

# Investment Recipes

by  AtonRā Partners



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# Editorial

In this issue of our Investment Recipes we focus on China. After transforming its economy from agricultural to industrial, China is now vying for high-tech, and investing heavily to leap ahead of western leaders. Indeed over the recent past the Celestial Empire has been stepping up its efforts to power its growth engine by continuing its path toward modernization. Given the Chinese track-record in reaching ambitious goals, coupled with the political will and financial firepower, this appears to be a question of when more than if.

As such, China is a driving force to be recognized in each and every one of our investment themes. Across this issue, we aim at presenting how China is impacting the competitive landscape across our investment universe, and we added an introductory Macro section, focusing on the outline of the upcoming Five-Year Plan, which will be released in full detail next March.

The AtonRâ Team



# CHINA – MACRO VIEW

## Latest Five-Year Plan Says It All

### China is focusing on technology and sustainability

China issued the outline of its 14th Five-Year Plan (FYP) at the end of October. Even if no specific numerical targets have yet been given, it is stated that China is set to “achieve socialist modernization” by 2035 and to reach that goal, China is focusing on sustainability and technology.

- Economic transformation from high growth to sustainable high-quality growth.
- Innovation, self-sufficiency in core technologies, and greener economy are “strategic pillars” for its future economic development.

### Dual Circulation

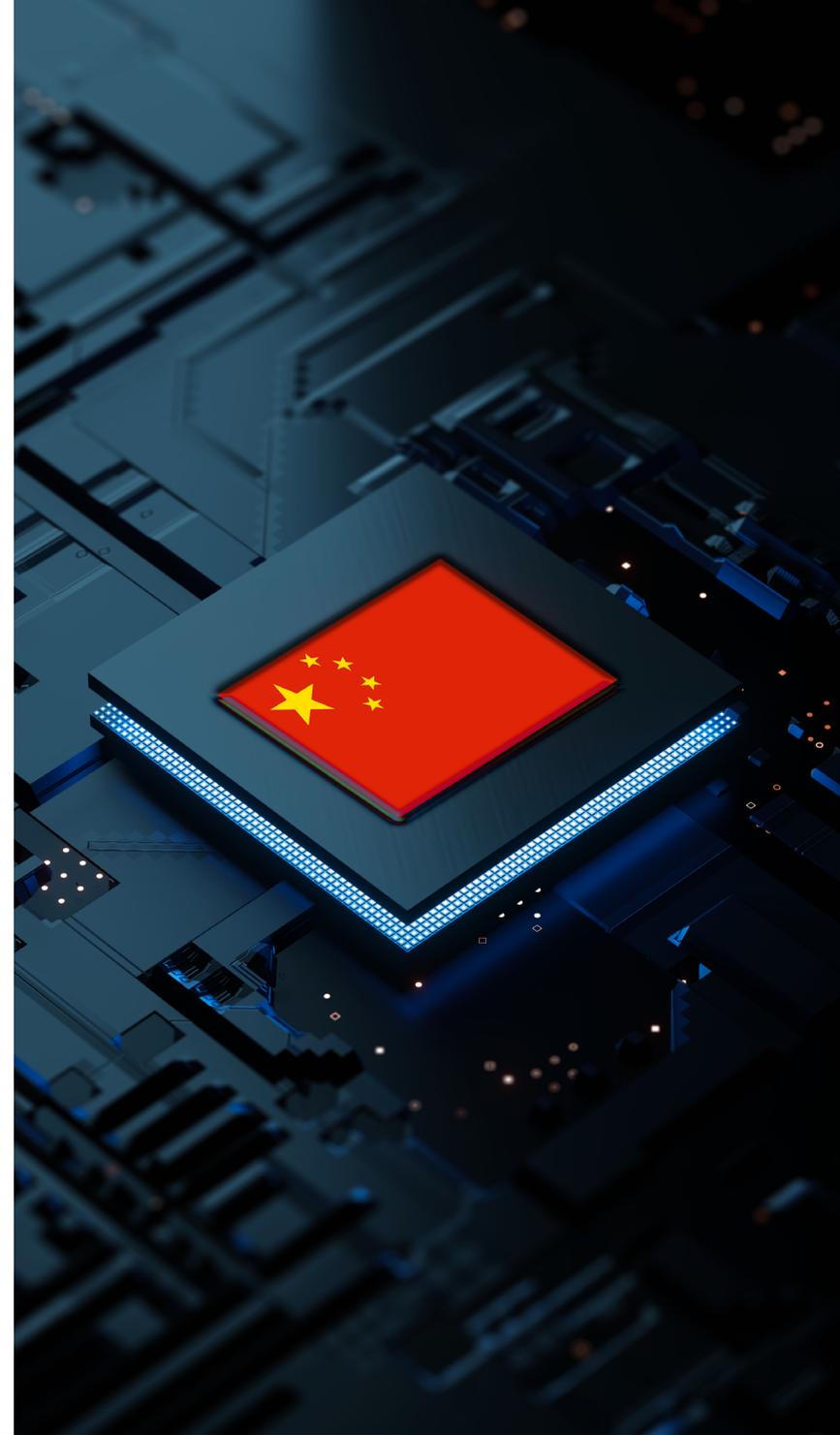
The key word in the FYP, “Dual Circulation” implies boosting the economy’s internal circulation by making domestic production and consumption the main engines of growth with external foreign investments playing only a supportive role.

- Tax breaks, investments and incentives are likely to be offered to local companies in key sectors such as semiconductors, AI, data centers, biotech, renewables, etc.
- Increase in domestic demand will drive infrastructure and R&D spending from both private and public sector towards healthcare and sustainable technologies.

### A shift towards China’s domestic players

As China implements its FYP, domestic players will be the greatest beneficiaries as the trend towards a more leveled global playing field intensifies.

- Domestic players are likely to outpace most western players exposed to the Chinese market.



# LONG MARCH TO TECHNOLOGICAL SELF-SUFFICIENCY

## China Aims For The Stars

### No other choice than astronomical investment amounts

The country's demography and manufacturing leadership call for massive investments in AI and robotics. China's drive to technological leadership and huge domestic market unlock many investment opportunities.

- The social contract leaves no options for a slowdown in GDP growth, so China is likely to spend whatever it takes in order to catch up with western countries in the high-tech arena.

### This time is different

Multiple five-year plans had mixed results but do not imply the country cannot leapfrog. China is now recognized as a research powerhouse and its startup ecosystem is both normalizing and leveraging public money to maximize chances of success.

- The 14th five-year plan is finally explicit about technology goals and the recent tensions with the U.S. have shown how fragile the Chinese ecosystem is.

### Robotics and automation

China is still heavily relying on U.S. companies for silicon chips and software platforms, and European's for robotics. Yet, the country proved successful with artificial intelligence applications such as drones and autonomous vehicles.

- China is by far the largest country for robotics, and accelerating its investments.
- Autonomous vehicles (AVs) are likely to succeed in China before anywhere else, as the Chinese have a different history with car ownership.

SOURCE:  
International Federation of Robotics,  
[Wikipedia images](#)



# Technology Is The New Oil

## China economy is growing old

2020 is expected to see a demographic reversal, with elderly outnumbering young people. Such trends are impacting the potential growth of the country and the secular social contract based on a growing GDP-per-capita.

- China is the world's factory, yet its huge labor pool and vast talent availability is likely to grow problematic – calling for wide-ranging investments in automation.
- Additionally, China is aiming to catch up with western countries, and artificial intelligence & robotics are the hallmarks to reach technological leadership.

## The first ever five-year plan with a dedicated chapter about technology

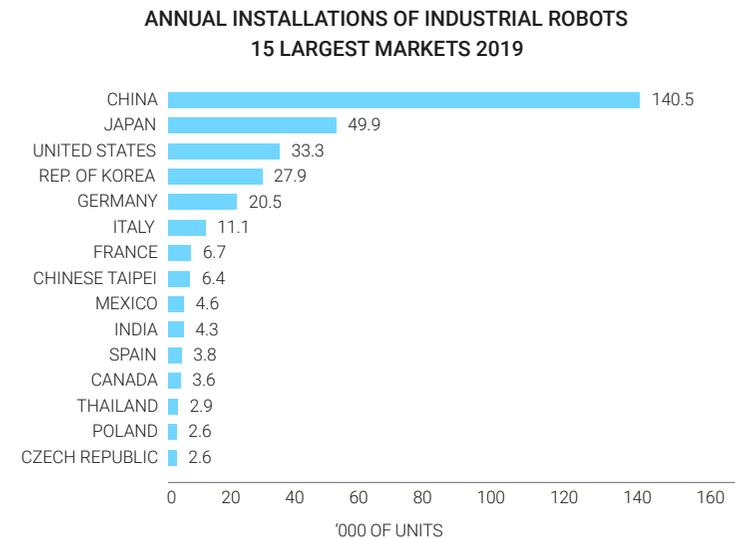
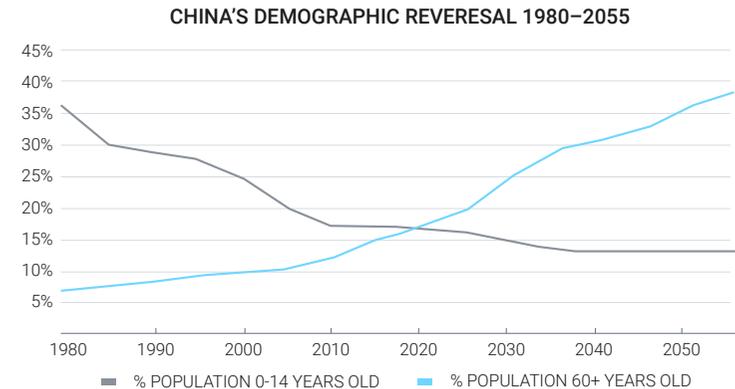
China's latest five-year plan is quite explicit about the country's ambitions to become the world's top innovator and to be entirely technology self-sustaining by 2035. Such ambition is instrumental in improving productivity to climb the income ladder.

- The 14th five-year plan vows to put GDP-per-capita roughly on par with South Korea.
- China is targeting finance, healthcare, autonomous vehicles, and clean technologies.

## Decoupling from the U.S. is not realistic

China is doubling down on opening-up, normalizing its business environment and commercial relations, yet evolving from globalization to strong domestic support, regionalism and further embracing foreign investments:

- The dual circulation development pattern implies domestic and foreign markets can boost each other, while the domestic market remains the mainstay.
- China is leading the Regional Comprehensive Economic Partnership (RCEP), the world's largest free trade agreement with ~29% of the global economy.



SOURCE:  
COLLECTIVE RESPONSIBILITY, International Federation of Robotics

# A Long Way To Go For Chinese Semiconductors

## A massive but highly-dependent ecosystem

Semiconductors are China's biggest import by value, exceeding \$300bn and ahead of crude oil. About 35% of the global semiconductor production is sold in China, but only 16% of the semiconductors used locally are produced in the country.

- SMIC, the largest mainland foundry, sources 50% of its equipment from the U.S.
- China has a lot to catch-up to serve its domestic needs, as we [previously wrote](#).

## Much promise, mixed results

The National Integrated Circuit Industry Investment Fund and other regional funds have distributed more than \$200bn to move China up the manufacturing curve – with mixed results.

- GlobalFoundries' joint venture in Chengdu stopped operations less than three years after a \$10bn investment was announced by local authorities.
- HSMC attracted ~\$19bn of investments and subsidies, yet reports suggest that the company is facing financial fallout and risks bankruptcy.

## Pivoting to higher-end innovation

Despite large investments, China has never really been able to catch up. So, rather than playing the imitator, Chinese players are investing to leapfrog.

