

China

Archetype **Frontier superpowers**GDP / person **\$14k**Population **1407M**10-yr trend **5.8%**Gradual **18.4%** · #2Fast **33.8%** · #2

WHERE CHINA STARTS

China is one of only two frontier superpowers — the countries that own the models, the compute and the capital to run the AI frontier. The United States is the other. Its scores show why. Physical build speed is a top mark of 5 out of 5: the world's fastest build-out of power plants and data centers. AI diffusion capacity is 4.6 and geopolitical positioning 4.5. China runs its own model labs and about 7% of tracked training compute, almost certainly an undercount. What holds it back sits in two numbers. Compute and energy access scores 3.9, because export controls cap its supply of advanced chips. Demographics scores 1.9: the workforce is aging and shrinking. At about \$13,900 a person, China is upper-middle-income. Ten-year trend growth is 5.8% a year.

THE THREE PATHS

These are simulations, not forecasts. The Modest path is the baseline, and the two AGI scenarios fork from it. Under the Modest scenario, AI stays a normal technology. China would grow at 6.2% growth a year, 8th of 157, a shade above trend as its build-out feeds the domestic economy. Under **Gradual** takeoff, growth would climb through a two-decade ramp and reach 18.4% a year once AGI matures around 2045. That would rank China 2nd in the world, behind only the United States. An economy growing at 18.4% doubles in about four years. Its labs, compute and build speed would give the world its second frontier stack to draw on. Under **Fast** takeoff, growth would reach 33.8% a year from the early 2030s, a doubling every two to three years. China would hold 2nd place, its constrained chip supply the one thing keeping it just behind the American frontier. Regulation and politics could slow or redirect any of these paths. How China's people and its leadership respond to transformative AI is a variable the model holds constant.

HOW YOU WOULD KNOW WHICH WORLD YOU ARE IN

The three scenarios look almost identical until about 2030. In each, the late 2020s add only fractions of a point to growth. So watch leading indicators, not GDP, and check them live rather than trust any snapshot. Three global signals matter most. First, whether the METR task-horizon curve keeps doubling every four to five months through 2027–28; METR publishes it at metr.org. Second, whether frontier-lab revenue and capital spending keep compounding; Epoch AI tracks both at epoch.ai. Third, whether growth in the ten to twenty most-ready economies — the United States and China above all — breaks above trend in the early 2030s. Double-digit growth within a couple of years of 2030 would signal a fast world; a point or two above trend by the mid-2030s a gradual one; a fade back to trend a modest one. China's own signals would arrive earlier: whether domestic

fabs reach advanced nodes at volume, whether its open-weight models stay close to the frontier, and the pace of new power and data-center orders.

IF GROWTH GOES EXPLOSIVE

Explosive is relative. At 18.4% growth a year under Gradual, China would run just behind the American frontier at 19.5%, and well ahead of its region's median of 12.8%. Under Fast, 33.8% would trail the frontier's 39.2% but tower over the regional median of 22.5%. Either way, this is explosive by world standards. At the Fast rate the economy doubles in under three years, so a child born now would enter a country several times richer before finishing primary school. Manufacturing, already more than 90% of exports, would give way to compute, models and services sold to the world. Because the workforce is aging and shrinking, AI would arrive as a substitute for workers China will not have; faster growth would lift labor demand and wages, and reduce the pull for skilled Chinese to work abroad. The honest downside is chips. China rents its place at the frontier on terms set partly in Washington and Taipei, and export controls can tighten. The hedge is domestic and allied fabrication at volume. Even then, the pace-setter would shift to the state, testing how fast ministries, provincial governments and permitting offices can approve, adjudicate and count.

WHAT CHINA CAN DO NOW

Three levers follow from the scores, and two pay off whether or not AGI arrives. The first no-regret move is demographics, China's weakest high-weight factor at 1.9. Raising participation among women and older workers, and schooling people so they complement AI rather than compete with it, helps under every scenario. An aging, shrinking workforce is a problem even in the skeptic's world. The second no-regret move is catch-up headroom, at 3.2. Stronger institutions, deeper capital markets and openness to trade and investment raise absorptive capacity — the economy's ability to put new technology to work — whatever AI does. The third lever is the bet. Compute and energy access, at 3.9, carries the most weight of any factor and becomes China's single biggest lever under a fast takeoff, though it barely moves growth if AI stays ordinary. Closing it means volume production of advanced chips at home or with partners, while protecting the build speed that already scores a top 5. The United States is pursuing the same end through the CHIPS and Science Act, subsidizing domestic fabs; China can adapt the model to its own constraints. A cautious government can act on the two no-regret levers today and lose nothing. To see how moving these scores reshapes China's path under each scenario, open the atlas's [policy editor](#).

