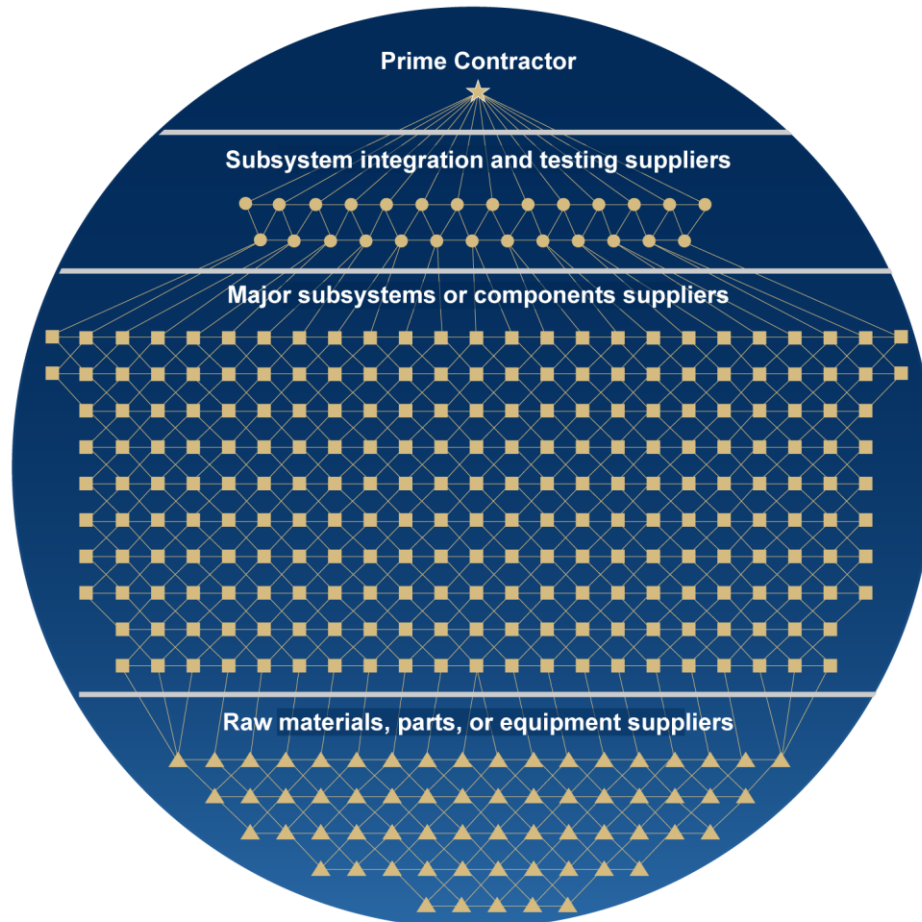


Source: *American Investment in the 21st Century*, Senator Marco Rubio (2010)





Defense Prime Supply Chain

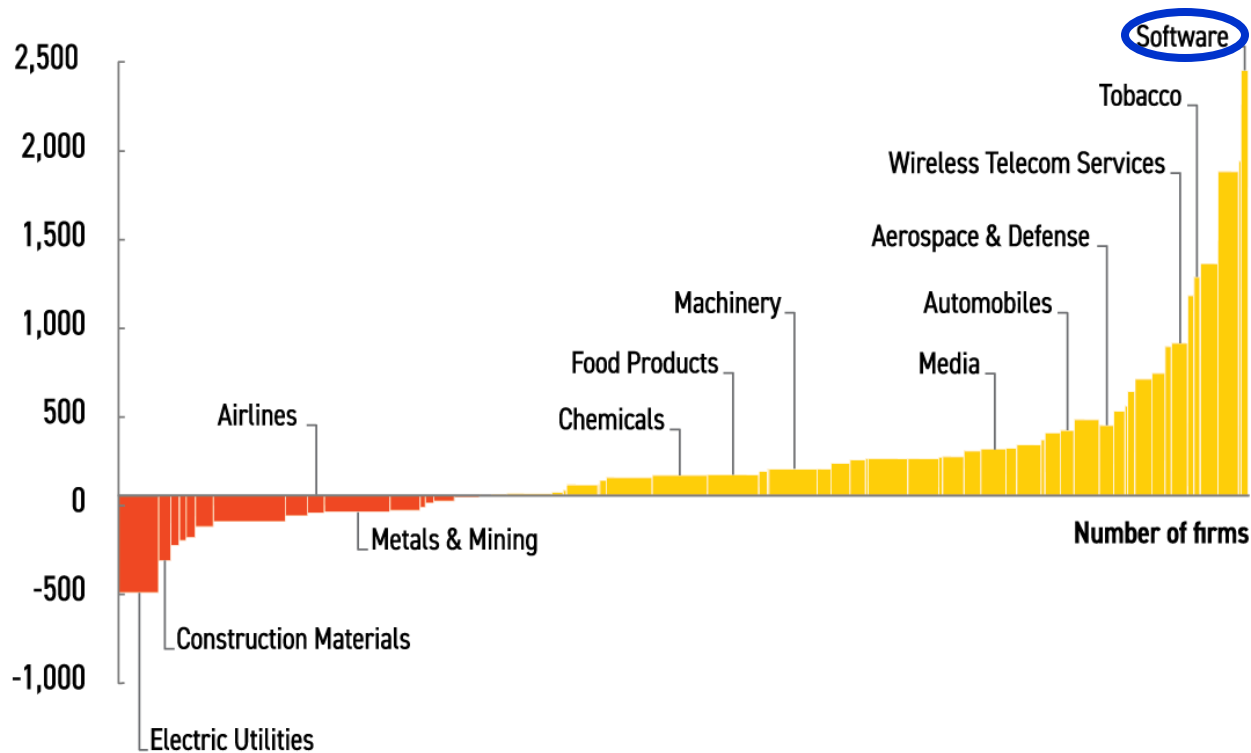


U.S. Power Curve Economy



Average profit by industry

Average annual economic profit of firms within each industry, 2010-14
\$ Millions, N=2,393



Source: "Is Your Strategy Good Enough to Move You Up on the Power Curve?" Martin Hirt, McKinsey & Company (2018)



USTR Jamieson Greer



- Why We Remade the Global order
- The U.S. has paid for the system with the loss of industrial jobs and economic security... the biggest winner has been China.



