

China's R&D Policies Explained

*The innovation race is on—and China says,
“Bring it!”*

By Lydia Clowney

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For the last decade, the People's Republic of China has been laser-focused on winning the innovation race and overcoming the United States' technological and economic primacy. And they've been getting there, fast. In fact, China has just entered its 14th "Five-Year Plan." As a command economy, the central government doesn't have to deal with the messiness of partisan politics, nosy news outlets, or uncooperative businesses. In China, industrial policy (like all policy) comes from on high—not from the rabble.

Increasingly, that policy is focused on shifting from China's unquestioned manufacturing predominance to innovation in general—and high-tech innovation in particular. The geopolitical tensions that intensified during the Trump Administration (which have hardly abated in the early months of the Biden Administration) have only added fuel to the fire: China has been racing to develop its own core technologies in areas such as semiconductors in order to reduce its exposure to U.S. supply chains, and what it decries as U.S. bullying.

But it would be wrong to attribute China's accelerating focus on R&D as just a defensive move. It's also part and parcel of a larger strategic goal: winning the innovation race—and with it, the future.

There's no denying China's traction, or trajectory, in this R&D arms race. While the U.S. still leads the world in total investment in R&D, its share of total research spending has shrunk to less than 30%—and China has been aggressively closing the gap. However you slice it, the numbers lay bare the story: From 2000 to 2017, while U.S. R&D spending grew at an average annual rate of 4.3%, China's spending increased at a staggering 17% per year. By 2017, the United States accounted for 25% of the \$2.2 trillion global R&D spend, while China made up 23% (2018 figures reported by the OECD showed total R&D spending in China reached \$463 billion—a scant \$89 billion behind the United States). In 2019, R&D spend as a percentage of GDP stood at 2.8% in the U.S. and 2.2% in China.



The Chinese government is gunning to reach parity (that 2.8% share-of-GDP level) by 2025. And it hasn't been shy in continuously enriching its buffet of R&D incentives to get there.

So great has been the alarm, stateside, that in June 2021 the U.S. Senate managed to temporarily shrug off its partisan torpor and—by more than a two-thirds margin—pass legislation that would amount to the most significant government action on industrial policy in decades. (At time of publication, this version had yet to be reconciled with the House's.) The new bill would pour nearly a quarter-trillion dollars into scientific R&D over the next four years, with an emphasis on emerging technologies such as semiconductors, AI, robotics, and quantum computing—not coincidentally, many of the same areas China has been trumpeting as key to its future supremacy.

Getting down to brass tacks, what does that mean for businesses conducting (or thinking of conducting) R&D in Mainland China? What kinds of goodies can you expect, and what hoops do you have to jump through? From generous “super deductions” (\$100 of qualifying R&D expense treated as \$175 from a tax perspective)... to sharply reduced income tax of 15%... to VAT waivers... to support for VC and startups... to special incentives in designated “special economic zones”... to tax holidays—the Chinese central government isn't afraid to use all available tools to encourage more technological innovation. Here, we dive into the details.



Who's Eligible, and How Do You Qualify?

China defines R&D in broad strokes: the “creative application” of new science and technology for the purpose of obtaining new scientific or technological knowledge—or continuous, systematic activities focused on the specific goals of “substantive improvement” of technologies, products, services, or processes.

When it comes to the question of who is eligible for R&D-related tax benefits, the answer is short—but not simple: it depends on the benefit, on the entity, and the activity. This being China, there are plenty of rules, no matter where you look.

The beneficiaries of China's R&D largesse can be broken down into two categories: Chinese-owned enterprises who meet strictly defined qualifications, and any qualified entity (including foreign-owned companies) conducting business in China.

In terms of Chinese-owned enterprises, China has singled out two types of enterprise for special attention: **HNTEs** (high and new technology enterprises) and **TASEs** (technologically advanced service enterprises—companies focused on high-tech offshore outsourcing).

HNTEs are eligible for both the reduced corporate income tax (CIT) of 15%—instead of the standard 25% rate—and the super deduction. In order to achieve HNTE status, companies must apply to the state and show they have met several key criteria: They must demonstrate: sufficient ownership of IP registered in China; the capability of converting R&D into IP; a minimum R&D headcount, share of revenue, and spend; and the ability to properly manage R&D activities. They also have to show sufficient growth in both revenue and total assets. Another requirement? The use of technology in the core product or service offering, and that technology must relate to a high or new technology area specifically supported by the State, namely computer/data science, biotech/life sciences, aerospace, new materials, high-tech services, energy, environmental resources, or automation.



The HNTE status certificate, which must be applied for in advance, is valid for three years. Tax losses may be carried forward for up to 10 years. HNTEs must compile and retain documentation backing up their activities, and file it for tax bureau review within five months after the end of the annual income tax filing deadline.

HNTEs are regulated by the Ministry of Science and Technology (MOST), the Ministry of Finance (MOF), and the State Administration of Taxation (SAT)—although the actual day-to-day monitoring happens at those authorities' respective provincial offices.

TASEs are also overseen by the MOST, MOF, and SAT, as well as by the National Reform and Development Commission (NRDC). Like HNTEs, TASEs are entitled to a reduced CIT of 15%—plus zero-VAT treatment on qualified revenue from offshore outsourcing services, and a few extras thrown in (including deductibility of a portion of certain salaries). They file their documentation alongside their annual income tax return.