The three levers — and which pay off regardless

Demographics & migration

score 1.9 / 5 · weight 12 under skeptic → 6 under fast takeoff

Counts under the Modest scenario too (12→6). Closing this gap pays off whether or not AGI arrives.

No-regret

Catch-up headroom

score 3.2 / 5 · weight 16 under skeptic → 6 under fast takeoff

Counts under the Modest scenario too (16→6). Closing this gap pays off whether or not AGI arrives.

No-regret

Compute & energy access

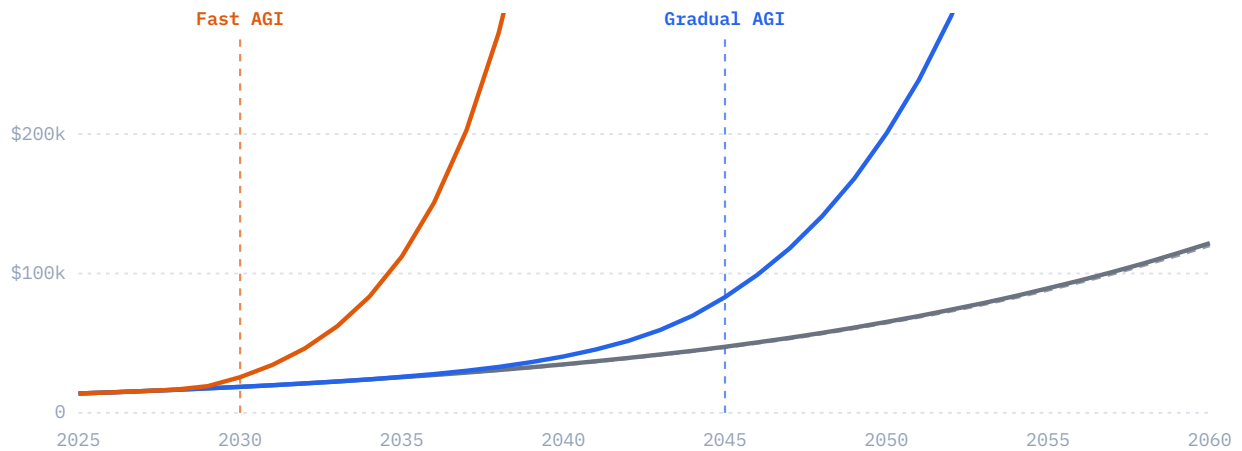
score 3.9 / 5 · weight 8 under skeptic → 24 under fast takeoff

Weight climbs from 8 to 24 as takeoff nears. It barely moves growth if AI stays ordinary — the lever that needs a view on the takeoff.

AGI bet

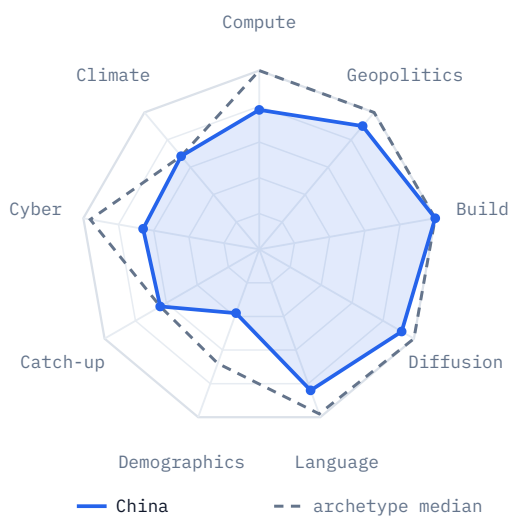
The no-regret levers pay off in every scenario, so a cautious government can act on them today. The AGI bet becomes decisive only if takeoff is real.

GDP per person to 2060, by scenario



Linear scale; solid lines are the three scenarios, dashed grey the no-AI baseline. Growth ramps from 2027 to each scenario's rate at its AGI year (Fast ~2030, Gradual ~2045), then holds. Timing and divergence are the point, not end levels; steep paths exit the top of the capped axis.

The nine factors



Solid: China. Dashed: the median of its archetype. Scores are relative to the other 156 countries (3 ≈ global median, 5 = leading today).

Outcomes under each scenario

SCENARIO	GROWTH / YR	WORLD RANK	INDEX	DOUBLING
Modest	6.2%	8 / 157	75.6	11.5 yrs
Gradual	18.4%	2 / 157	77.1	4.1 yrs
Fast	33.8%	2 / 157	80.7	2.4 yrs

Post-AGI growth rate, rank among 157 countries, AGI Growth Index (0–100, scenario-weighted), and the implied economy doubling time. The Modest path is the baseline the AGI scenarios fork from.

THE THREE SCENARIOS

Modest the Acemoglu view

AI as a normal productivity tool

Intelligence was never the binding constraint on growth, so AI delivers real but ordinary gains. Each country gets a one-time boost of a couple of percent of GDP, phased in through 2035; growth then returns to trend. The mainstream-economics view.