Treasury Secretary Scott Bessent



At the end of the day, the Administration can probably reach an agreement with Japan, Korea, Vietnam, & India. Then we can approach China as a group.



Oren Cass: one view

American Compass



- Tariffs are necessary to restore U.S. manufacturing
- U.S. has to force China to come to the negotiating table
- U.S. goal should be a collective perimeter that excludes China.



Graham Allison: another view

Foreign Policy July 29, 2025

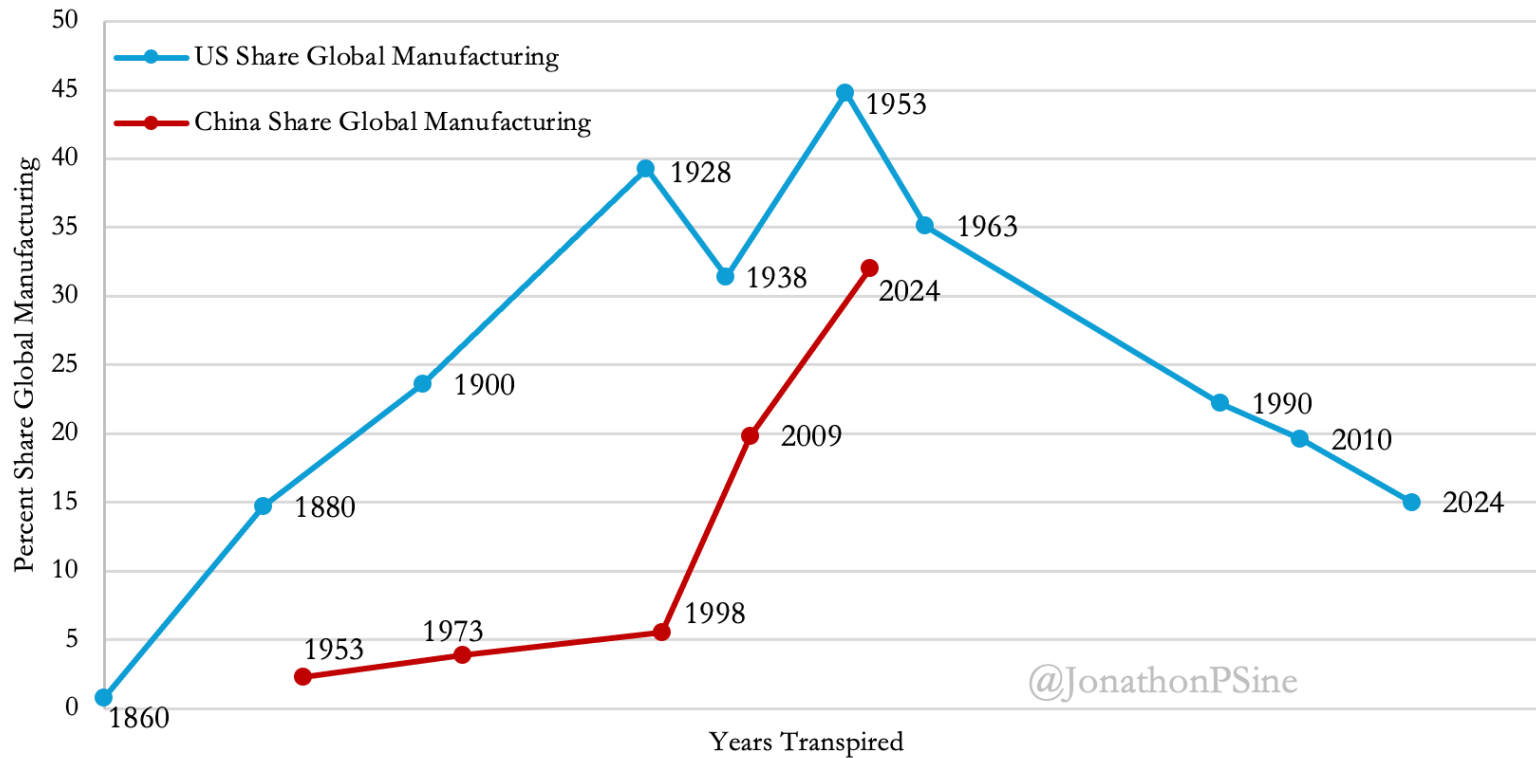


- A great rebalancing that allows a productive partnership
- “That dot is Taiwan; the desk is China.”



