

Chinese Economic Dynamism And Fragility

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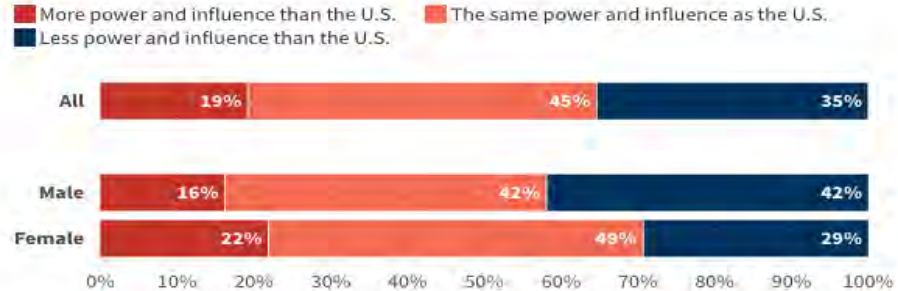
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Which China do you see?

- China--the world's largest economy in 2016? 2028? 2060?
- China confronted by vast economic-environmental-socio-political challenges

Figure 5. Most Americans think China's power equals or exceeds America's

Comparing the global power and influence between the U.S. and China, do you think that China has....



Source: Views on Global Power and Influence Survey, November 2025.

N=1,500

Note: Individual percentages will not necessarily add up to 100 given rounding.



Figure 6. Most Americans expect China to surpass the U.S. at some point

When, if at all, do you think China will surpass the United States in power and influence globally?



Source: Views on Global Power and Influence Survey, November 2025.

N=1,499

Note: This figure presents composite data from two survey questions, provided by YouGov.



Crossing the River by Feeling the Stones

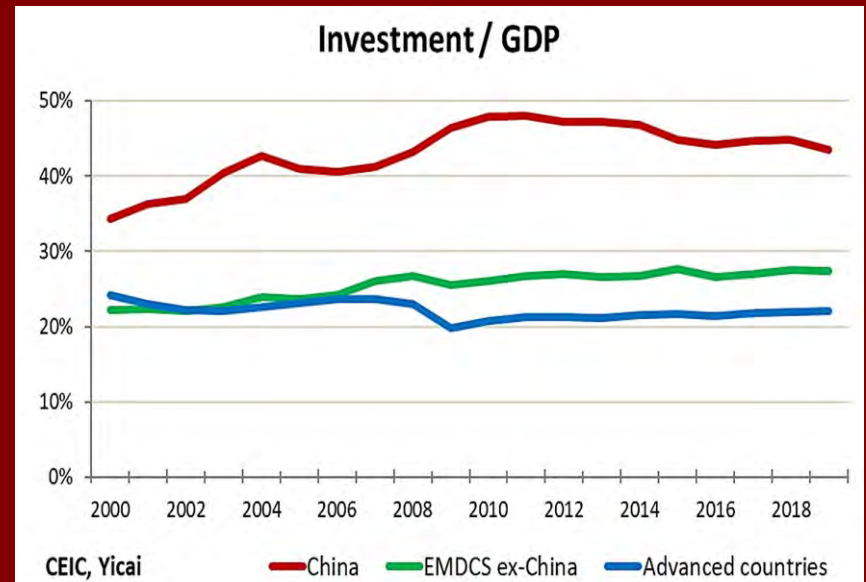
- Small, incremental changes have led to far-reaching structural changes
 - Lower-level initiative, consensus rule, pragmatism
- Not like Japan-welcoming to foreign capital (in most sectors)
- And not like Russia-economic reform first, with political reform indefinitely delayed?

Economic model with two pillars

Export-led growth

- Overall trade surplus of almost **\$1.29 trillion** (2025), as exports rose 20% from 2024;
- "World's largest surplus ever" NYT

Fixed asset investment



Chinese investment as a percent of GDP

Shift in Economic Focus Under Xi

- Quality of growth over pace
- "Common Prosperity"
- Reassertion of state in economy, especially strategic sectors
- Self-reliance/Dual Circulation
 - War economy