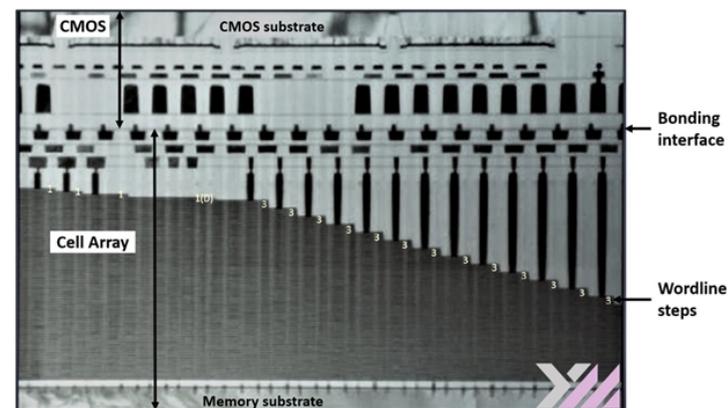
- Yangtze Memory Technologies Co. (YMTC) demonstrated technological lead with the highest unit density, single-chip capacity, and fastest NAND.
- Alibaba presented the world's fastest open-source RISC-V processor yet. While still lagging ARM or x86 counterparts, it demonstrates early capabilities to compete on chips geared for artificial intelligence.

SOURCE:  
IC Insights, YMTC, AtonRā Research,  
[Unlocking the Secrets of the YMTC 64-Layer 3D Xtacking® NAND Flash](#)

CHINA INTEGRATED CIRCUITS (IC) MARKET VS PRODUCTION TRENDS



Cross-section of YMTC Xtacking technology – hybrid integration of 3D NAND and CMOS control logic



## Artificial Intelligence – Vying For Leadership

### U.S. and China are investing heavily in artificial intelligence

Artificial Intelligence is a general-purpose technology that applies across many domains, with a deep economic and strategic impact. Although China is publishing and patenting more, U.S. companies are leading the commercial sector.

- China AI investments represent ~60% of global AI spending.
- China is likely ahead in technologies like facial recognition and smart surveillance, thanks to its easy access to data – raising a few controversies.

### Different approaches for a non zero-sum game

The U.S. and Chinese economic stages are quite different, with the U.S. being more service-oriented and China looking to improve its manufacturing and labor output. Nonetheless, China has built leading positions in a few application domains.

- Alibaba, the world's largest e-commerce marketplace, leverages AI chatbots recommendation engine, and autonomous warehouse robots to cope with the Singles Day online shopping frenzy – with revenues of ~\$75bn in a single day.
- Hikvision and Dahua are leading the global market for video-surveillance with innovative solutions and started taking positions in robotics.

### Land of the raising stars

China AI start-up ecosystem counts at least 14 unicorns, supported both by public funding and the domestic internet giants (Baidu, Alibaba, Tencent).

- SenseTime raised \$600mn from Alibaba Group Holding and other investors, in what was reportedly the biggest fundraising round ever in the sector.
- Tencent-backed UBTECH Robotics achieved a valuation of \$5bn following the single largest funding round ever for an AI non-listed company.

SOURCE:

Tsinghua University – Annual report on China AI Development,  
China Money Network, Alibaba, McKinsey, [Ubtech](#)



# Robotics – Building A Thriving Industry

## The world factory needs more robots

China was the first country to experience COVID-19, which put a renewed urgency on the country's need for automation. Chinese companies rushed to deploy robots and automation technologies in early 2020, and it is only the beginning...

- China is on track to account for ~45% of all industrial robot shipments by 2021. Local companies like Inovance (in our portfolios) experienced ~30% CAGR growth.
- China counts one-seventh as many robots as South Korea relative to its workforce.

## Drones are a Chinese success story

China was relatively late with military drones, yet Shenzhen-based DJI sparked the commercial drone revolution in 2012. From then, China has massively invested in the drone industry for entertainment, agriculture and surveillance.

- In less than 10 years, DJI has gained a >70% market share globally. The second most popular brand on the market is Yuneec, also from China.
- DJI and Yuneec are partnering with Ambarella (in our portfolios) for flight control, advanced analytics, high-resolution video stitching and optimization.

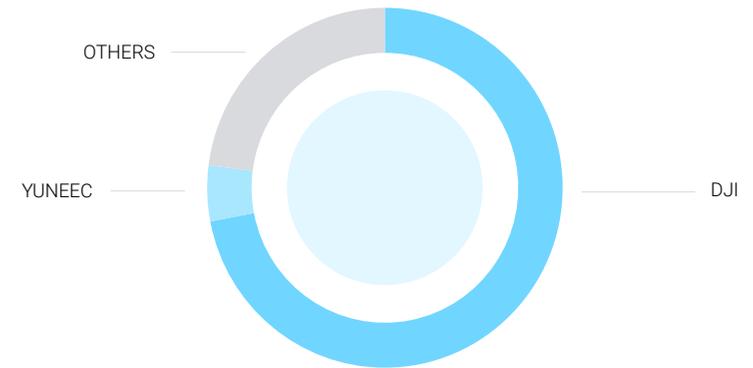
## Robo-taxis race forward

In March 2020, as leading self-driving car companies in the U.S. suspended testing because of the coronavirus, 30 companies were deploying autonomous delivery solutions in China – most platforms based on U.S. chips and software.

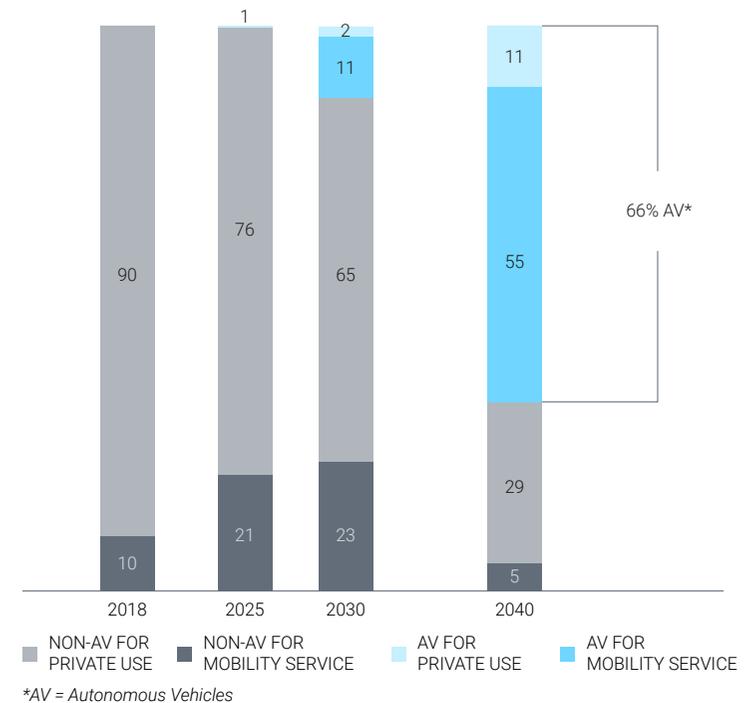
- China's lack of a pervasive car-ownership culture, government support and the size of their market are key factors for faster growth and acceptance.
- Most Chinese robo-taxi leaders (Baidu, AutoX, WeRide, Didi Chuxing or Pony.ai) are engaged in strategic partnerships with Nvidia (in our portfolios).

SOURCE:  
Skylogic research, Automobility, McKinsey, AtonRā Partners

SKYLOGIC RESEARCH – SIMPLIFIED  
COMMERCIAL DRONE GLOBAL MARKET SHARE



ESTIMATED PASSENGER-KILOMETERS TRAVELED BY VEHICLE TYPE, 1%



## Catalysts

- **China was first to experience Covid-19.** Confronted with limited workforce availability, China allocated large resources in 2020 to tackle the urgency of increased automation to continue growing its manufacturing and services.
- **China is first to respond to Covid-19.** China took strong measures to control the epidemics, which seem to have preserved it from a second wave. China economy is full steam ahead while the rest of the world is unclear.
- **China-U.S. tensions invite nationalism and autonomy.** China political system allows for long-term stability and tensions with the Trump's administration solidified the will and drive for "Made in China" innovation and high-technology ecosystems.

## Risks

- **Social stability.** Similarly to the rest of the world, technology mass adoption has negative side effects such as scale surveillance and unequal access to opportunities. China may struggle to maintain social consensus.
- **A long march.** China will likely go faster than any country because of its domestic market, education system and mass availability of low-cost technologies. Yet, forced march is no guarantee of timely arrival.
- **China-U.S. equilibrium.** China is currently in no position to emancipate from U.S. technologies, and the U.S. are very likely to monitor this trend carefully, maintaining some edge and constant pressure on China. Ultimately, this could accelerate China normalization.

## Bottom Line

- China's demography and social contract require massive investments in automation, artificial intelligence and robotics. 2020 is a pivotal year for the country, which first experienced the coronavirus outbreak and first responded to it. The co-occurrence of a huge and underserved market, a trend towards normalizing business and foreign investments makes China a most promising region for AI and Robotics industries.
- China-U.S. decoupling is not realistic for now. The forthcoming U.S. administration, although cautious with China's ambitions on core technologies and defense, will likely be back to the negotiating table – enabling U.S. companies to capture value from China domestic and extended Asian markets. Such companies stand high in our portfolios and are complemented by high growth mainland China companies.

### Companies mentioned in this article:

Alibaba (BABA US), Ambarella (AMBA US), AutoX (not listed), Baidu (BIDU US), Dahua (002236 CH), Didi Chuxing (DIDI, not listed), DJI (not listed), Global Foundries (not listed US), Hikvision (002415 CH), HSMC (not listed), Inovance(300124 CH), Nvidia(NVDA US), Pony.ai (not listed), SenseTime (not listed), SMIC (0981 CH), Tencent (TCEHY US), Ubtech (not listed), WeRide (not listed), YMTC (not listed), Yuneec (not listed)

# CHASING OPPORTUNITIES IN THE CHINESE MEDTECH MARKET

## An Accelerating Upgrade Cycle

### The runner-up in the global medical device industry

The Chinese MedTech market has been growing at a whirlwind pace during the last 10 years, with regulation and reimbursements tagging along.

- Average annual growth has been at 14% between 2013 and 2020.
- This year, China's medical devices market is expected to become the world's second largest, just behind U.S. in terms of size.

### A leader in the low-end market

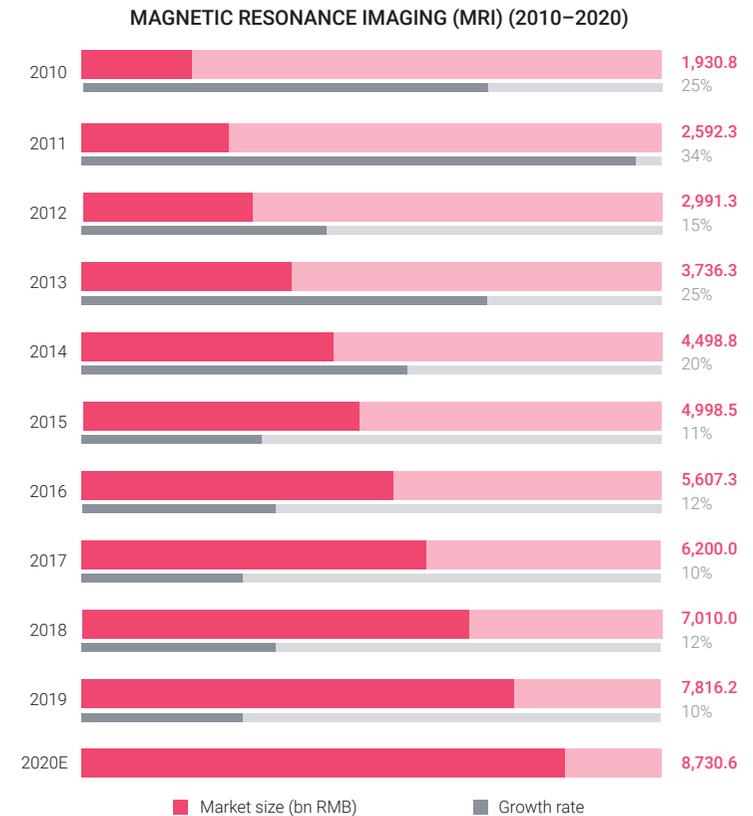
Most Chinese medical-device makers today produce low-cost, high-volume items. The market for high-end, R&D-intensive equipment has been historically dominated by foreign companies.

- As an example, international players hold more than 90% of the Chinese market for MRI and pacemakers (GE Healthcare, Medtronic, Abbott, Boston Scientific, Siemens).