U.S. China Shares of Global Manufacturing

US vs China Share of Global Manufacturing (CN 70 Year Lag)

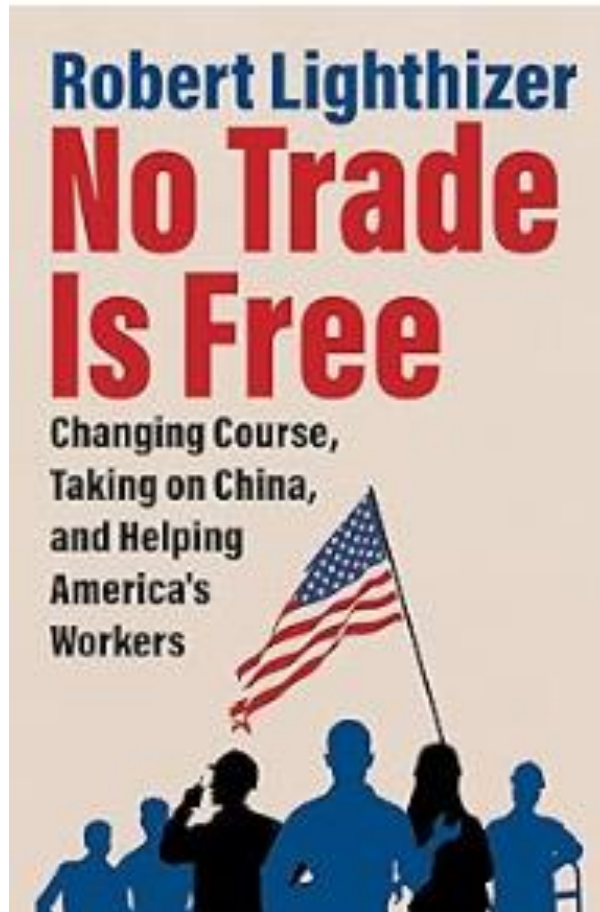


@JonathonPSine



USTR Robert Lighthizer

First Trump Administration

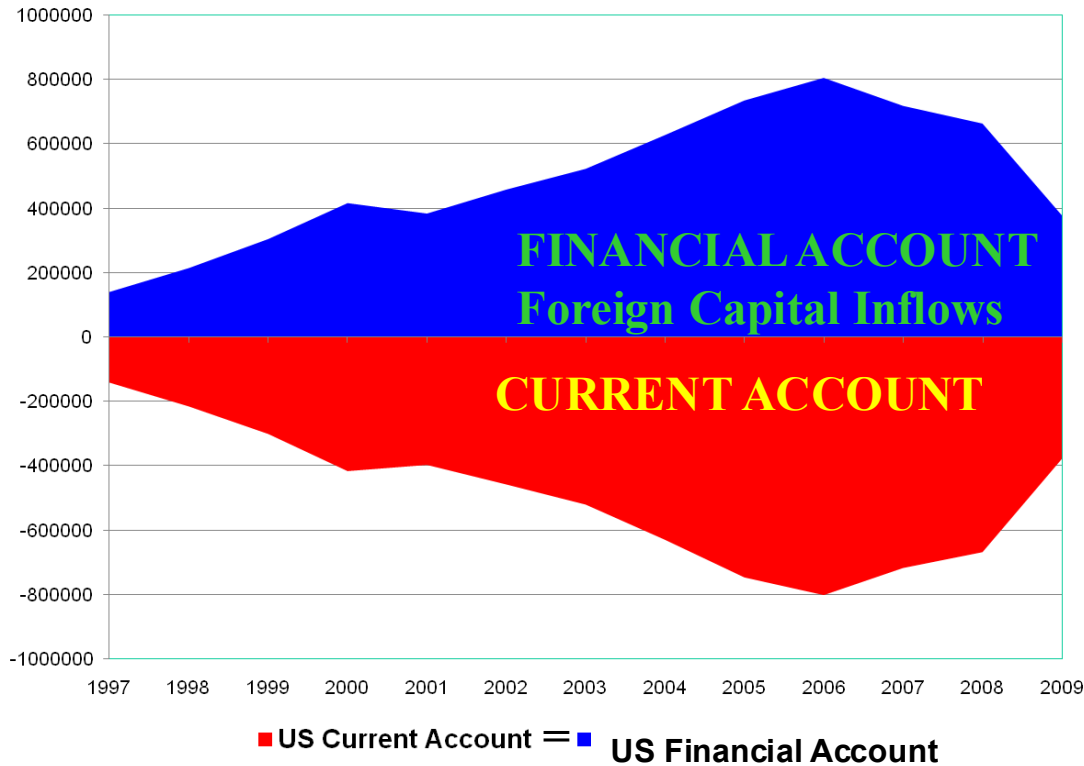


- Documented China's abuses
- Tried to get China to change

U.S. trade and capital flows



Capital inflows = trade outflows



Capital flows

Trade balance



Morris Chang

Founder of Taiwan Semiconductor Manufacturing Company

“The Americans like ratios, like RONA,.. Driving assets off the balance sheets drives the ratios up. I keep looking but, so far, I have not found a single bank that accepts deposits denominated in ratios. Banks only take currency. There is capital everywhere and it is cheap. **So why are the Americans so afraid of using capital?**”



