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Perspective from
Franklin Equity Group

From fast follower to fast leader:

My journey into China's biotech boom

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Key Takeaways:

- China's strategic focus on biotech has resulted in research and development (R&D) investments and other policies that have helped build the infrastructure (labs, talent pipelines, and capital) for the sector to scale rapidly.
- Biotech companies in China are advancing pipelines that include dozens, sometimes hundreds, of drug candidates through Phase 2 trials, then out-licensing them for late-stage development.
- If the United States wants to maintain leadership in biotechnology, it must follow China's example in supporting innovation, speed and efficiency.

Setting the stage

When I first visited China nearly two decades ago, the country's pharmaceutical sector was in a very different place. It was small in scale, focused almost entirely on the domestic market, and dominated by generic drugs or medicines in-licensed from Western companies. Local firms had limited research capabilities, and global biotech investors barely considered China a serious player.

Fast forward to 2025, and the transformation is staggering. Biotechnology has become one of Beijing's top strategic priorities, supported by major government initiatives like "Made in China 2025" and the "14th Five-Year Bioeconomy Plan."

“The pace and breadth of innovation are reshaping the competitive landscape.”

“Made in China 2025” was a sweeping industrial policy launched to reduce the country’s dependence on foreign technology and elevate domestic innovation. For biotech, this meant direct investment into R&D, generous tax incentives, subsidies for drug development, and the creation of high-tech industrial parks dedicated to life sciences. The policy helped lay the infrastructure (labs, talent pipelines, and capital) for China’s biotech sector to scale rapidly.

“The 14th Five-Year Bioeconomy Plan” built on that foundation by making biotech one of the “pillar industries” for national growth. It called for accelerated development in precision medicine, novel therapies, and next-generation manufacturing. It also encouraged faster regulatory approval timelines, improved intellectual property protections, and policies to attract and retain top global scientific talent.

Together, these programs have fueled an innovation ecosystem unlike anything China has ever seen—one that is reshaping the global competitive landscape.

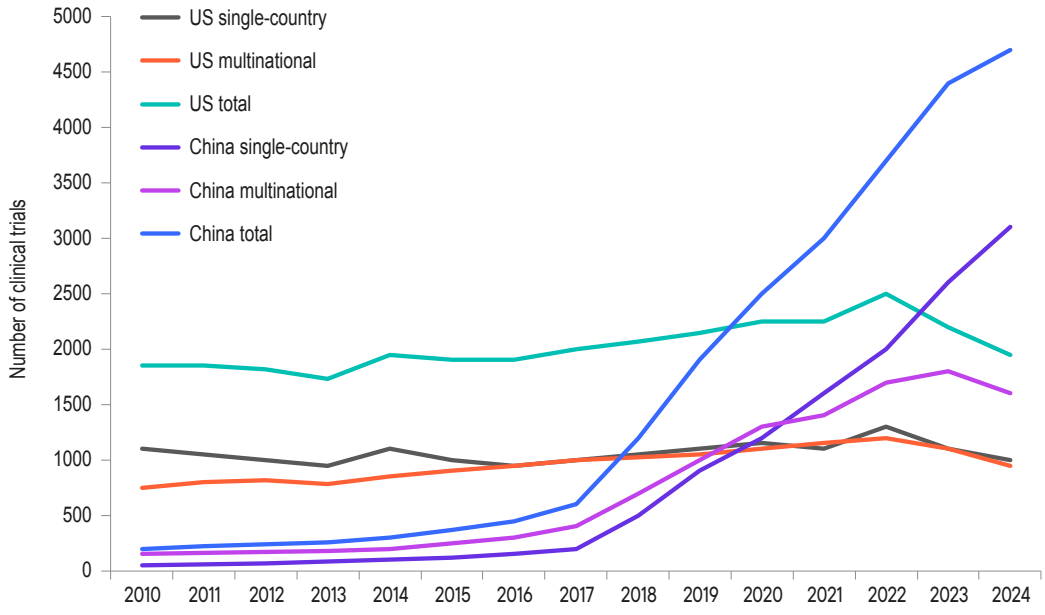
This year, I traveled to Shanghai and met with more than 50 public and private biotechnology companies. What I found was an industry brimming with ambition, scale and speed, along with important implications for US and European biotech companies.

Observation 1: Pipelines as far as the eye can see

The scale is striking. Many Chinese biopharmaceutical companies are advancing pipelines that include dozens, sometimes hundreds, of drug candidates. In dynamic therapeutic areas such as oncology, obesity, and immunology, firms are aggressively accelerating clinical development of both “me-too” compounds (which closely resemble existing drugs with minor modifications) and “me-better” therapies (which offer meaningful improvements over current treatments). The pace and breadth of innovation are reshaping the competitive landscape.

Exhibit 1:
China's pipelines

Industry-sponsored clinical trials for innovator drugs



Source: Clinical Trials and GlobalData, February 12, 2025.