### Setting its sights on a bigger slice of the cake

This situation is now rapidly changing. Domestic brands have begun adding innovative products to their pipelines and entered some segments of the high-end device market. Going forward, China will be an increasing source of innovation.

- China's patent applications have been rising and today represent 36.5% of all the patents across the world.
- Beijing has made the development of high-end medical devices a key priority.
- China's "Made in China 2025" initiative promotes explicitly the domestic development and advancement of high-end medical devices.



SOURCE:

[Chinese biotech sector is blowing hot as M&A and IPO deals surge amid Covid-19 pandemic](#),  
[China's Medical Devices Industry: Key Market Entry Considerations](#)

## Chinese MedTech Market Today (1/2)

### A market focused on a few key segments

Chinese Medtech market revolves mainly about five key segments: medical imaging, in vitro-diagnosis, consumables, cardiovascular and orthopedics. Together they represent about 54% of total Chinese medical devices market, and are dominated by foreign players.

- Local companies are mainly active in the low-end market segments like Healthcare IT, medical supplies and disposables.

### The renaissance of Chinese medical devices

Regulatory bodies are raising the bar about the requirements for products undergoing clinical trials. As a result, several domestic companies now produce good-quality, innovative products, helping to build their reputation.

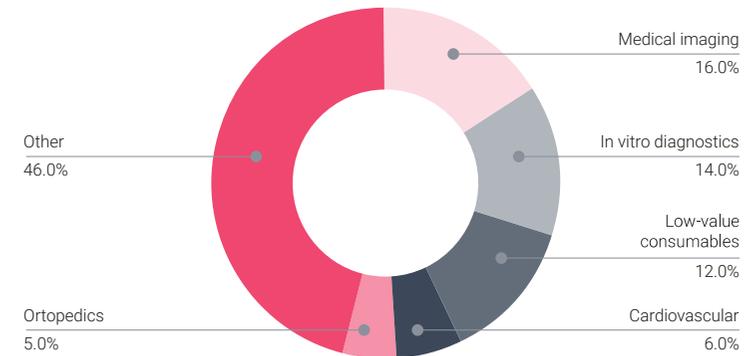
- Venus Medtech and Nanjing Micro-Tech are making a name for themselves, respectively for their TAVR (transcatheter aortic valve replacement) devices as well as their non-vascular stents.
- Mindray and Lepu (leading Chinese MedTechs), boosted their R&D budgets.

### A market rife with new M&A opportunities

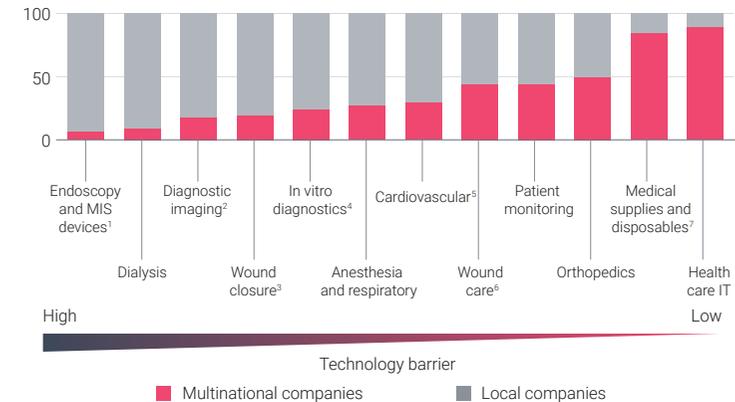
To better navigate the Chinese market and build local manufacturing capacities, foreign companies may turn to M&A and partnerships.

- Trauson, Kanghui, Montage, three domestic leaders in orthopedics, were purchased respectively by Stryker, Medtronic and Zimmer Biomet.
- Novocure has partnered with Zai Lab to commercialize its oncology platform in China.

MEDICAL DEVICES MARKET STRUCTURE IN CHINA



LOCAL PLAYERS HAVE GAINED MARKET LEADERSHIP IN SOME KEY CATEGORIES

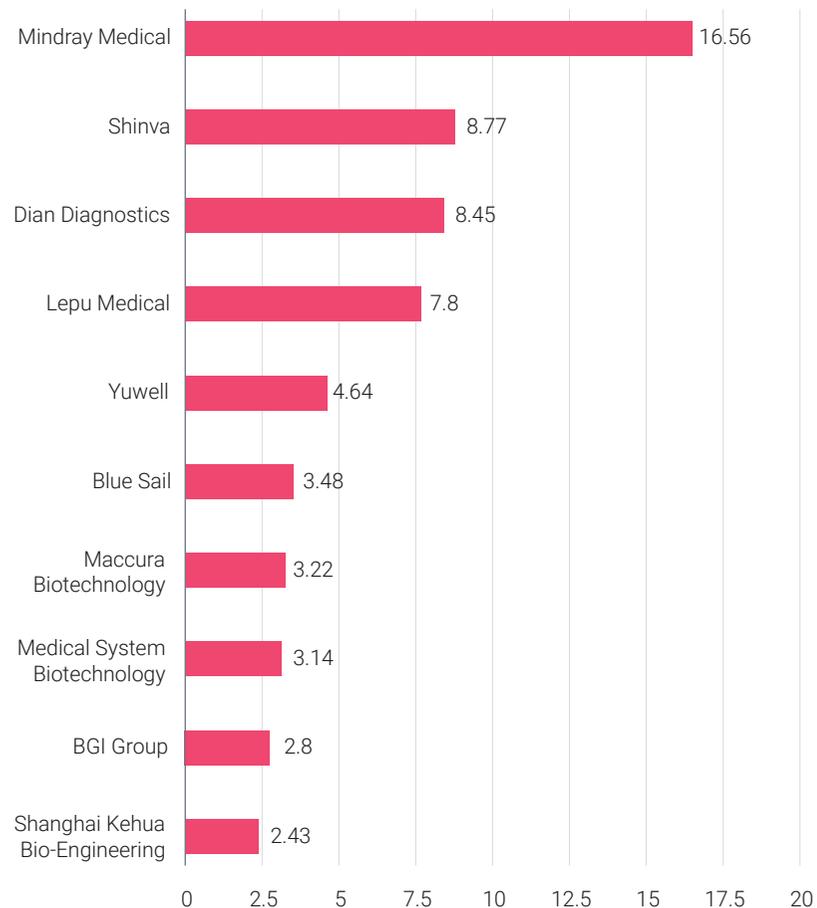


Sources: BCG medtech database; BCG analysis.  
<sup>1</sup>Surgical devices used in minimally invasive surgeries; <sup>2</sup>Includes CT, X-ray, and MRI imaging equipment;  
<sup>3</sup>Includes staplers, sutures, and clips; <sup>4</sup>Includes equipment and reagents; <sup>5</sup>Includes consumables such as stents, pacemakers, and heart valves; <sup>6</sup>Includes traditional and advanced wound dressings;  
<sup>7</sup>Includes syringes, needles, and drapes;

SOURCE:  
[A brief history of OSA](#)

## Chinese MedTech Market Today (2/2)

SALES REVENUE OF THE LEADING MEDICAL DEVICE COMPANIES IN CHINA IN 2019



Segment	International Share	International Players	Domestic Players
Ophthalmic devices	80	Alcon / Essilor / Bausch and Lomb	N / A
In-vitro diagnostics	65	Roche / Abbott / Beckman Coulter	Mindray / DaAn / Fosun
Diagnostics imaging	80	Siemens / General Electrics / Phillips	United Imaging / Neusoft / Wandong
Cardiovascular devices	60	Abbott / St Jude	Microport / Lepu
Nephrology and urology devices	70	Fresenius / Baxter	Wego
Orthopedics	60	DePuy Synthes / Zimmer Biomet / Stryker / Medtronic	Microport / Wego / Double Engine
Hearing aids	90	Sonova / GN Resound / Amplifon	Nurotron

SOURCE:  
[Sales revenue of the leading medical device companies in China in 2019](#)

## Leveling The Playing Field For The Future

### Reimbursement is expanding access to local medical devices

Insurance coverage is expanding and now the entire Chinese population has access to basic health care through a public option. New reimbursement policies are set to favor domestic makers and high-value medical devices.

- Reimbursement rates for domestic medical devices are usually larger.
- The government offers tax breaks to citizens that purchase commercial insurance, covering a broader set of advanced medical devices.

### Regulation is playing catch up with innovation

China has established a fast-track approval pathway and other programs with the aim of accelerating time to market for innovative devices.

- From 2014 to 2019, a total of 65 products have been approved for the fast-track, 64 are domestically-produced, high-value devices.
- In 2019, China has launched a program to use real-world data in medical device clinical evaluations, further accelerating time to approval.

### A new policy supporting the uptake of medical devices

China has created the “Two-Invoice System” policy that reduces the number of intermediaries between the manufacturer and the hospital, contributing to significantly reduce the price of medical devices.

- The same policy had been previously adopted for the pharma industry and has effectively reduced drug prices for patients.

SOURCE:

[Chinese biotech sector is blowing hot as M&A and IPO deals surge amid Covid-19 pandemic](#)



## Bright Spots Of Innovation In China (1/2)

### Fighting cancer with genomics

2020 saw an unprecedented number of Chinese MedTech IPOs, especially in the liquid biopsy and, more in general, the In Vitro Diagnostics market.

- The number of Chinese MedTech IPOs is up 155% compared to 2019.
- Sequencing technology allows the development of liquid biopsy tests, which can detect tumors much earlier than conventional diagnostic tests.

### Towards digital healthcare

China is leading the world in digital health adoption and represents the biggest wearables market. Additionally, the COVID-19 pandemic has boosted the wide-spread adoption of telemedicine.

- Low physician density and high adoption of self-monitoring devices have driven strong growth in China's digital health market.
- Ping An Good Doctor experienced an increase of 800% in online consultations after the beginning of the pandemic.

### Innovative medical devices on the rise

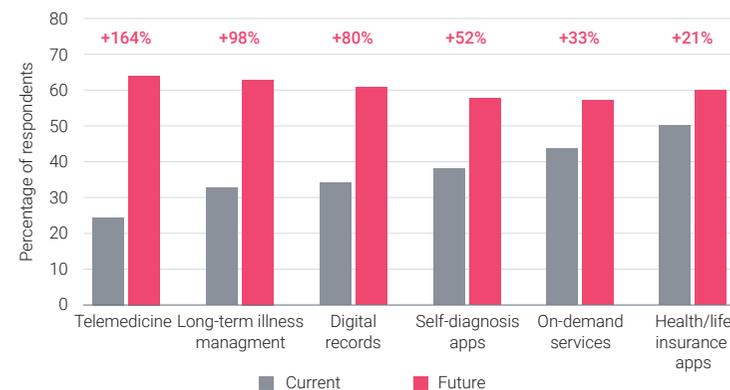
Even if U.S. companies are still dominating the Chinese medical devices market, domestic companies manufacturing innovative medical products are emerging rapidly, most notably in the cardiovascular segment.

- The high incidence (290mn people) of cardiovascular diseases in China has boosted R&D for cardiovascular and cerebrovascular interventional devices.
- Peijia Medical and Venus MedTech, pure players in the field, have gone public recently.

SOURCE:  
[28 IPOs in 180 days, a trillion dollar market has exploded in China](#)  
[China's Healthcare Industry – Opportunities in Telemedicine and Digital Healthcare](#)  
[China Robotics Market Forecast, 2019–2023](#)

New 2020 IPOs	Sector
Anpac Bio	Liquid biopsy
Burning Rock	Liquid biopsy
Genetron	Liquid biopsy
Tailin Bioengineering	Medical devices
Healgen	In vitro diagnostics
Snibe	In vitro diagnostics
Wantai Pharma	In vitro diagnostics
Kanghua	Medical devices
Kangji Medical	Medical devices
Peijia Medical	Medical devices
Sanyou Medical	Medical devices

CHINESE PATIENTS EXPECT TO USE MORE DIGITAL SERVICES WITHIN THE NEXT FIVE YEARS



## Bright Spots Of Innovation in China (2/2)

### Joining the leaders in brain research

China's ambition is to become the leader in brain science and to have a unique impact on the global public health.