Science & Tech Superpower

Technology	Lead country	Technology monopoly risk
Advanced materials and manufacturing		
1. Nanoscale materials and manufacturing	China	high
2. Coatings	China	high
3. Smart materials	China	medium
4. Advanced composite materials	China	medium
5. Novel metamaterials	China	medium
6. High-specification machining processes	China	medium
7. Advanced explosives and energetic materials	China	medium
8. Critical minerals extraction and processing	China	low
9. Advanced magnets and superconductors	China	low
10. Advanced protection	China	low
11. Continuous flow chemical synthesis	China	low
12. Additive manufacturing (incl. 3D printing)	China	low
Artificial intelligence, computing and communications		
13. Advanced radiofrequency communications (incl. 5G and 6G)	China	high
14. Advanced optical communications	China	medium
15. Artificial intelligence (AI) algorithms and hardware accelerators	China	medium
16. Distributed ledgers	China	medium
17. Advanced data analytics	China	medium
18. Machine learning (incl. neural networks and deep learning)	China	low
19. Protective cybersecurity technologies	China	low
20. High performance computing	USA	low
21. Advanced integrated circuit design and fabrication	USA	low
22. Natural language processing (incl. speech and text recognition and analysis)	USA	low
Energy and environment		
23. Hydrogen and ammonia for power	China	high
24. Supercapacitors	China	high
25. Electric batteries	China	high
26. Photovoltaics	China	medium
27. Nuclear waste management and recycling	China	medium
28. Directed energy technologies	China	medium
29. Biofuels	China	low
30. Nuclear energy	China	low
Quantum		
31. Quantum computing	USA	medium
32. Post-quantum cryptography	China	low
33. Quantum communications (incl. quantum key distribution)	China	low
34. Quantum sensors	China	low
Biotechnology, gene technology and vaccines		
35. Synthetic biology	China	high
36. Biological manufacturing	China	medium
37. Vaccines and medical countermeasures	USA	medium
Sensing, timing and navigation		
38. Photonic sensors	China	high
Defence, space, robotics and transportation		
39. Advanced aircraft engines (incl. hypersonics)	China	medium
40. Drones, swarming and collaborative robots	China	medium
41. Small satellites	USA	low
42. Autonomous systems operation technology	China	low
43. Advanced robotics	China	low
44. Space launch systems	USA	low

Science & Tech Superpower

Quantum technologies

Technology	Tech monopoly risk	Top 5 countries				
Post-quantum cryptography	6/10 2.8					
		33.9%	12.1%	5.6%	5.1%	5.1%
Quantum computing	7/10 2.1					
		33.6%	15.9%	5.8%	5.7%	3.7%
Quantum communication	6/10 2.0					
		33.6%	16.8%	7.3%	6.0%	3.8%
Quantum sensors	2/10 1.0					
		24.1%	23.8%	7.7%	4.3%	4.1%

Sensing, timing and navigation

Technology	Tech monopoly risk	Top 5 countries				
Inertial navigation systems	9/10 4.5					
		48.5%	10.9%	3.9%	3.7%	3.6%
Multispectral and hyperspectral imaging sensors	9/10 5.5					
		53.7%	9.8%	3.7%	3.5%	2.7%
Photonic sensors	10/10 4.0					
		45.8%	11.4%	5.4%	3.8%	3.0%
Radar	10/10 3.4					
		42.7%	12.7%	5.1%	3.6%	3.2%
Satellite positioning and navigation	8/10 3.4					
		40.9%	12.2%	4.5%	4.2%	3.5%
Sonar and acoustic sensors	10/10 3.5					
		49.5%	14.3%	4.5%	4.1%	3.2%
Magnetic field sensors	6/10 2.1					
		35.2%	16.6%	7.7%	7.0%	4.6%
Atomic clocks	6/10 1.5					
		29.5%	19.4%	9.5%	7.3%	5.2%
Gravitational-force sensors	5/10 1.0					
		20.9%	20.8%	7.3%	6.4%	5.7%

Energy and environment

Technology	Tech monopoly risk	Top 5 countries				
Electric batteries	10/10 6.6					
		68.3%	10.4%	3.7%	2.4%	2.3%
Hydrogen and ammonia for power	9/10 11.1					
		60.8%	5.5%	5.1%	3.3%	2.6%
Supercapacitors	9/10 8.1					
		62.9%	7.8%	6.0%	3.6%	1.9%
Directed energy technologies	7/10 2.7					
		43.7%	16.4%	5.2%	4.6%	3.2%
Nuclear waste management and recycling	7/10 3.2					
		42.8%	13.3%	5.4%	4.9%	3.7%
Photovoltaics	7/10 3.4					
		31.1%	9.1%	7.1%	4.2%	3.3%
Biofuels	6/10 1.4					
		23.4%	16.7%	4.7%	4.4%	3.6%
Nuclear energy	5/10 1.7					
		31.6%	18.6%	5.2%	5.1%	4.3%

Does China Go Off the Rails?