China's EV juggernaut

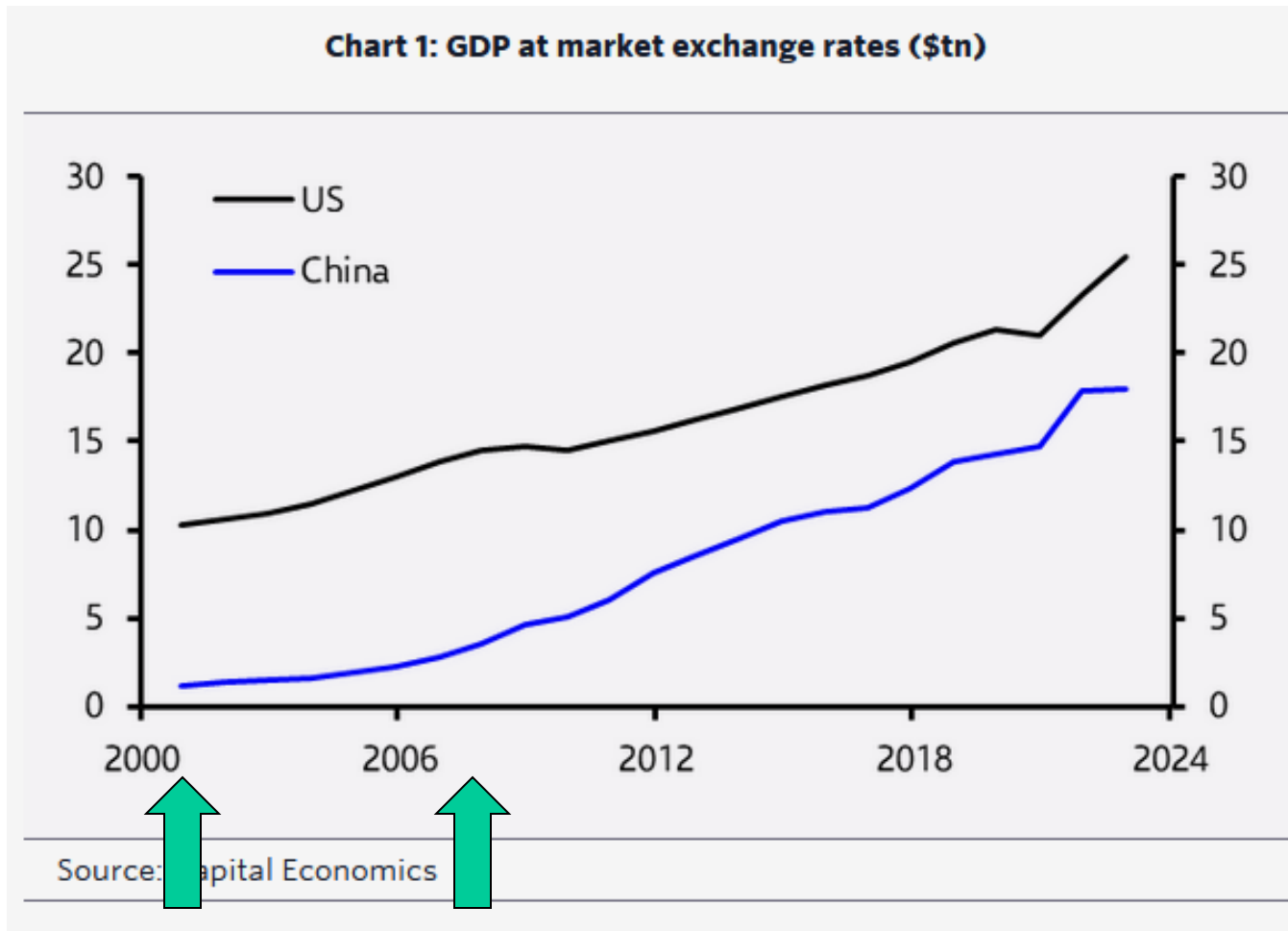
Taizhou smart factory





China's rapid rise in GDP

Market exchange rates

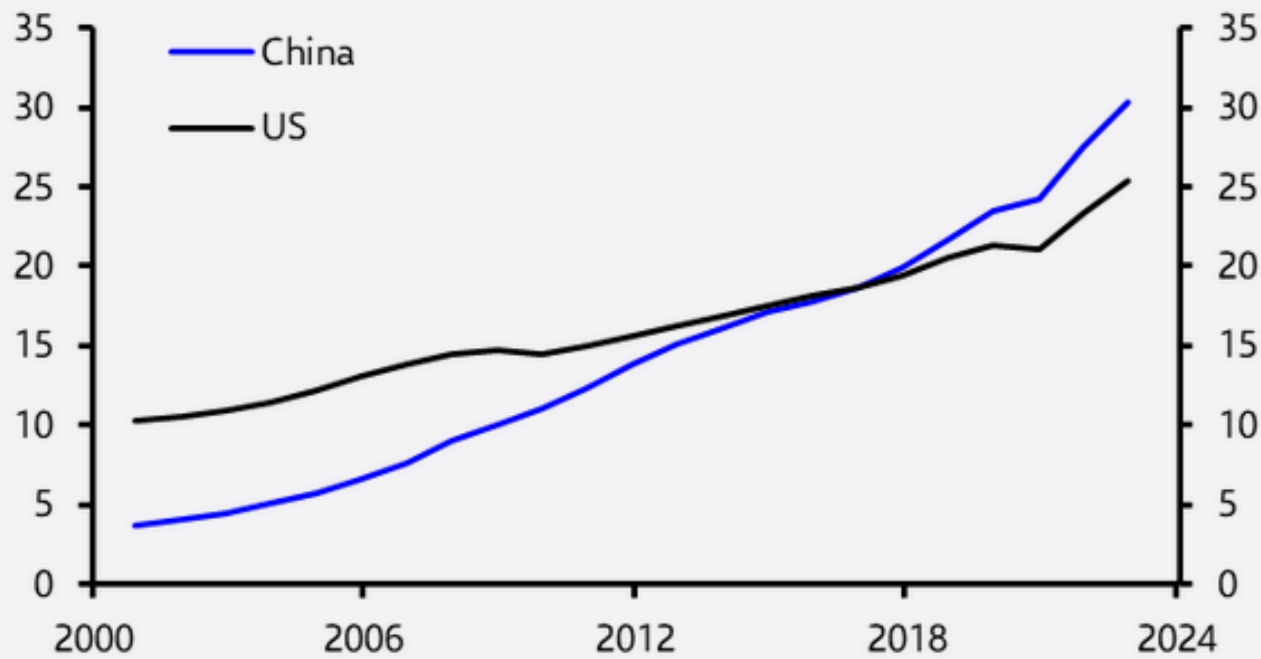




Largest GDP in PPP

Purchasing power parity

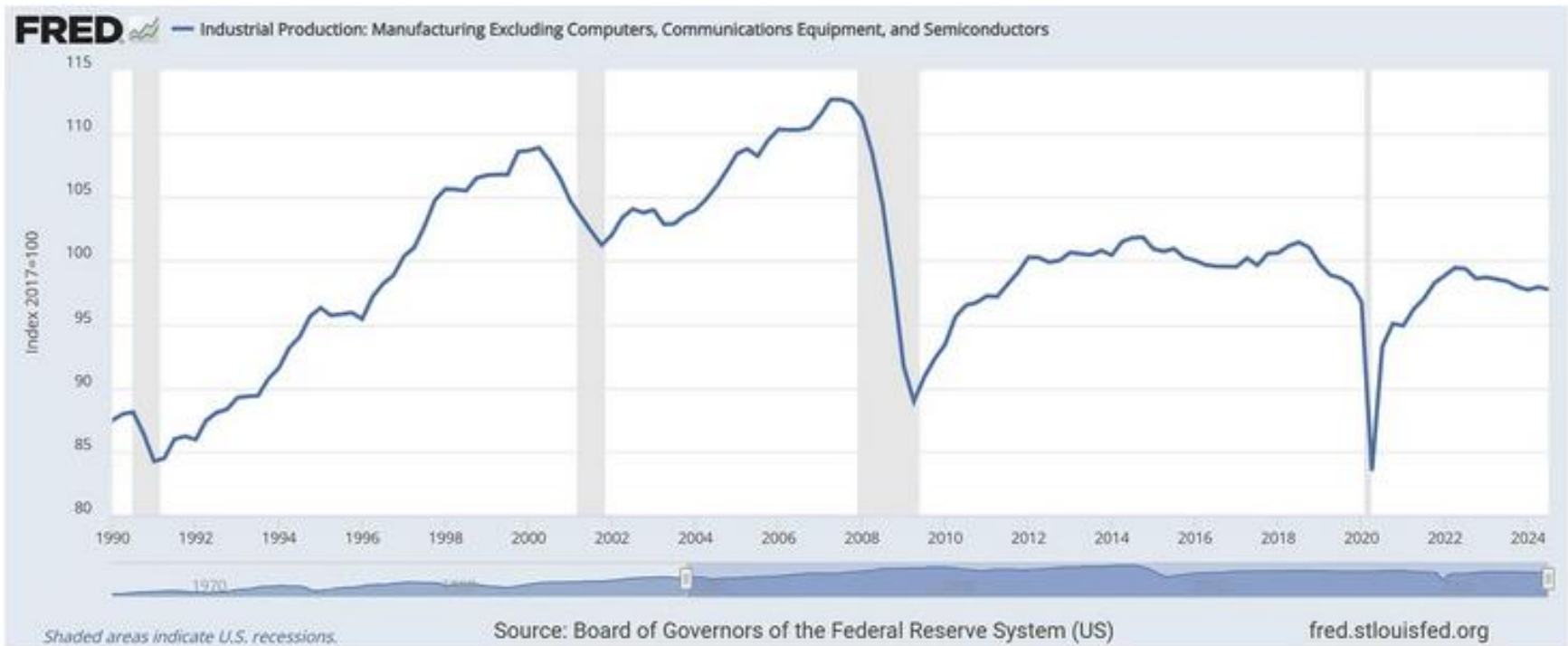
Chart 2: GDP at PPP exchange rates (\$tn)