- A 15 years project focused on brain diseases and brain-inspired artificial intelligence (AI) has been initiated in 2016 by the Chinese government, following the example of worldwide billion-dollar initiatives to unveil brain mysteries like the BRAIN initiative (U.S.) or the Human Brain Project (E.U.).

### A larger population with brain diseases

The priority of the project is the development of new technologies for the early diagnosis and intervention of brain-related diseases. Brain disorders represent a major challenge threatening the health of China's population and prevalence is expected to increase due to aging population.

- Estimates for 2020 point to 9mn people suffering from Alzheimer's disease and 15mn from dementia, with an associated economic burden of \$20bn and \$69bn, respectively.

### Imitating architecture and functions of the brain

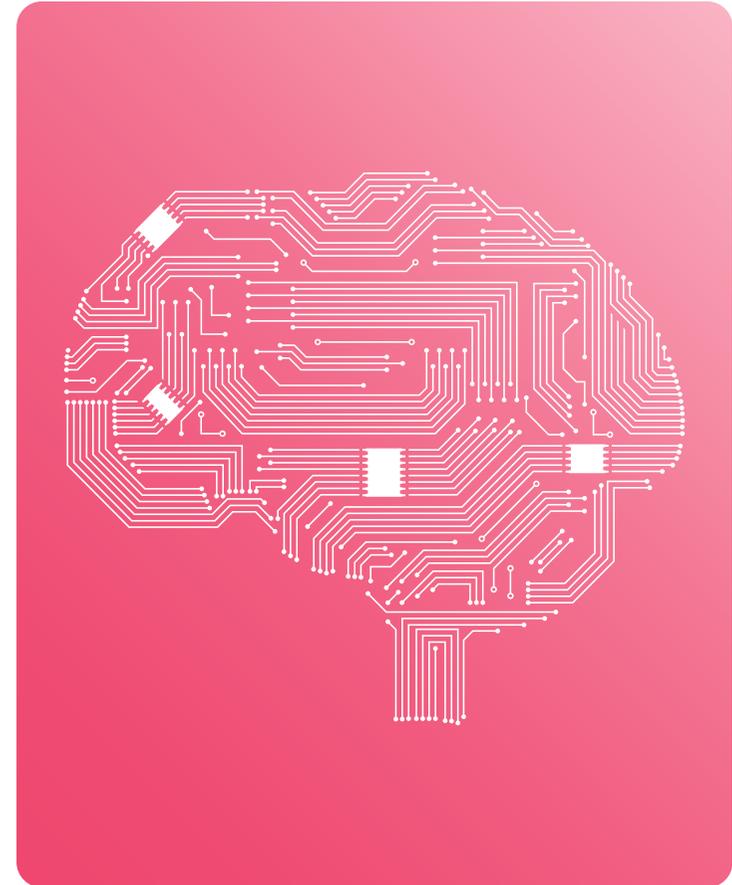
Another important goal of the China Brain Project (CBP) is to help AI and the development of new technologies inspired by the human brain. Advances in AI will allow early diagnostic solutions based on imaging analysis.

- China tech giants like Baidu, Tencent and Alibaba are already developing such technologies, and leveraging the huge amount of data available.
- iCarbonX uses AI to collect medical, behavioral and biological data to gain more understanding about diseases and create better treatments.

SOURCE:

[Bulletin of the World Health Organization](#)

[Economic burden for Alzheimer's disease in China from 2010 to 2050: a modelling study](#)



## Catalysts

- **Innovation is a priority.** China government and regulatory authority(NMPA) are encouraging innovation with national initiatives (e.g., CBP) and a new fast-track regulatory process reducing time to market.
- **Promoting locally-produced devices.** Reimbursement policies are favoring domestic high-end medical devices which are more and more covered by insurances.
- **A leap forward in automation and digitalization.** The COVID-19 pandemic has reshaped China healthcare priorities towards digital health technologies and AI-based robotic devices.

## Risks

- **Intellectual property (IP) protection.** Strong IP protection is required to create innovative high-tech devices. However, IP protection in China is still weak. CFDA is planning to tighten its regulation.
- **Regulation & reimbursement.** China still lacks a strong regulatory framework for some innovative medical devices. Reimbursement is a very complicated process that takes place at the provincial level.
- **Escalating trade tensions with the U.S.** In response to the “Made in China 2025” plan, the U.S. government has imposed higher tariffs on Chinese goods which affect export opportunities.

## Bottom Line

- China’s manufacturing strategy is moving from the “world’s factory” into an innovation-driven powerhouse offering high-quality medical devices “made in China”. This industrial revolution is reflected in the unprecedented high number of IPOs in the Chinese Medtech industry in 2020 which is unlocking huge investment opportunities.
- Our portfolios are not yet directly exposed to local Chinese MedTech companies, and we are closely monitoring the market looking to add exposure as opportunities emerge.

### Companies mentioned in this article:

Abbott (ABT US), Alibaba (BABA US), Baidu (BIDU US), Boston Scientific (BSX US), GE Healthcare (not listed), iCarbonX (not listed), Kanghui (not listed), Lepu (300003 CN), Medtronic (MDT US), Mindray (300760 CN), Montage (private), Nanjing Micro-Tech (688029 CN), Novocure (NVCR), Peijia Medical (9996 HK), Ping An Good Doctor (1833 HK), Siemens (SIN US), Stryker (SYK US), Tencent (700 HK), Trauson (not listed), Venus Medtech (2500 HK), Zai Lab (ZLAB), Zimmer Biomet (ZBH US)

# CHINA BETS ON BIOTECH: THE TIGER'S FANGS ARE COMING OUT

## On The Verge Of A Major Breakthrough

### The attractive Chinese Biologics market

As we wrote, China has become the fastest growing biologics market and is now hosting some of the most innovative biotech companies.

- The Chinese biologics market, the second-largest drug market in the world, is expected to grow from ¥262.2bn in 2018 to ¥641bn in 2023 (a 19% CAGR).

### Government and investors focusing on Biotechnology

A wave of new reforms has boosted the development of the biotech sector, resulting in a significant inflow of investment capital.

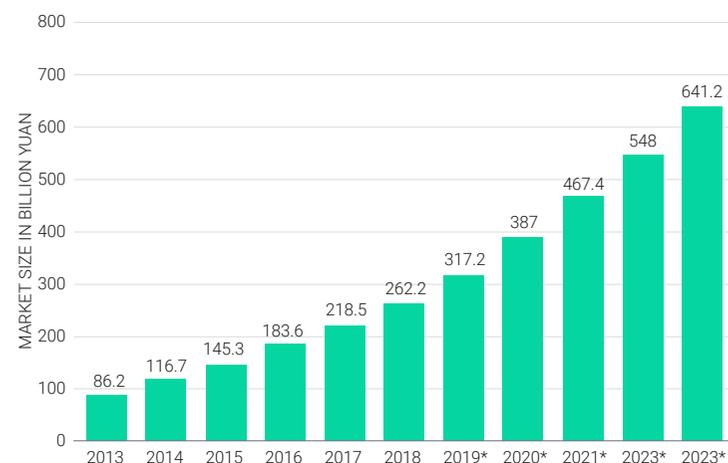
- The government's "Made in China 2025" plan aims to increase R&D and the NMPA (Chinese FDA) introduced several reforms to accelerate the approval of innovative medicines.
- In the first half of 2020 alone, the volume of IPOs and M&A reached a value of \$3.9bn far exceeding the \$3.1bn recorded in the whole year 2019.

### Hot biotech sectors in China

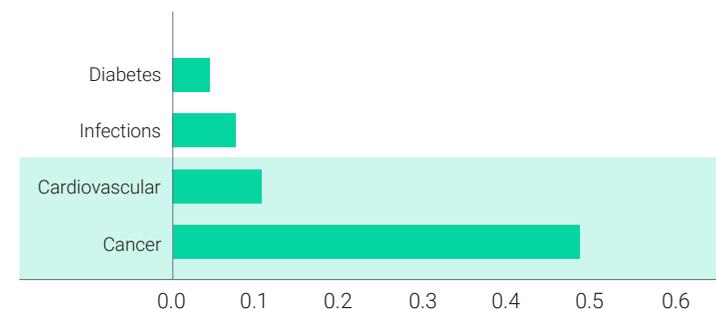
In our previous article, we mentioned that biotech companies have increased their R&D (via outsourcing to CDMOs or in-house) to remain competitive and rapidly launch innovative drugs. China is leading growth also in this segment.

- Given the high incidence of cancer in China, immuno-oncology products are among the most innovative drugs currently produced and developed locally, with Innovent, BeiGene or Jiangsu Hengrui being the market leaders.
- Cardiovascular and anti-diabetic drugs are also an important segment of the market, as the world's largest diabetic community is in China.

THE SIZE OF BIOLOGICAL PRODUCTS MARKET IN CHINA

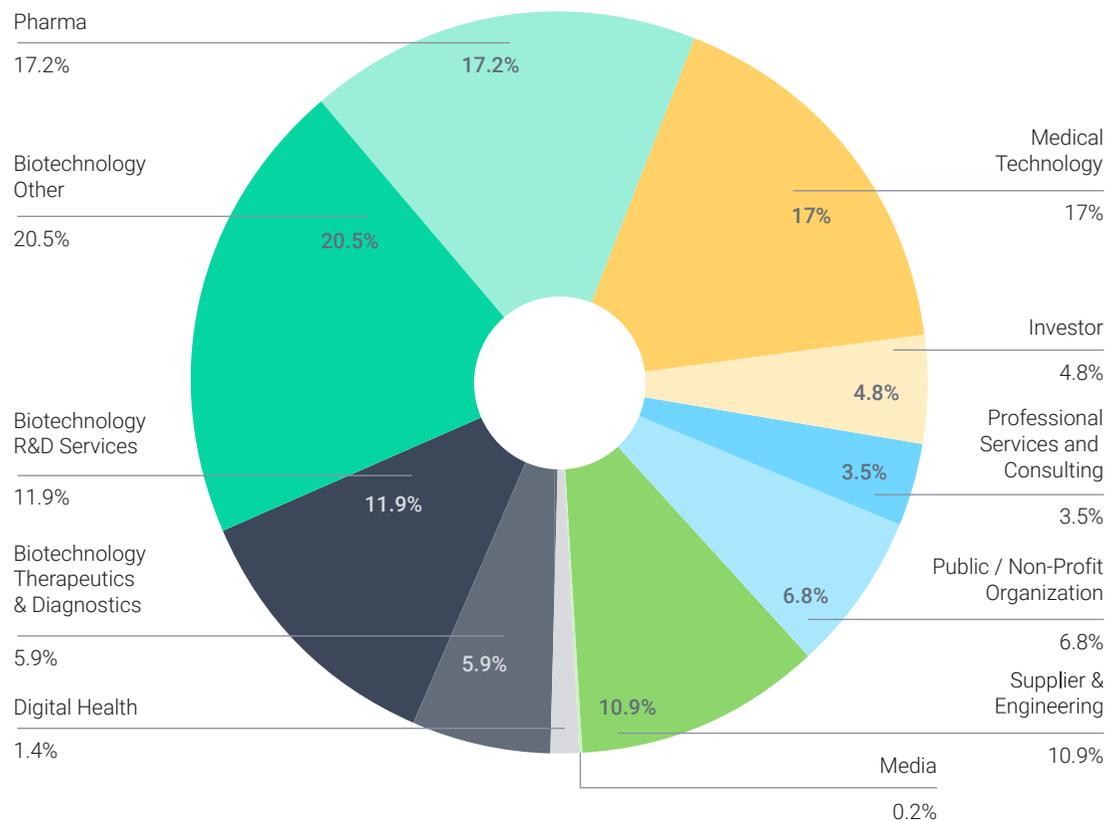


CHINA TOP CLINICAL TRIAL INDICATIONS



# Chinese Biotech Market At A Glance

**COMPANIES PER SECTOR IN CHINA (MAINLAND)**



**NUMBER OF COMPANIES IN THE CHINESE BIOTECH DATABASE**

Biotechnology – Therapeutics & Diagnostics	298
Biotechnology / R&D Services	600
Biotechnology – Other	1037
Pharma	869
Medical Technology	861
Investor	242
Professional Services and Consulting	179
Public / Non-Profit Organizations / Medical Facil.	343
Supplier & Engineering	551
Media	11
Digital Health	71

SOURCE:  
[Companies per Sector in China \(Mainland\)](#)

## The Chinese Biologics Market: From Cub To Tiger

### Influx of "Haigui" drives innovation and growth

Innovation and the related growth in the Chinese biologics market is being driven by the return of highly-trained "Haigui" (expatriates coming back to work in China), bringing back significant experience and skills, honed in western universities and labs.