- Economic challenges
- Energy
- Environmental degradation
- Demographics
- Unrest and malaise
- Consolidation of power

Economic Challenges

- Stalled rebalancing/weak domestic demand
- Dominance of SOEs/industrial overcapacity
 - anti-involution campaigns EVs, solar industry, "instant retail" battle in food delivery sector
- Local debt
- Rural underdevelopment
- Growing unemployment

Past Challenges

- State-owned enterprises: Progress over last decade but share of assets controlled still high (2006, 2007, 2008, 2009, 2013, 2014, 2015, 2016, 2017)
- Financial Sector: Continued reform but untested in downturn; significant missteps in 2015 (2006, 2007, 2008, 2017)
- Real estate bubble (2012, 2013, 2014, 2016, 2017)
- Inflation (2008)
- falling exports + slower growth + rising unemployment (2009)
- Global imbalances (2009, 2010)
- Overinvestment and inflated asset prices (2010, 2013, 2014, 2015, 2016, 2017)

China-U.S. Trade/Trump 2.0

U.S. trade deficit: \$361 billion (2024);

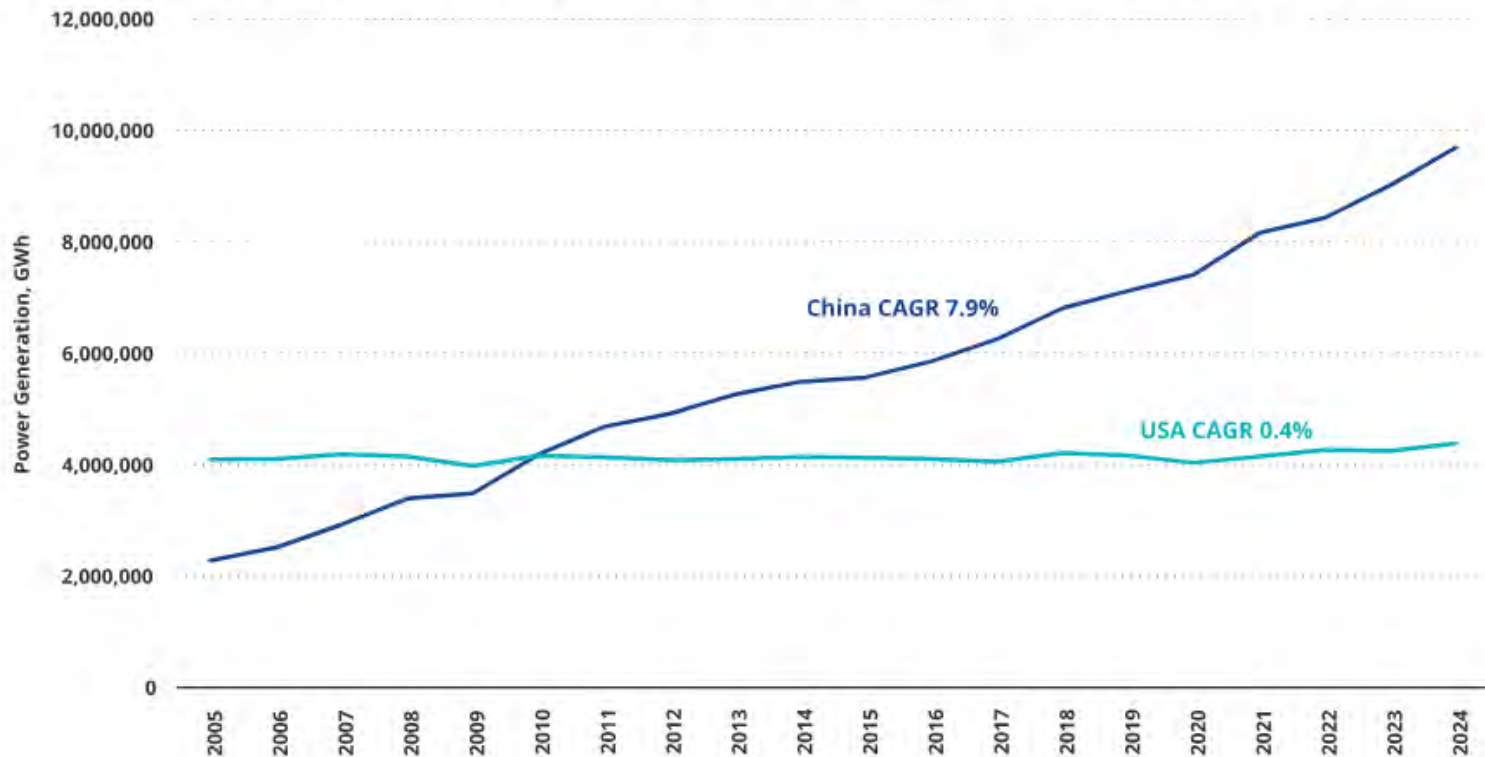
US	China
Feb 10% on all imports from China	15% on coal and LQP, 10 % on crude oil, ag machinery, large-engine cars
March: doubles the tariff on all Chinese imports to 20 percent.	up to 15% on key U.S. farm exports
April: "reciprocal tariffs" 34% tax on imports from China Trump says he will raise to 125%	China announces 34% percent tariff China also says 125% export restrictions on 7 types of rare earth
May announce 90 day truce, drops tariff rate	
June framework meeting	
October Busan US reduces tariffs, suspend 50% ownership law, port fees	China will lower tariffs, suspend rare earth controls, port countermeasure