Source: Capital Economics

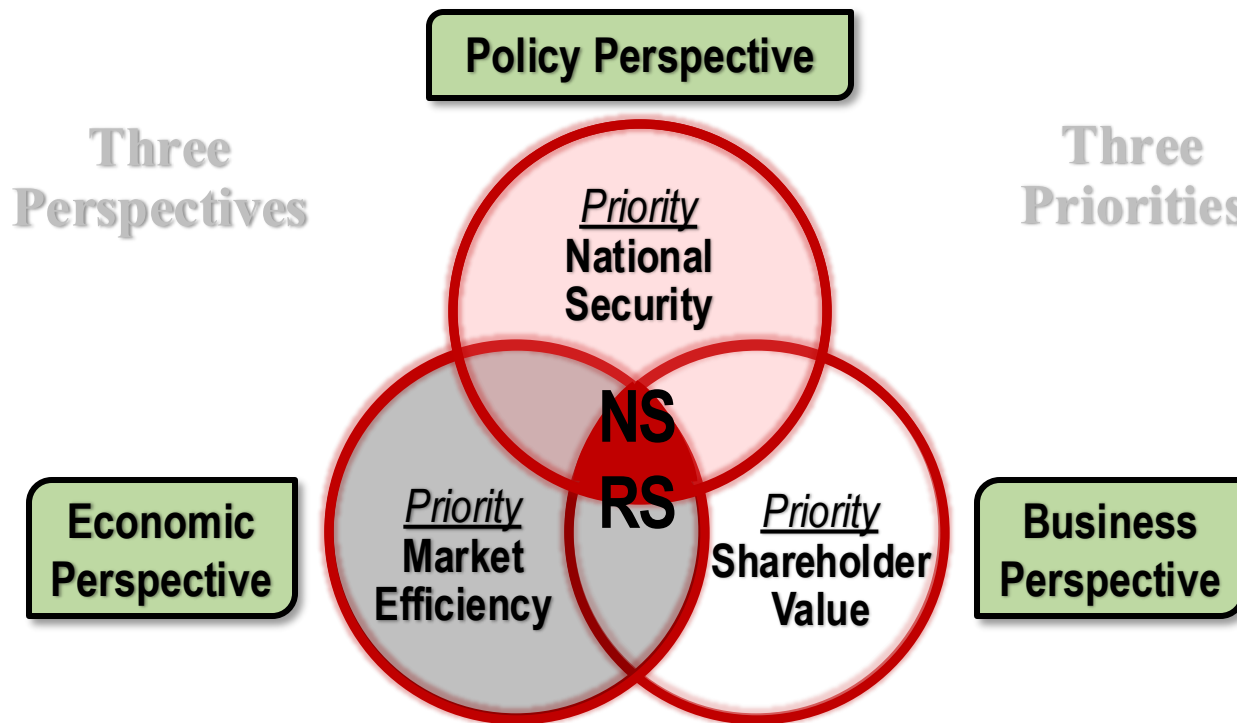


U.S. manufacturing output excluding computers & semiconductors





What does this mean for U.S. policy?





China's low consumption, high manufacturing

	U.S.	China
Share of global GDP	23%	17%
Share of global consumption	29%	13%
Share of global manufacturing	17%	31%