- The Chinese pharmaceutical market has a CAGR of >15% (versus <6% in developed countries).
- Over 30% of the 1mn biomedical R&D staff in China are "Haigui".

### Shifting the balance from drug import to drug export

China's Active Pharmaceutical Ingredients (APIs) manufacturers are major exporters, but finished pharmaceutical products lag behind and are mostly for the domestic market. Recent efforts by the government and biotech companies are tilting the balance towards more exports.

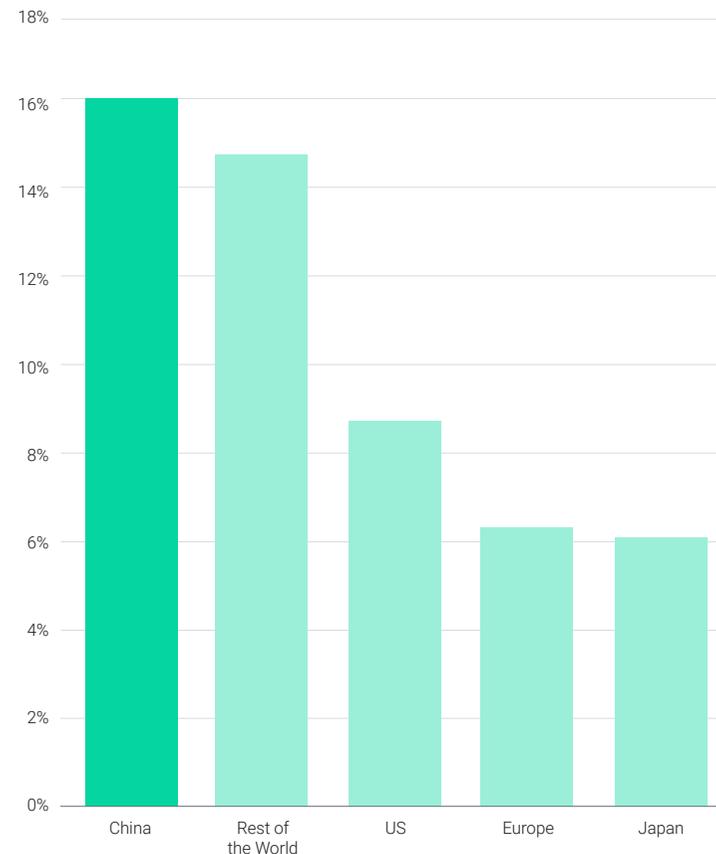
- Over 85% of Chinese producers plan to be exporting GMP-quality (Good Manufacturing Practices) biologics to western markets within the next 5 years.
- China ranks second among countries that export biologics to the U.S., mainly APIs.

### Chinese biotech IPOs attract massive foreign capitals

Since 2018, the Hong Kong Exchange reviewed its listing rules, allowing pre-revenue and pre-profit biotech to be listed. Significant investment capital has flowed into the sector.

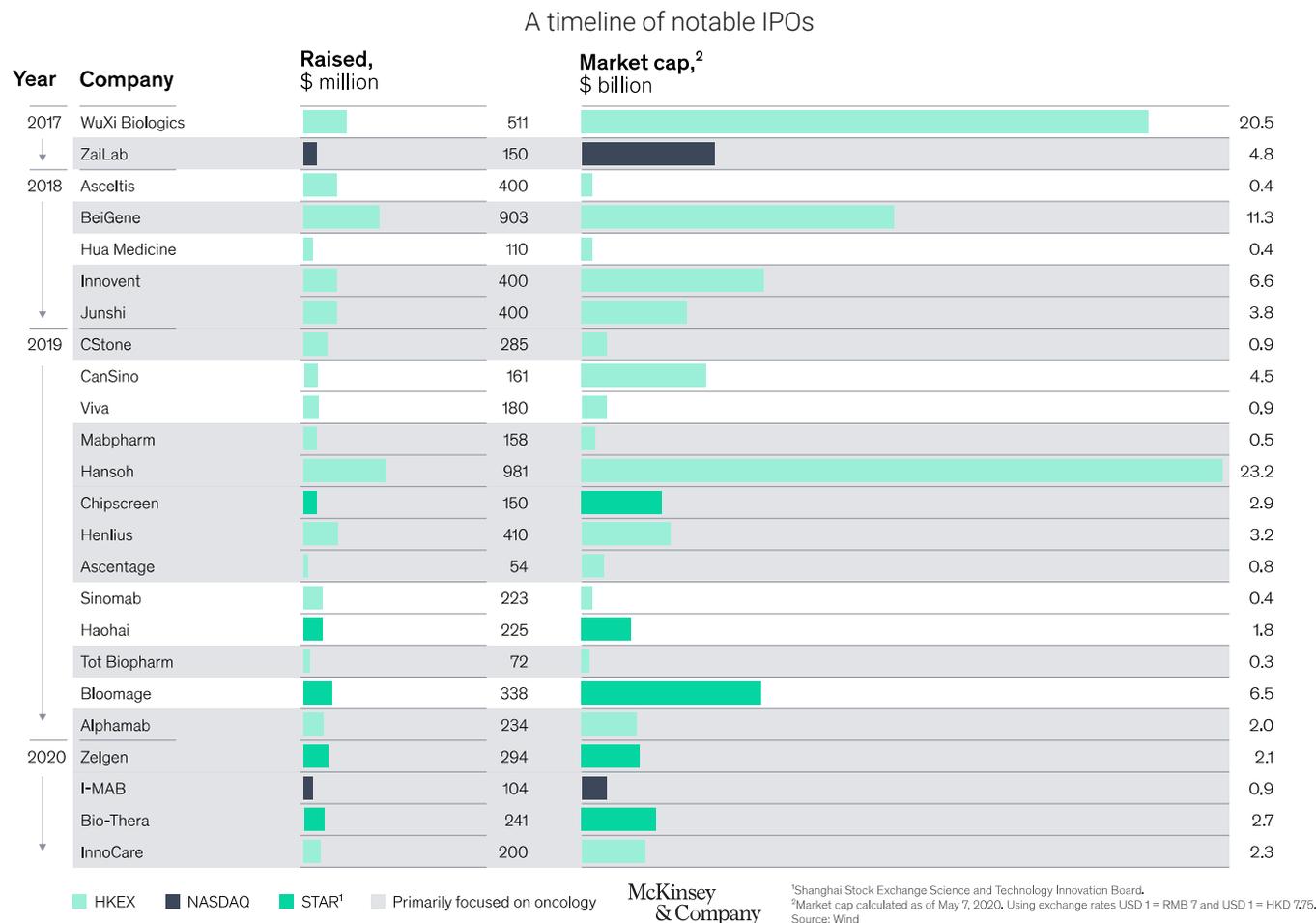
- In 2019, the average amount of funds raised was 4 to 5 times the U.S. average, with the largest listing raising over \$900mn.
- Since 2018, 17 biotech companies from mainland China have listed in Hong Kong, raising a combined \$5.12bn.

BIOLOGICS MARKET CAGR (2016–2021)



SOURCE:  
BioPlan Associates / ChinesebiotechUBS AG / FDA / USPTO

## A Wave Of IPOs Primarily Focused On Oncology



SOURCE:  
McKinsey & Company

## Government And Investors Focusing On Biotechnology

### A wave of reforms to boost innovation

The government presented 15 reforms in the "Healthy China 2030" plan to prevent and control major diseases by encouraging R&D in the strategic biotechnology sector. As a result the number of clinical trials and patent filings has exploded in recent years.

- In 2018, the number of patents filed by Chinese companies was twice as much as those filed by U.S. ones.

### The NMPA is pushing for domestic expertise

The Chinese FDA (NMPA) has improved its policies to modernize the clinical trial process and thus accelerate the approval of innovative drugs. The NMPA joined the ICH (acting for the international harmonization of clinical trials) in 2017, pushing global companies to conduct their trials in China.

- The number of medical centers qualified to conduct trials, increased from 478 to 886 over the past three years.

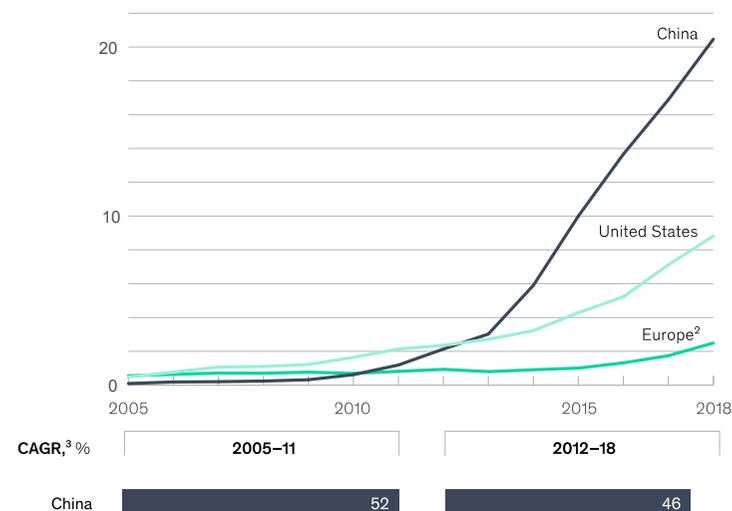
### Local biopharma to conquer the world

The combination of government incentives and increased capital inflows has resulted in an explosion of high-quality local biotech companies ambitioning to expand beyond China. Many are initiating programs in the U.S., Europe or Japan, either alone or through strategic collaborations.

- Partnerships with U.S. leading biopharmas include Legend Biotech with J&J or BeiGene with Amgen.

\* The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH)

PATENT REGISTRATIONS FOR NEW MEDICINES BY REGION, THOUSAND



CLINICAL TRIAL APPLICATIONS IN CHINA 2015-2019

The number of applications for Class 1 new chemical drugs (the category for innovative drugs containing new chemical entities with clinical value not marketed anywhere else in the world)



Source: PhIRDA

## The Immuno-Oncology Sector Dominates China

### Innovative products to meet the demand

In the “Healthy China 2030” plan, cancer is among the top five priorities and the only way to manage this burden is through innovation.

- China accounts for 55% of all patients diagnosed worldwide with gastric, esophageal or hepatocellular cancer. Companies have many patients available, enabling them to speed up the process of clinical trials.
- Immunotherapy, the backbone of novel cancer treatments, accounts for 25% of total oncology trials initiated in the last two years.

### Local players in a race with the international leaders

While the Chinese market has seen a wave of approved foreign antibody drugs, including the famous PD1/ PD-L1 inhibitors, local companies are now entering the market with their own assets, offering convincing differentiation and lower prices thanks to lower clinical trial costs, in addition to efficacy and safety superiority.

- Keytruda and Opdivo developed by Merck and Bristol-Myers Squibb respectively were the first foreign oncology drugs approved in China, back in 2018.
- Since then, Junshi Pharma, Jiangsu, Innovent and Beigene have all received national approval.

### A hotbed for cell therapy development

Since 2017, China is the global leader in CAR-T cell therapy development thanks to better clarification of the regulatory pathway, improved manufacturing standards and priority review status.

- Even if 90% of these studies are still in preclinical or Phase 1 stage, priority regulatory programs can help accelerate the progression through the clinical phases.