Energy

- China's energy use has nearly tripled over last three decades, 3.4% annual growth in energy consumption in recent years
- Coal provided roughly 60% of China's energy in 2021
- 1.115 trillion cubic feet of technically-recoverable shale gas reserves
- 49 operational nuclear reactors, 16 reactors under construction

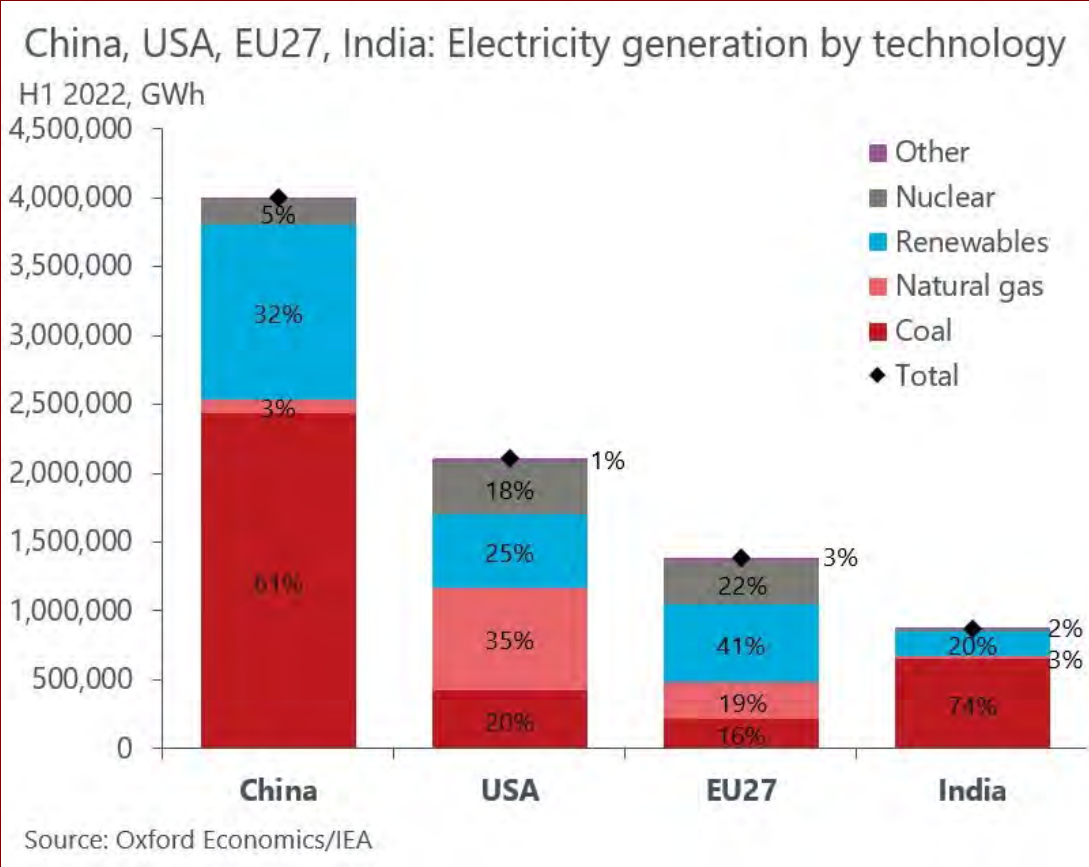
Energy