Super high investment

$$\text{GDP} = C + I + (X-M) + G$$



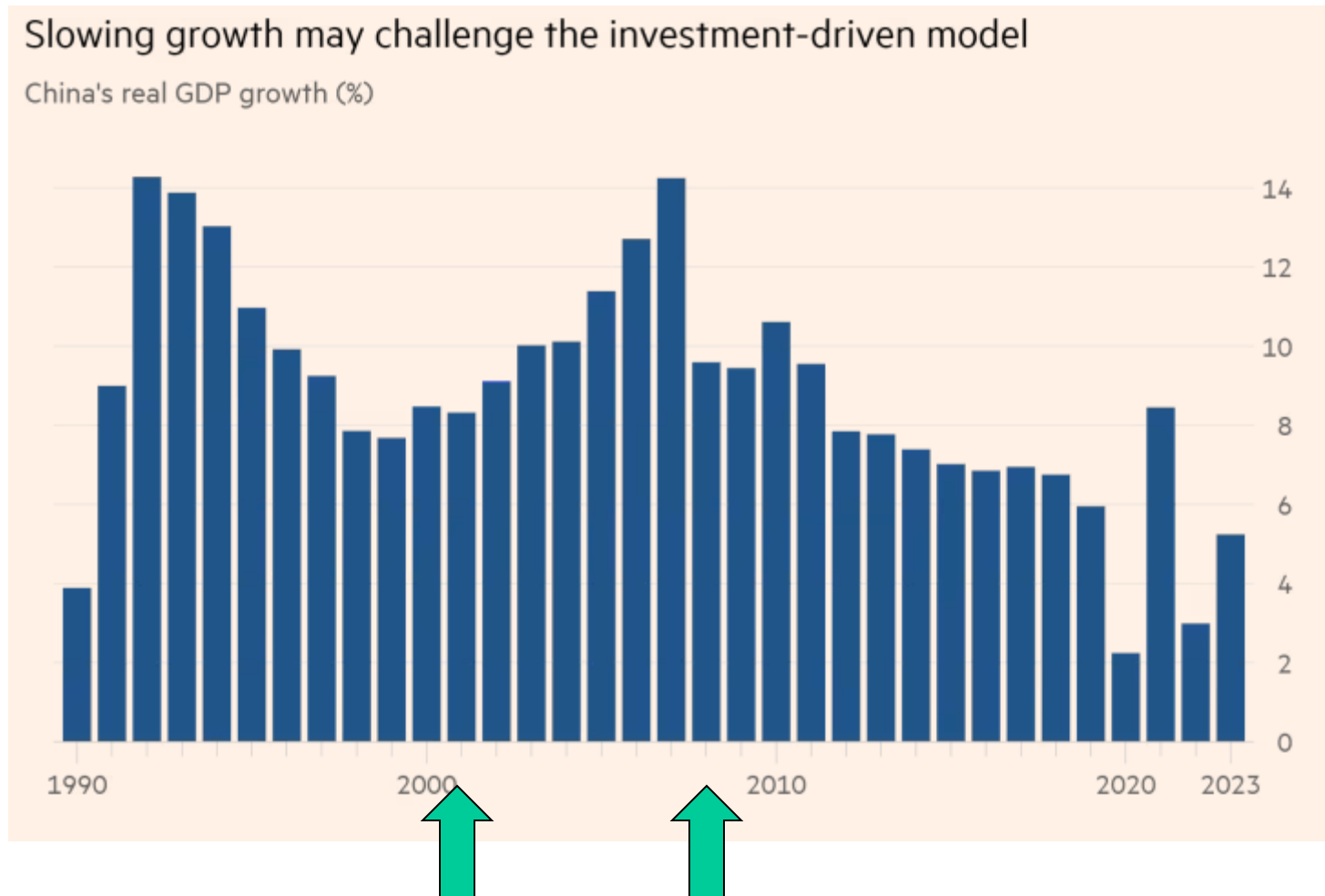
68% **16%** **-3%** **19%**



38% **43%** **+2%** **17%**