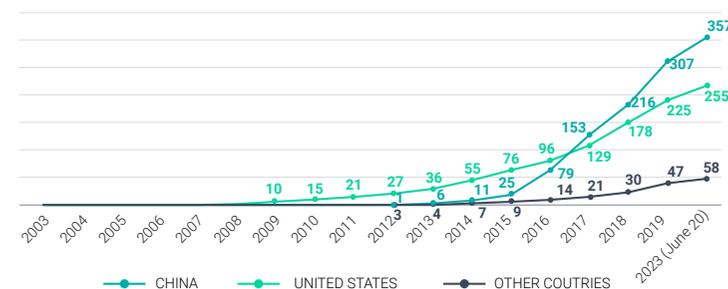
RISING CASES OF CANCER IN CHINA (MN)



Source: Economic Research Institute of CITIC Securities

ZHANGYE / CHINA DAILY

CLINICAL DEVELOPMENT OF CAR-T CELL THERAPY IN CHINA



# Local Biopharmas To Conquer China And Beyond

## A dual business model with a global vision

Chinese leading biopharmaceutical players are working on two parallel verticals, developing novel drugs to be commercialized globally and in-licensing branded drugs for local distribution.

- Novel drug platform includes precision oncology assets, immunotherapies and innovative combination approaches.
- In-licensing global brands for local distribution of blockbuster assets include Bristol's Revlimid, Amgen's Xgeva and GSK's Zejula.

## An evolving approach to novel drugs

Legacy pipeline assets were directed towards a me-too approach, working to build-up on existing successes with incremental differentiation. But in recent years Chinese developers are exploring novel therapeutic pathways at a comparable pace to western competitors.

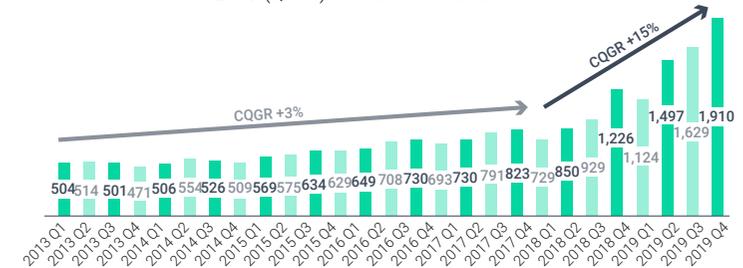
- AI-driven drug discovery engines translated into novel therapeutic technologies such as bispecific antibodies and immunotherapies, targeting novel cellular pathways.

## Ambitious global strategy

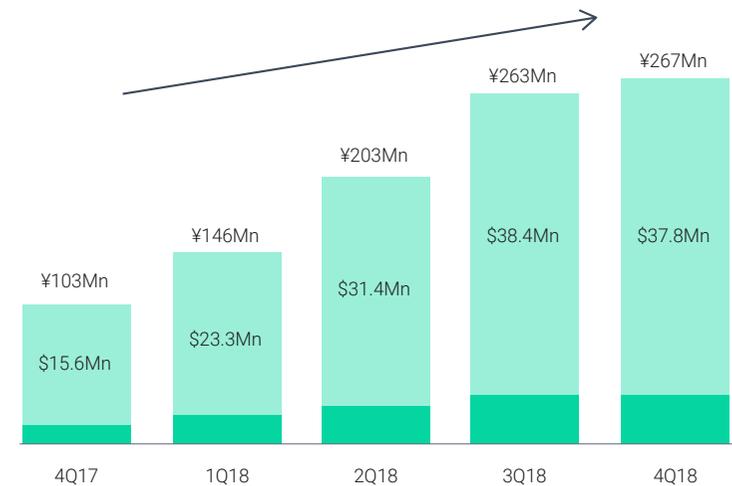
Emphasizing this global approach and "beyond-China" aspirations, the strategy used often relies on running U.S. trials and perusing regulatory endorsement from the FDA prior to the NMPA.

- As an example, BeiGene's lead pipeline asset, the BTK inhibitor zanubrutinib, is running superiority studies in the U.S. across an array of blood cancer as a first line treatment. If successful, zanubrutinib will be a runner-up on a \$8bn revenues opportunity in the U.S. alone.

**MULTI-NATIONAL COMPANIES ONCOLOGY PRODUCT SALES IN CHINA (\$MN)**  
2019 (Q1-3) YOY GROWTH: 68%



**MARKETED BRAND REVENUE**  
Since Transition To Beigene (In USD and RMB)  
Over 150% Actual Growth YoY



## Catalysts

- **Clinical trial modernization.** Internal innovation in China accelerates, supporting further development of novel drugs and treatments targeting both the local and global market.
- **NMPA endorsement.** Support from the regulators in the form of incentives and acceleration of the drug approval process could play out also in clinical trial registration and participation.
- **Ecosystem evolution.** The capital markets window for Chinese drug developers further evolves and supports the creation of large, multi-product drug companies, promoting an internal biopharma ecosystem.

## Risks

- **Prevention.** Government initiatives focusing on prevention, and regulations concerning common risk factors may reduce the market opportunity for drug makers, which may not be compensated by demographic evolution.
- **Transparency.** Lack of evident transparency concerning trial conduct, data set integrity, and regulatory supervision may prevent adoption in ex-China markets.
- **Covid aftermath.** In the wake of the COVID-19 pandemic, governments may further support local production and innovation, particularly in biopharma, that would challenge Chinese biotech's global expansion efforts.

## Bottom Line

- The Chinese biotech market is offering the highest growth rates, a supportive regulatory framework and strong capital inflow. Coupled with structural advantages like a vast patient population and huge amount of data feeding their AI tools, no wonder it is sprawling with innovation, making China unavoidable for any biotech investor.
- In our portfolios, we already have exposure to the Chinese biopharma sector. We are closely monitoring the market evolution, notably innovative drugs and treatments as well as regulatory developments, and may increase our China exposure in the near future.

### Companies mentioned in this article:

Amgen (AMGN US), BeiGene (6160 HK), Bristol Myers Squibb (BMS US), Innovent (1801 HK), Jiangsu Hengrui (600276 CN), Johnson and Johnson (JNJ US), Junshi Pharma (1877 HK), Legend Biotech (LEGN US), Merck & Co (MRK US)

# CHINA: SPACE AGAINST TIME

## A New Major Space Power Is Here

### A new player in space with cosmic ambitions

Fifty years after landing humans on the Moon and establishing its dominance, the U.S. is challenged by another superpower: China. A country that was 40 years late to launch a human into space is now launching 40 rockets a year.

- Second only to the U.S., China operates 363 satellites in orbit as of March 2020.
- Since 2017, China is launching more rockets annually than any other country.

### Lunar rather than later

The defining moment in the Chinese space industry happened in 2019 when China successfully landed lunar rovers on the dark side of the Moon. At the 2020 September Space Conference, China has announced further lunar expansion by unveiling a new launch vehicle, new-generation spacecraft, and new rover.

- Prior to this mission, lunar expeditions had mainly targeted the illuminated, closest to Earth, side of the Moon.

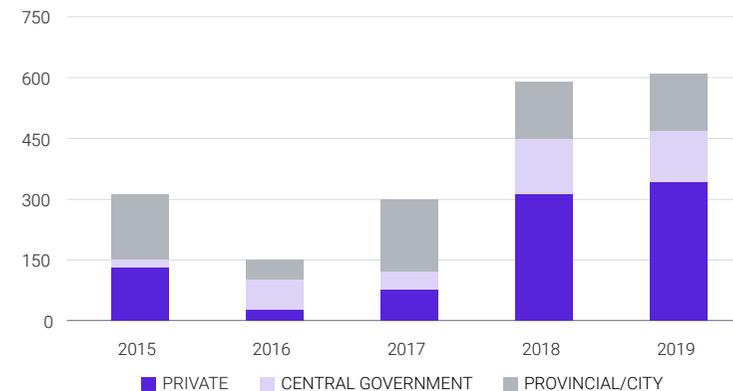
### A welcoming investing atmosphere

Since the last Moon landing performed in 1972, the U.S. budget portion for space exploration has nosedived, while China has been pouring cash into space all the while creating comfortable conditions for private investors.

- The peak of the U.S. budget devoted to space was at 4.4% of federal budget, in 1966. By 2017, this percentage had fallen 10x, and further cuts were proposed.
- After China had published its space doctrine, the U.S. Congress has reversed the space budget trend. 2018 and 2019 saw 8% and 3.5% increases, respectively. In 2019, the U.S. spent \$21.5bn trying to compete with China in space.



FUNDING FOR CHINESE SPACE COMPANIES (\$MN)



SOURCE:

[The Risks and Rewards of Growing US-China Space Rivalry](#)  
[China outlines architecture for future crewed Moon landings](#)  
AtonRā Partners

## Expanding At Light Speed

### One decade too fast

Since launching the first human into space in 2003, China has significantly developed its space infrastructure. Chinese space portfolio includes the Gaofen Earth observation constellation, BeiDou navigation constellation, and close to the finishing line – the upcoming Low Earth Orbit (LEO) broadband constellation.

- From 2014 to 2019 there were 319 launches of Chinese manufactured satellites, with more than half launched in the past two years.

### Soon China may be the only country with a Space Station

The International Space Station (ISS) could be decommissioned in 2024. To continue its path to dominance in space, China is working on a LEO space station which will be smaller than the ISS but still as large as a football pitch.

- The Chinese Space station with an average lifespan of 10 years is planned to be completed in two years, with multiple modules launching in 2021.

### Boosted by the military sector

In contrast to the U.S., Chinese space and military programs are not separated, i.e. the China National Space Administration is a branch of the Chinese military, while NASA is a purely civilian agency. Such hierarchy worries global powers, but undeniably it also means consistent government support and spending.

- Since 2014, the Chinese government has endorsed both private and government sectors to fund 20 “launch” companies with over \$1bn. Today, seven launchers are in the final stages of development and expecting to takeoff next year.

SOURCE:

[China unveils new 'Heavenly Palace' space station as ISS days numbered](#)  
[Are China's Moon missions a threat to the U.S.? Space experts don't think so](#)  
AtonRā Partners

## The Lunar, The Better

### Experienced in Moonagement

While other countries have lost interest in the Moon, China announced extended plans of lunar exploration and landing missions with the ultimate goal to prepare for crewed landings. Today, China is targeting the unexplored lunar South Pole.

- China may become the third country after the U.S. and USSR to deliver lunar samples to Earth, in case their return mission is successful.
- Successfully tested return technology will also be the basis for future expeditions to near-Earth asteroids and Mars.

### Transforming the Moon into the ultimate space hub

China is working towards putting astronauts on the Moon to carry out scientific research, test latest technology, and look for ways to use lunar resources.

- The next three missions are part of the Chinese International Lunar Research Station which will be completely autonomous and vital for the crew's survival.
- China is actively testing new modules and spacecraft capable of transporting humans beyond LEO. The first successful test flight was in May 2020.

### A lone wolf approach

In contrast to other nations, which rely on international cooperation and a vast supply chain of launchers, spacecrafts, etc., Chinese officials always underline how China must “depend on its own science and technology to realize goals” giving it the advantage of not losing time integrating foreign tech.

- China is successfully using its Long March rockets while continuously improving the design in-house, saving on costly transportation and spread-out assembly lines.



SOURCE:

[New images released from China's expedition to the dark side of the Moon](#)

[China rolls out Long March 5 rocket to launch Chang'e-5 lunar sample return mission](#)

[China outlines architecture for future crewed Moon landings](#)

[AtonRā Partners](#)

## A Welcoming Investing Atmosphere

### Private sector is supporting the Chinese space

China's New Space, comprising around 100 companies, is heavily supported by the growing private sector, with no deceleration in sight. The Chinese space industry is becoming well known for oversubscribed IPOs and a seemingly unstoppable tsunami of private investment.

- China Satcom is the world's highest valued pure-play satellite operator (\$11bn), and its parent company China Aerospace Science and Technology Corporation continues to report record revenues.

### Investments are pouring into space

Since 2014, the Chinese government has been heavily investing in its space sectors while also liberalizing private investments and inviting funds from all over the world. Local companies are also interested and have started to back national space companies.

- More than \$1.8bn has been invested in the past 5 years, and current investments are 5x as much as in 2015, equally split between government and private sources.