China's Capacity Expanded Nearly Fivefold While U.S. Growth Flat



Source: Bloomberg, VanEck. Power Generation, China and the U.S. (2005–2024).

Methods of electricity generation in China

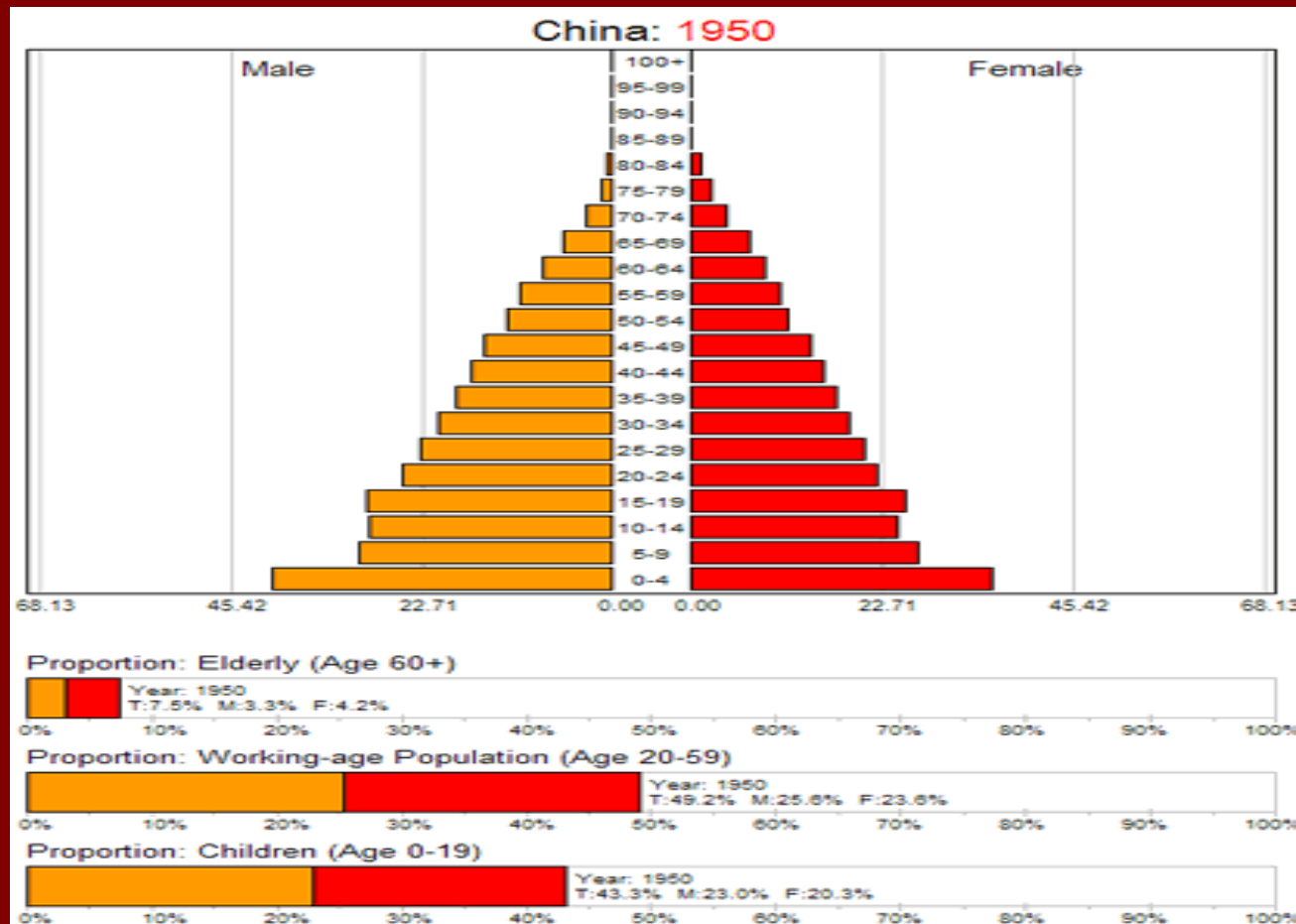


China, USA, EU27, India: Electricity generation by technology
([Source](#): Oxford Economics/IEA, 2022)

Environmental degradation



Will China get old before it gets rich?