China's slowing growth rates





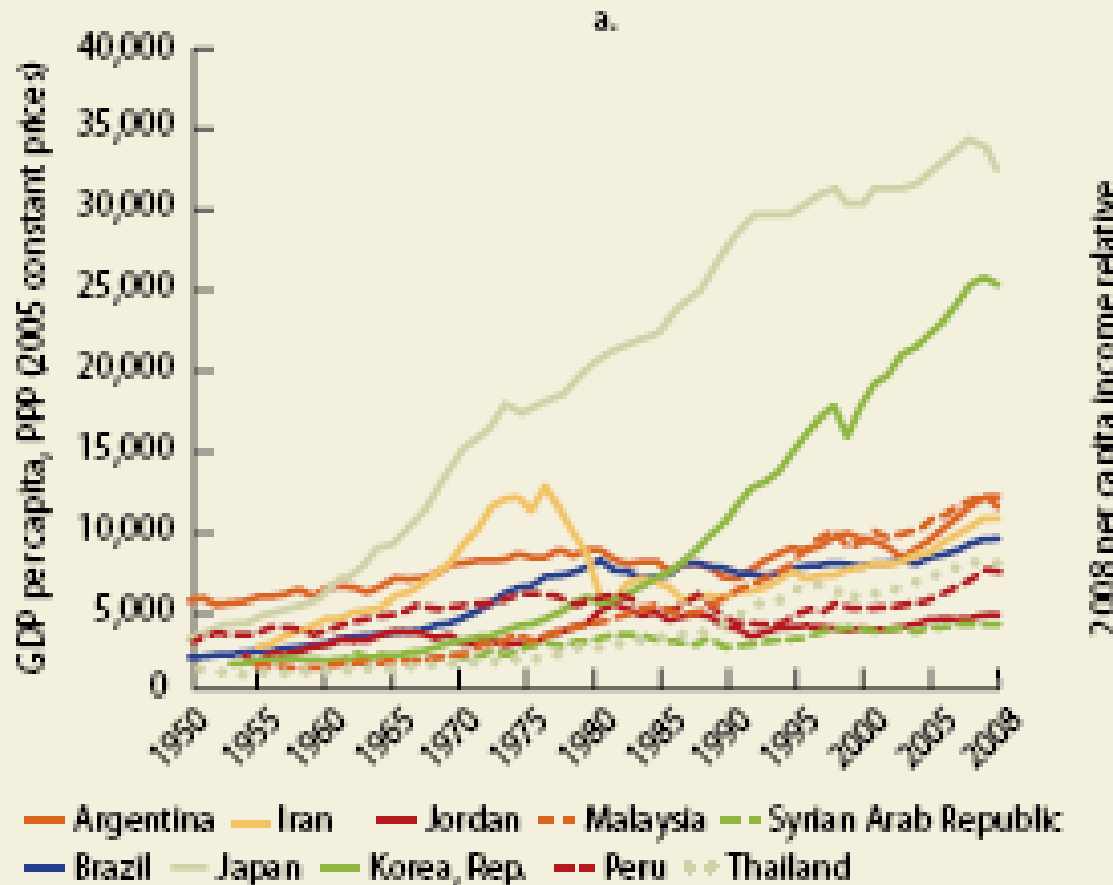
Coastal zones





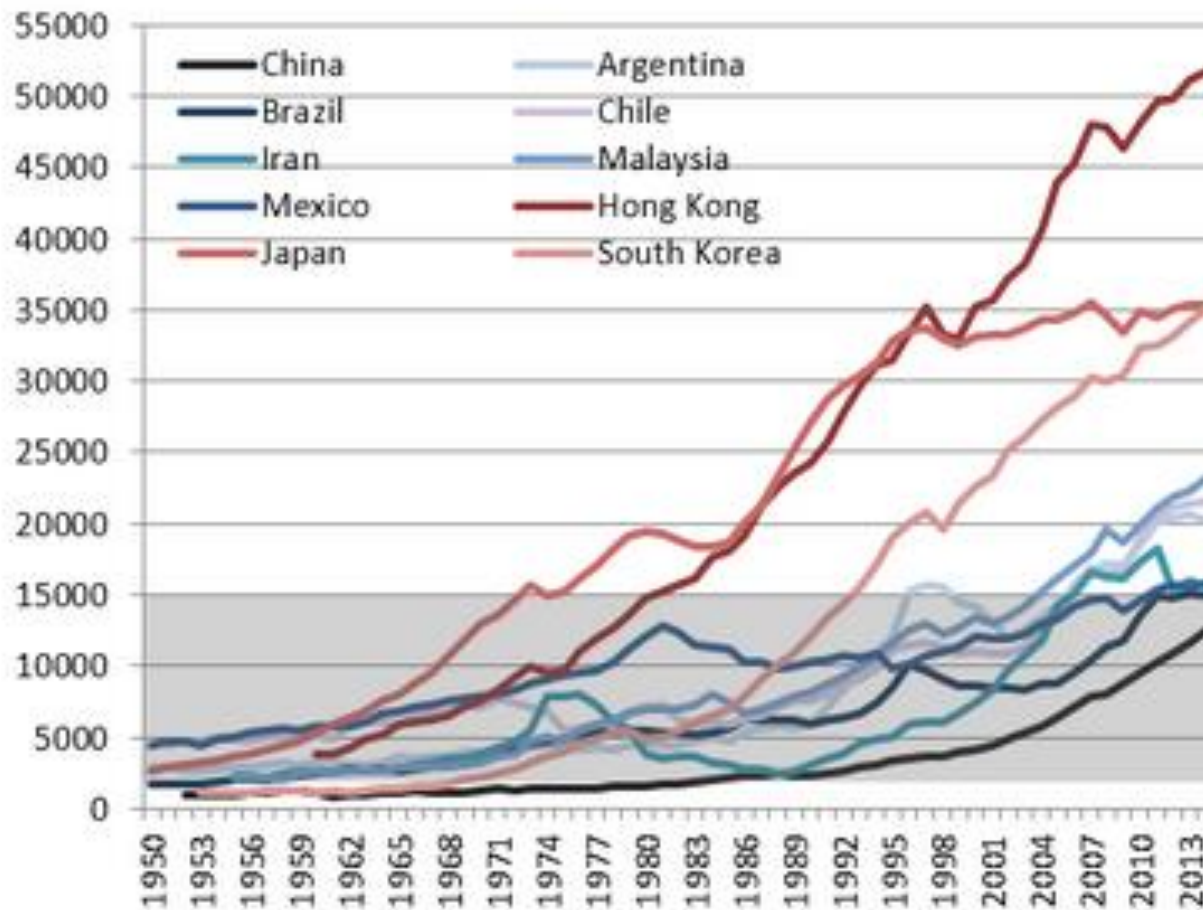
Japan & Korea broke out of middle-income trap