“China’s cost structure and clinical environment create enormous competitive advantages.”

Observation 2: A business model turned upside down

Why so many assets? The answer lies in a different business model. US biotechs typically build focused pipelines around a handful of assets they can either commercialize themselves or sell through acquisition. Chinese biotechs, by contrast, prioritize breadth. Their strategy is to advance as many compounds as possible through Phase 2 proof-of-concept, then out-license them to Big Pharma for late-stage development.

For multinational drugmakers, this dynamic has created a buyers’ market. Companies like Merck, Pfizer and GSK are filling their pipelines by licensing Chinese molecules, from PD-1 bispecifics[1] to next-generation GLP-1 drugs for obesity. Yet the sheer number of assets far exceeds what Big Pharma can absorb. Which drugs ultimately make it to market remains an open question.

Observation 3: Tremendous cost and speed advantages

China’s cost structure and clinical environment create enormous competitive advantages. Clinical trial expenses in China are a fraction of those in the United States, costing around US$50,000 per patient in an oncology trial versus over US$200,000 in the United States.[2] Lower labor rates also help reduce research costs. Top Ph.D. scientists in China earn about one-fifth of their US counterparts, while often working longer hours.[3]

Enrollment is also dramatically faster. Early-stage trials are typically similar in size to those in the United States, but China’s population and centralized health care system allow for much quicker recruitment. Mid-stage trials that might take years in the United States can often be completed in months in China.

Observation 4: Innovation is catching up

The old perception of China as a land of “fast followers” is rapidly becoming outdated. While many companies are still focused on known drug targets, they are increasingly demonstrating meaningful advantages: improvements in efficacy, safety, or convenience that could allow them to compete globally. More importantly, I saw a growing number of firms working on novel targets and cutting-edge modalities: bispecific and trispecific[1] antibodies, bispecific antibody-drug conjugates, in vivo CAR-Ts, and next-generation siRNA platforms.[4] This level of innovation is impressive, and I believe it’s underappreciated by many investors.

Implications for US and European biotech

Increased competition

In key therapeutic areas like oncology, immunology and obesity, dozens of Chinese companies are developing drugs that target the same biological pathways. Historically, the high cost of conducting clinical trials in the United States limited competition within a drug class to just a few players. In contrast, China's lower trial costs allow many firms to pursue similar targets simultaneously. This surge in parallel development intensifies competition, creates a crowded and complex landscape, and increases the likelihood of price-driven battles that could ultimately diminish market potential.

In-licensing opportunities abound

Because most Chinese biopharma companies avoid the substantial capital commitments required for global Phase 3 trials and US commercialization, they will need partners to move their programs forward. This dynamic generally favors large pharmaceutical companies and established biotech firms in the United States and Europe, which are well-positioned to selectively advance the most promising candidates into late-stage development, while leaving weaker candidates behind.

A call to policymakers

The rise of China's biotech sector could pose a real challenge to US scientific leadership. Policymakers need to act to restore competitiveness. That means streamlining Food and Drug Administration (FDA) review times, modernizing regulatory processes, restoring National Institutes of Health (NIH) and academic funding, and creating reimbursement models that balance innovation with affordability. While recent protectionist proposals in the United States may slow deal-making with Chinese companies in the short run, over time they risk making the US industry less competitive—and ultimately, patients lose out.

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Final thoughts: A market growing up

On the flight home from Shanghai, one thought kept coming back: Chinese biotech is growing up fast. The country now has a powerful R&D engine, an efficient clinical trial ecosystem, and a pipeline of molecules that matter for global health.

This certainly raises the level of competition in global biotech, but that competition can make the whole industry stronger. I expect investors to increasingly favor companies pursuing truly novel science, while leaving incremental "me-too" approaches behind, especially as Chinese firms can develop those cheaper and faster.

For patients, this means the potential for bigger breakthroughs. For investors, it means a market full of both risks and opportunities. And for policymakers, it is a wake-up call: if the United States wants to maintain leadership in biotechnology, it must follow China's example in supporting innovation, speed and efficiency.

Endnotes

1 A PD-1 Bispecific is an engineered antibody designed to bind to two different target molecules simultaneously. A trispecifc binds three. These antibodies are used in cancer immunotherapy to restore anti-tumor immunity.

2 Source: Clinical Leader, Report Reflects Huge Growth of Clinical Trials in China.

3 Source: Payscale, Average Research Scientist Salary in China.

4 In vivo CAR-T therapy is an approach where genetic material is delivered directly into a patient's body, often using a viral or synthetic vector, to engineer the patient's own T-cells into cancer-fighting CAR-T cells inside the body. Small interfering RNA (siRNA), sometimes known as short interfering RNA or silencing RNA, is a class of double-stranded non-coding RNA molecules.

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