### Strong rebound after COVID-19

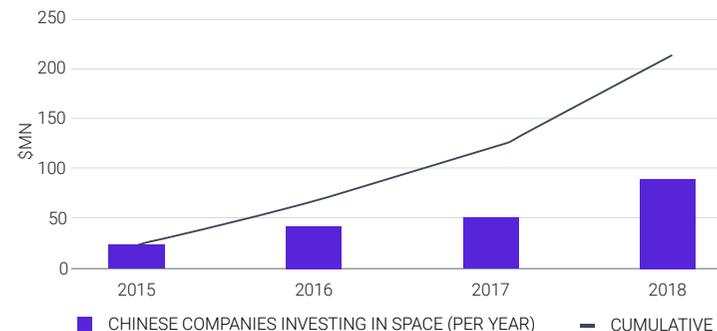
During the global pandemic, investments slowed down, yet the multiple successful launches of satellites, modules and various missions, have solidified investor's confidence in China's expertise in the space sector.

- After the first COVID-19 wave, the Chinese space industry is strongly rebounding, as the country has re-opened manufacturing facilities and is on track to beat the record number of successful launches this year.

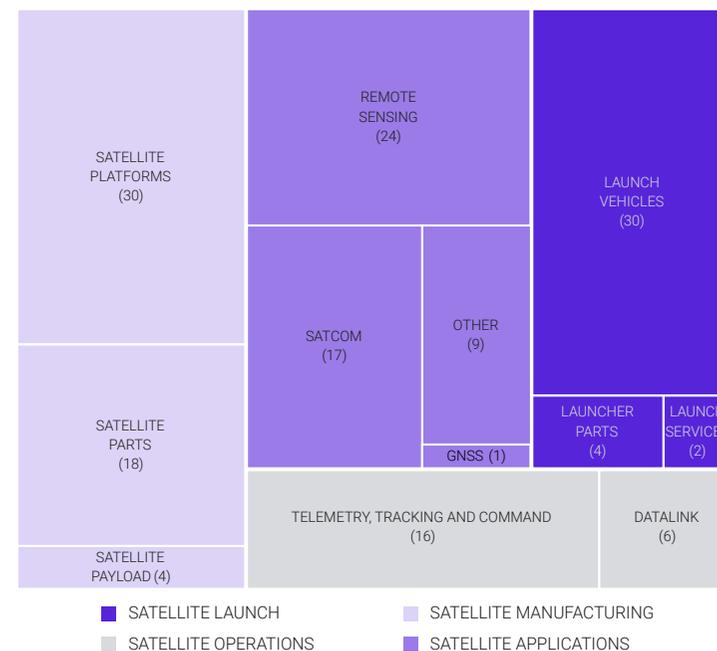
SOURCE:

[Euroconsult reports private investment fuelling Chinese commercial space sector growth, alongside st](#)  
[The China Aerospace Blog](#)  
[AtonRā Partners](#)

CHINESE SPACE INVESTMENT LANDSCAPE



INVESTMENT OPERATIONS IN CHINA'S NEW SPACE BETWEEN 2015 AND 2019



## Catalysts

- **Successful establishment of robotic colony on the Moon.** Being only second to the U.S., fulfilling lunar plans will prove that Chinese technology is just as advanced and will attract investments in the China space sector.
- **Growing interest from private sector.** The surge of interest towards space and space travel is expected to come from the private sector, which in addition to strong government support should significantly boost Chinese space sector.
- **Competitors step up their game.** Inevitable competition between China and other superpowers will drive commercial and technological innovation, both being very beneficial for the society.

## Risks

- **Uncontrolled proliferation of satellites.** Unnecessary launches to establish dominance may result in dangerous space debris rendering space unusable.
- **Militarization of space.** It will be impossible to leave Earth for peaceful and exploratory reasons should the space be militarized and heavily controlled.
- **Low return on capital.** Multiple failures and low returns on investment may put on hold any space initiatives.

## Bottom Line

- Competition with the U.S. and high level of innovation will continue to drive the Chinese space sector. Driven by aspiring plans to colonize the Moon, transform it into a self-sufficient hub for crewed flights, and to launch the next International Low Earth Orbit Space Station by 2022, China is heavily investing in its space industry.
- The themes we have exposure to in our portfolios are likely to benefit from the Chinese expansion into space. The positive changes which began in 2014 with the liberalization of private investments into the Chinese space sector should continue to attract investors' interest over the long-term.

### Companies mentioned in this article:

BeiDou (not listed), China Aerospace Science and Technology Corporation (not listed), Gaofen (not listed), NASA (not listed)

# CHINA ACCELERATING THE GREEN TRANSITION

## Stepping Up On Climate Actions

### Raising its climate ambitions

Over the past few decades, China experienced an energy & carbon-intensive growth, where fast economic expansion triggered an increase in coal-based electricity demand, infrastructure needs (driving demand for steel, copper, aluminum and cement), and reliance on energy-intensive heavy industry. Today, China is entering a new economic era with “green growth” put at the center stage of its ambitions.

- In the last 20 years, China accounted for 2/3 of global CO2 emissions growth.
- In September, Xi Jinping announced China’s goal to become carbon neutral by 2060 in front of the UN General Assembly.

### Dominating the clean energy industry

Whether in solar photovoltaic (PV), wind turbine, or energy storage technologies, China has become the clear industry leader in clean energy. Beyond access to cheap labor and capital, China is ramping up its R&D.

- China accounts for about a third of both global solar and wind generation capacity, 18% of energy storage capacity, it controls roughly 94% of world’s silicon wafer production and 78% of panel production capacity.
- China’s “green research” publications surpass those of the U.S. and India.

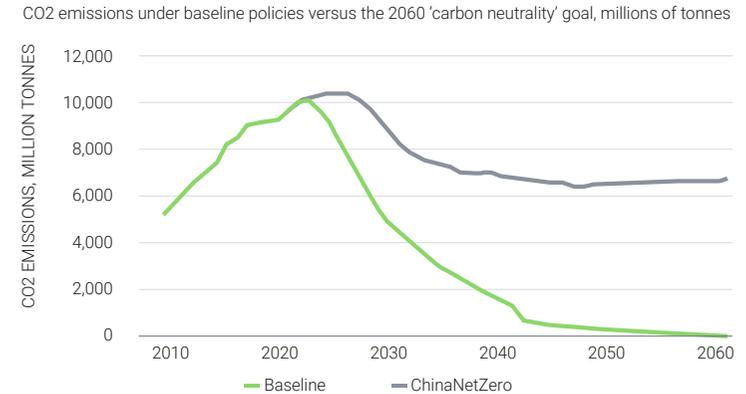
### Transport electrification as a critical step

Transport is to play a major role in achieving climate ambitions. The ongoing push for road transport electrification is viewed as a critical step to enabling a zero-carbon society.

- China’s New Energy Vehicles “NEV” (incl. battery, fuel-cell and plug-in hybrid electric vehicles) penetration is set to quadruple from 5% to 20% by 2025.

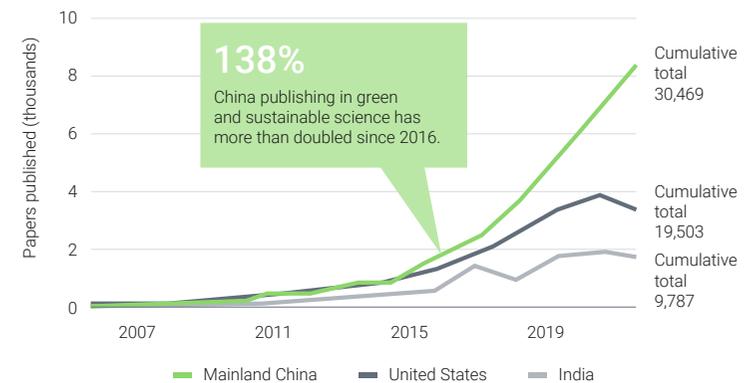
SOURCE: [Clean energy progress after the Covid-19 crisis will need reliable supplies of critical minerals](#)

### CHINA'S 2060 'CARBON NEUTRALITY' PLEDGE COULD AVOID 215BN TONNES OF CO2 EMISSIONS



### GROWTH IN GREEN RESEARCH

China publishes more papers in the field of green and sustainable science and technology, energy and fuels than do either the United States or India, according to Web of Science data.



# A Stranglehold On Cleantech Industry

## Accelerating renewables deployment

The electricity sector is China's largest source of CO2 emissions and thus a major target for the country's decarbonization goal. Coal consumption should peak within the next 5 years while wind & solar capacity is to increase 10x by 2050.

- China needs to boost its non-fossil fuel energy sources from 15% to 24% by 2030 and 84% by 2060.
- Annual addition of renewable capacity should grow from 75GW today to about 200GW for the 2021-2060 period.

## Controlling energy metals supply

While environmental concerns are arguably driving China's clean ambitions, another key factor is its growing control over critical minerals & metals used in clean technologies, from rare earth elements (used to make permanent magnets notably for wind turbines' generators), to gallium (used in thin-film and multi-junction solar cells), and lithium & cobalt (main elements in today's EV batteries).

- China controls 50%–70% of global lithium and cobalt refining, and 85%–90% of rare earth processing operations.

## On its way to become an "electro-state"

China intends to build geopolitical leverage by becoming tomorrow's "electro-state": replacing today's "petro-states" and supplying electricity (directly or indirectly) to the world.

- China aims to compensate its lack of oil & gas by increasing its global domination in the production of clean technologies (renewables, batteries, EVs) and related critical minerals.

SOURCE:

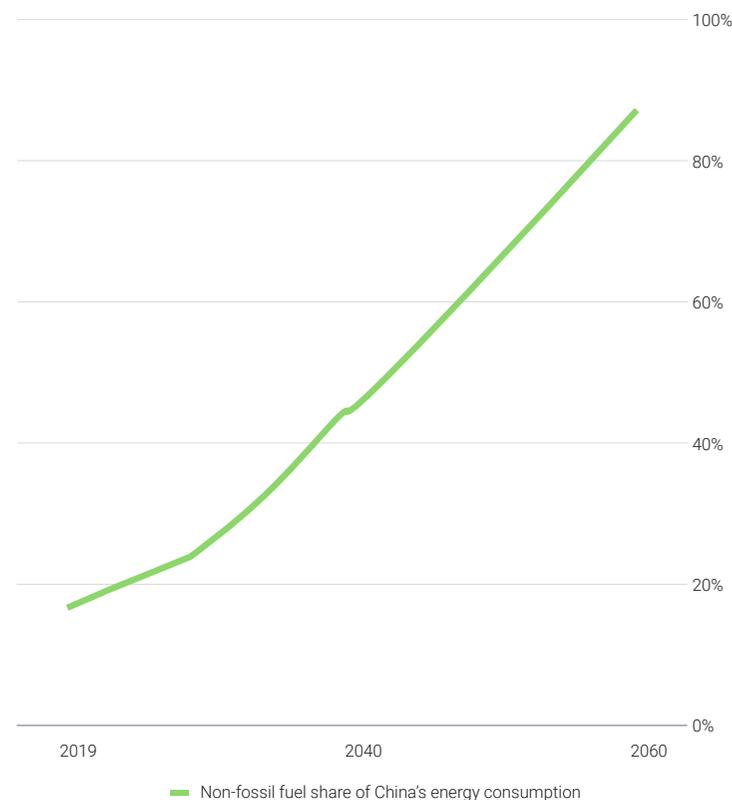
[China to restrict expansion of solar equipment producers](#)

Clean energy progress after the Covid-19 crisis will need reliable supplies of critical minerals

Mining The Future, FP Analytics Special Report, May 2019

### RISING RENEWABLES

China is seen boosting non-fossil fuel energy sources to help meet climate targets



## Focus On The Transport Sector

### New Energy Vehicles to become mainstream

In its latest “New Energy Vehicle (NEV) Industry Development Plan”, China’s State Council unveiled its goal to reach a NEV penetration of 20% by 2025 and 50% by 2035 (vs. current 5%). The non-NEV vehicles must be all hybrid-electric vehicles (HEVs), phasing out internal combustion engine (ICE) cars by 2035.

- China’s government expects EVs to represent 47.5% of the passenger vehicle market by 2035, 2.5% for Plug-in hybrids (PHEVs), and 50% for HEVs.

### Innovation-driven development

To support this green mobility transition, China intends not only to subsidize NEV purchases but also to promote technological innovation and allow breakthroughs to happen.

- By 2025, the average consumption of EVs should fall to 12kWh/100km (current avg. at 15kWh).
- A “reward system” for fuel cell vehicles is to be implemented where markers and local governments will be rewarded based on technology adoption.