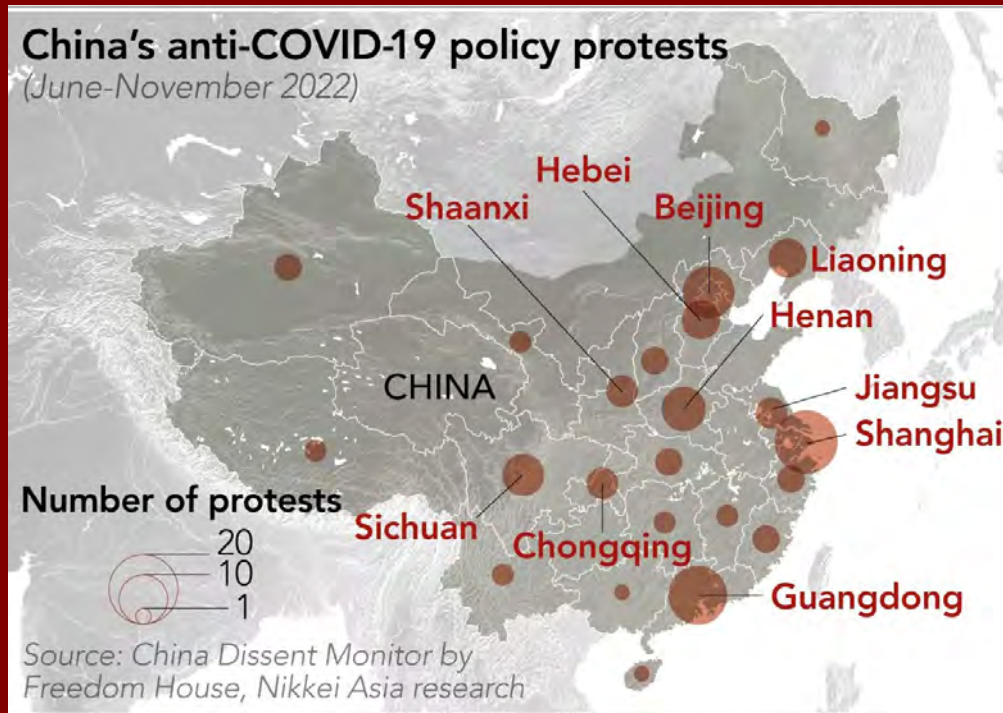


“Social conflicts are frequent and overlapping, and security risks and challenges, both foreseeable and hard to anticipate, are unprecedented.”

-National Security Strategy Outline, Jan 2015

- Gini coefficient passed the “alarm level” of 0.4 in 2005; now estimated at 0.47
- 58,000 protests in 2003; 180,000 mass incidents in 2010;
- In 2018, China spent more on domestic security (1.24 trillion RMB) than national defense (1.1 trillion RMB)

Civilians protest Zero-COVID policy



- Perhaps the most visible example of protest within Chinese civil society since Tiananmen
- Rebuke of China's 'zero-COVID' policy, which led to months of lockdowns and mandated testing in various cities
- Seems to have played a role in the u-turn in Chinese policy on COVID and opening back up

Anti-COVID-19 policy protests in China, June-November 2022

([Source](#): China Dissent Monitor by Freedom House, Nikkei Asia research)

Social malaise

- Rapid economic growth and gains in global market share comes at harsh individual cost to citizens
- Young people are "lying flat," overwhelmed by lack of social mobility and grueling, competitive system during education and into adulthood



Xi Jinping Consolidates Power



- Crackdown on civil society
 - Rise of surveillance state
- Over 2 million officials have been punished in anti-corruption drive, including both “tigers” and “flies”
- XJP Thought added to constitution, term limits ended; stacked Politburo Standing Committee

The Takeaway

- Not collapse, adjustment and grinding politics
- With the demise of engagement, what do we expect from competition?