Box 1 Figure Few countries escape the middle-income trap



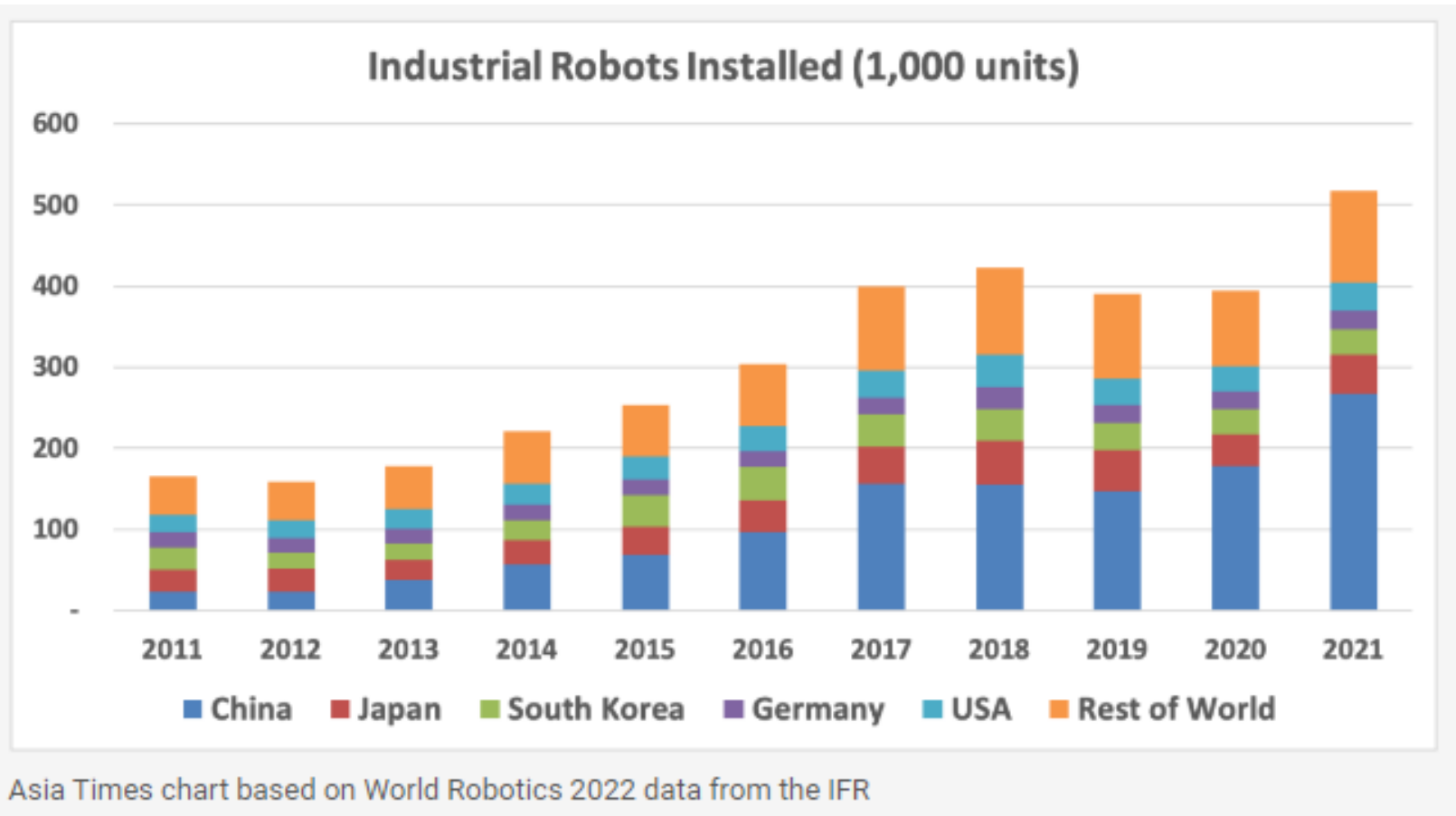


What if China does half of a Korea?





Robots: from minnow to whale in 10 years





No heed to ROE

- Kentara Aikawa, Chairman of Mitsubishi Heavy Industry, 1998:
 - “For some time, I have been asserting that the business practices of MHI puts **more stress on employment than profits**. We pay absolutely **no heed to such concepts as ROE...**
 - That is why I publicly comment that **MHI will not give its shareholders preference. If the stock has no appeal, the investors can sell it off straight away, but our employees do not have such freedom of choice.**”



How short-termism fails to invest in market creating & factories

The Economic Engine

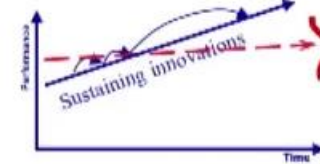
Market-Creating

Disruptive Innovations



Performance-Improving

Sustaining Innovations



Market Creating

Performance Improving

Efficiency

Empowering

Sustaining

Efficiency

Jobs

Creates

Limited

Eliminates

Capital

Uses

Limited

Frees

Efficiency Innovations