### Scaling-up new infrastructure

China is to accelerate the construction of EV charging infrastructure (both battery and hydrogen) and battery swap stations.

- Shanghai is to add 100’000 – 200’000 NEV private & public charging points over the next 3 years.
- China’s government said it will also support the construction of intelligent roads that are to be connected to vehicles.

CHINA PASSENGER VEHICLE SALES BREAKDOWN  
BY FUEL TYPE – GOVERNMENT’S TARGET PENETRATION RATES

Vehicle type	2020E	2025E	2030E	2035E
EV	3.9%	18.0%	37.2%	47.5%
PHEV	1.1%	2.0%	2.8%	2.5%
HEV	0.8%	40%	45.0%	50.0%
ICE	94.2%	40%	15.0%	0.0%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



SOURCE:

[http://www.gov.cn/zhengce/content/2020-11/02/content\\_5556716.htm](http://www.gov.cn/zhengce/content/2020-11/02/content_5556716.htm)  
Fuel cell vehicle pilot to reward initiatives by city clusters

# The Critical Role Of Batteries

## Strong growth ahead

The global EV battery annual demand is expected to grow from current 170 GWh to above 1'700 GWh by 2030. China is to maintain its domination in the battery supply chain, while other geographies are also ramping up production (notably Europe, U.S., Japan, and South-Korea,).

- China is home to key battery manufactures such as CATL or BYD and controls 80% of world's raw material refining, 77% of world's battery cell capacity and 60% of world's component manufacturing.

## Main battery components

Most of today's EV li-ion batteries are made of a few main components, namely: the cathode (source of li-ions), the anode (stores & releases li-ions), the electrolyte (medium in which ions flow), and the separator (preventing contact between anode and cathode).

- Different li-ion batteries exist, depending on the cathode material used, the anode composition, separator type and the electrolyte.

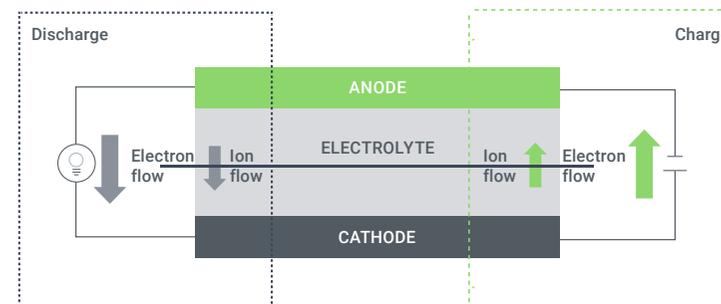
## Yunnan Energy leading in the separator segment

Within the battery cell value chain, the separator segment appears to be one of the most consolidated ones with only a few players capturing most of the market share due to its high complexity & capital intensity.

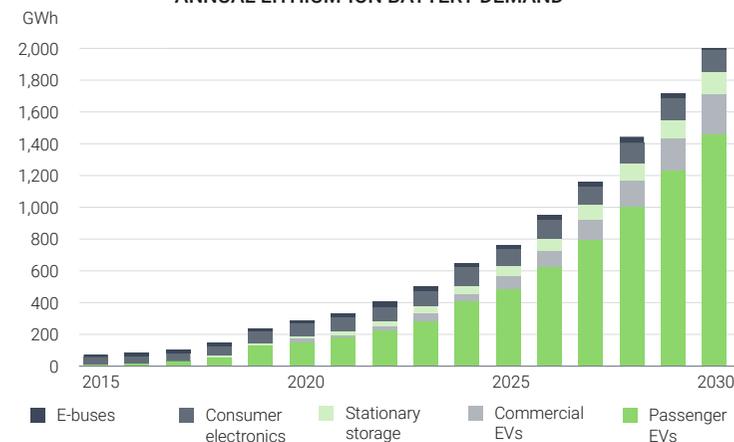
- Yunnan Energy New Material (part of our portfolios) stands out as a market leader, with 28% global market share and >40% in China.
- The company can leverage on existing partnerships notably with some leading battery makers such as CATL or LG Chem.

SOURCE:  
[China Dominates the Lithium-ion Battery Supply Chain, but Europe is on the Rise](#)  
 Innovation in batteries and electricity storage, IEA 2020

MAIN COMPONENTS OF RECHARGEABLE BATTERIES



ANNUAL LITHIUM-ION BATTERY DEMAND



## Catalysts

- **New supportive measures.** China's 2060 carbon neutrality goal is likely to be enhanced by a set of more specific policies and measures that would further drive technology adoption.
- **Technology breakthrough.** With its reaffirmed strategy focusing on research & innovation, China is likely to be home to new technology breakthroughs notably in battery sector.
- **Strengthened U.S. collaboration.** The newly elected U.S. president could normalize U.S.-China relationship and ease trade barriers notably on solar equipment.

## Risks

- **Intensified competition.** The U.S. and E.U. are realizing the importance of clean technologies and are putting efforts to develop local production which can be a risk to Chinese companies.
- **Social pressure.** China's climate ambitions might face social pressure notably by the millions of Chinese working in the coal mining industry.
- **COVID resurgence.** A new COVID-19 wave in China could impact China's cleantech economy in the short term, with factories shutting down and delaying deliveries.

## Bottom Line

- China, as the largest energy consumer and greenhouse gas emitter, has a central role to play in the energy transition. For environmental, economical, and geopolitical reasons, the country understands the need to accelerate the transition to greener energy sources and is putting all efforts to maintain the leadership its has acquired in producing and deploying clean technologies.
- Due to the strategic nature of the cleantech sector, we expect a global increase in investments in response to China's stance. In our portfolios we currently hold a sizeable exposure to Chinese companies active in the cleantech sector.

### Companies mentioned in this article:

BYD (002595 CH), CATL (300750 CH), LG Chem (051910 KS), Yunnan Energy New Material (002812 CH)

# CHARTS FOR THOUGHTS

## China's Global Wealth Effect

### China has helped make the world more "equal"

The top chart, courtesy of Max Roser of Our World in Data, shows how global income distribution has translated to the right, towards a more normal distribution, implying higher income equality.

- The shift has clearly been more marked in the last half century than in the previous 150 years.
- Looking at the individual components, the engine behind this shift has been the spectacular growth in China.

### China is the new middle class

The bottom chart, from Credit Swiss Global Wealth Report, shows how wealth is distributed across the main economic regions.

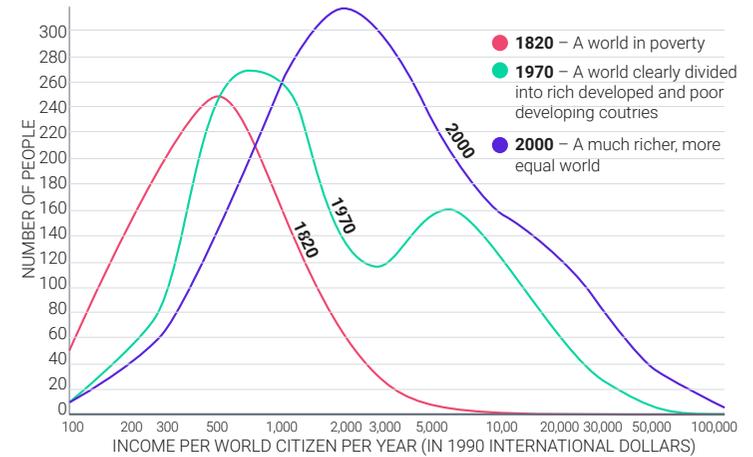
- The U.S. and Europe are clearly skewed towards the high deciles.
- China and India are the "biggest", reflecting population numbers.
- China clearly dominates the upper-middle class area.

### An ongoing shift with more to go?

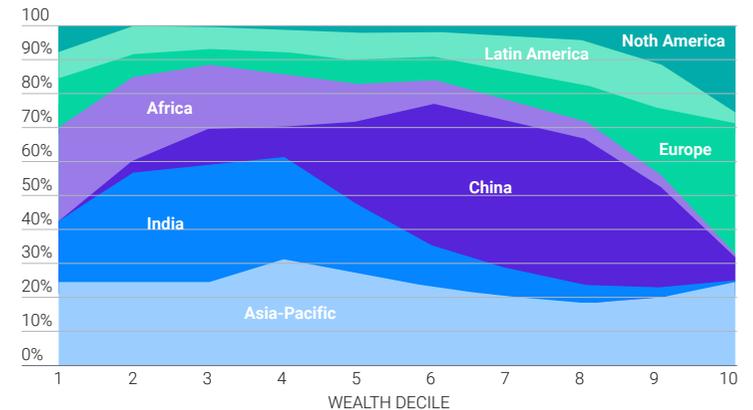
China wealth increased significantly over the past 50 years, reflecting the strong growth of its economy, and its transformation from an agricultural to an industrial country.

- If the ongoing transformation from a basic industrial economy to an advanced high-tech society brings a similar effect, will China end-up replacing Europe and the U.S. in the top global wealth decile?

THE WORLD INCOME DISTRIBUTION IN 1820, 1970 AND 2000 – BY MAX ROSER

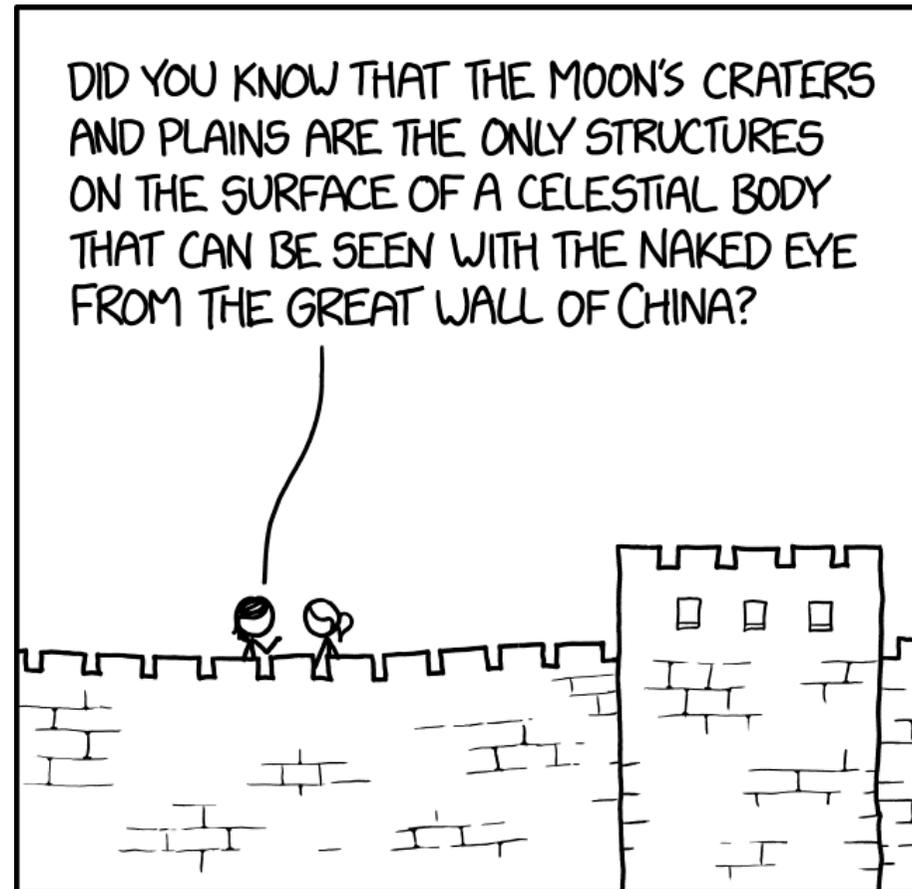


REGIONAL COMPOSITION OF GLOBAL WEALTH DISTRIBUTION IN 2014



SOURCE:  
[Income Inequality](#),  
 Credit Suisse 2014 Global Wealth report

# CASUAL FRIDAY



SOURCE:  
<https://xkcd.com/1921/>

# Invest Beyond The Ordinary

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AtonRâ Partners is a conviction-driven asset manager combining industrial and scientific research with financial analysis. AtonRâ Partners focuses on long-term trends powerful enough to be turned into thematic equity portfolios.

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