To earn TASE status, a company must be registered in Mainland China and engaged in at least one qualified outsourcing activity that requires advanced technological and R&D capacities—e.g., IT outsourcing (ITO), or business or knowledge process outsourcing (BPO or KPO)—and have a highly educated workforce (at least 50% graduates with an associate degree or above). There are also revenue requirements: at least half must be derived from qualified, technologically advanced services, and 35% from qualified offshore outsourcing services. TASEs generally aren't entitled to the R&D super deduction.

Like HNTEs, TASEs must secure pre-approval prior to applying for these incentives.

A third category eligible for tax relief—qualified software enterprises—also has specific R&D intensity, IP, educational, expenditure, and revenue requirements. At time of publication, these tax incentives (along with applicable rules) are getting an overhaul by the Chinese authorities.



Non-HNTE, non-TASE entities can be foreign- or domestic-owned and have plenty of attractive R&D incentives to shoot for as well. The super deduction is aptly named. Eligible R&D expenses qualify for an additional 75% deduction over and above the full original expense (recently increased to a whopping 100% for manufacturers), provided that the expenses are not converted into intangible assets and are included in the current P&L. If the expenses have already been converted into an intangible asset, they may be amortized before tax at 175% (200% for manufacturers) of the actual cost of intangible assets. Unlike HNTEs and TASEs, advance approval from tax authorities is not required— just comply with ordinary tax-return procedures. You can even apply for the super deduction retroactively—up to three years after the qualifying expenses were incurred.

Which expenses entitle you to the R&D super deduction? Labor costs for personnel directly involved in R&D activities; direct investment costs (including materials, fuel, and maintenance); fixed-asset depreciation; as noted above, amortization of intangible assets used for the R&D; design- and testing-related fees; and any other costs directly related to the R&D (the latter are capped at 10% of total qualifying R&D spend). Not all industries are eligible to participate, however: companies in the tobacco, hospitality, wholesale and retail, real estate, leasing and commercial services, and entertainment businesses are all barred from using this incentive.

Another sweetener: The government announced in March 2021 that VAT will continue to be refunded in full for both domestic and foreign-funded R&D enterprises that purchase China-made equipment between 2019 and 2023. (That tax break was originally slated to expire at the end of 2020.)



Patent box and **technology transfer** schemes also provide significant tax concessions for companies generating revenue from intellectual property—such as the sale or licensing of intellectual property including patented technology, software, IC designs, biopharmaceutical products and the like. The company doing the transferring must be a tax resident of China and comply with numerous state and provincial requirements, which can vary. But the benefits can be significant: not only is their customs duty on R&D equipment waived, income of up to RMD 5 million is fully exempt from CIT, while income above RMB 50 million is entitled to a 50% reduction. Qualifying private institutions may also be eligible for exemptions from VAT, import duty, and consumption tax on the import of items for scientific R&D use.

As always, China's generosity is balanced by rigorous compliance requirements and oversight. Companies claiming either the R&D super deduction or the tech transfer incentives are required to self-assess incentives and retain all certificates and contemporaneous records for future inspection.

China's R&D support also extends to **venture capital**—China-based entities or individuals who invest in startup tech companies—under complex conditions. Up to 70% of that investment can be deducted against income, if the investment has been held for at least two years, with any unused balance eligible to be carried forward.

Finally, China has designated numerous **National Economic and Technological Development Zones** (NETD Zones), each of which offers its own R&D incentives and policies, which, like so many other regulations in the mainland, tend to be as diverse and specific as they are complex and changeable.



Small Business, Big Impact

When it comes to lavishing attention on high-potential companies, China no longer plays favorites. With only a few exceptions, it seems to treat all businesses, small and large, the way other countries focus on small- and medium-sized enterprises (SMEs). Case in point: Up until 2019, the 175% super deduction was available only to tech-focused SMEs for qualifying R&D expenses. The government has since expanded the scope of the 175% super deduction to include all qualifying businesses, regardless of size.

That said, high-tech SMEs still enjoy some targeted incentives—whether directly, in special innovation demonstration zones subject to individual provincial rules, or indirectly, through the expanded venture capital tax incentives described earlier. Also, in March 2021, China announced it will provide more support for small- and micro-sized companies in the form of loans. It also rolled out new corporate income tax reductions for SMEs who meet certain income limitations.

The Takeaway: When It Comes to R&D, China Means Business

Competitive tensions—economic, political, and technological—between the U.S. and China have been building up for years, and the stakes seem to get higher by the day. For much of the West, the COVID-19 pandemic's disruption of business (and movement) as usual has laid bare an uncomfortable degree of dependency when it comes to the twin engines of China's economic growth: manufacturing and technology.



All of this prompts a question: Is the gradual decoupling of the world's two most powerful economies a good thing or a bad thing? Are we witnessing an R&D Cold War—a zero-sum fight for technological dominance—or a new Sputnik moment: a tech space race that fires up the animal spirits of innovation (and funding) in both countries?

While the answer can no doubt be found in shades of gray, one thing is clear: China's aggressive moves in nurturing innovation at home are upping the game for everyone. When it comes to investments—public or private—in research and development, that's one kind of rivalry that is most definitely a positive.





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