≤0.66% TFP over a decade — a one-time gain

China: 6.2% growth a year · #8 of 157

Gradual Erdil & Besiroglu, base case

Broad automation, on a long timeline

Broad automation of remote work arrives around 2045, with gains building slowly from the late 2020s. Growth then reaches up to ~20% a year for the best-positioned countries — ten times today's frontier trend. A slow arrival gives countries time to adapt, so the gains are wide but uneven.

up to ~20%/yr after 2045 — 10× the frontier trend

China: 18.4% growth a year · #2 of 157

Fast Erdil & Besiroglu, fast takeoff

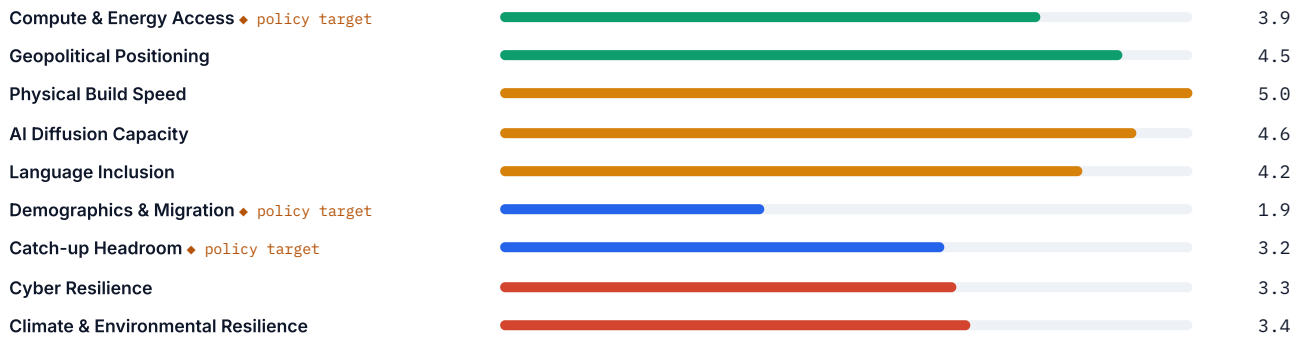
Fast takeoff — today's infrastructure decides

Transformation lands around 2030, before countries can adjust. Whoever already owns compute, capital and the ability to build wins; the gap between countries widens dramatically — and some are left growing slower than they would have without AGI.

up to ~40%/yr from 2030

China: 33.8% growth a year · #2 of 157

Factor scores — and where policy bites



♦ marks this country's highest-leverage policy targets: the weakest factors carrying the most weight under the AGI scenarios. The atlas's interactive policy editor (agigrowth.org/#editor) simulates how raising any score changes growth under each scenario.

Archetype: Frontier superpowers

Own the models, the compute and the capital: the two countries running the frontier.

Wins: Early, and they set the rules everyone else plays under.

Watch: US: permitting and grid; China: chip access and demographics.

United States **19.5%** · #1

The regional picture — The supply chain lives here.

China is the only country running a frontier AI stack outside the United States — about 7% of tracked training compute (almost certainly an undercount), its own model labs, and the world's fastest build-out of power and data centers. Export controls cap its chip supply; its answer so far has been efficiency and open-weight releases that stay close to the frontier — which also makes China the second source of models for much of the world. Japan, South Korea and Taiwan hold the chokepoints: equipment and materials, memory, and fabrication. That makes them indispensable — and makes Taiwan the single greatest concentration of economic risk on the planet. All three are aging fast; Japan's population falls from 123 to about 100 million by 2060 in the projections used here, so AI arrives as a substitute for workers they will not have. The region's next twenty years turn on two questions: whether the chokepoints stay open, and whether China's constrained path converges with the US frontier or falls behind it.

Method, in brief

Each country is scored 1–5 on nine factors from public data (World Bank, Epoch AI, ITU, IMF and national sources). A scenario-weighted average forms the AGI Growth Index (0–100), which maps to a post-AGI growth rate inside ceilings derived from Erdil & Besiroglu (2023): ~20% growth a year for the best-positioned country under Gradual takeoff (AGI ~2045), ~40% under Fast (AGI ~2030); growth ramps convexly from 2027. The scenario sets the growth rates on offer; the index only decides where each country sits within them. The Modest scenario is the skeptics' baseline — a small uplift on each country's own ten-year trend. These are simulations for structured thinking, not forecasts; no probabilities are attached to any scenario.

Watch the global signals live: the METR task-horizon curve at metr.org/time-horizons · frontier-lab revenue at epoch.ai/ai-companies · AI-chip spending at epoch.ai/ai-chip-sales.

Explore further: full methodology agigrowth.org/#methodology · map & rankings agigrowth.org/#explore · country profiles agigrowth.org/#countries · policy editor agigrowth.org/#editor