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State and Business Players in the Evolution of China’s Industrial Development

China’s decades of economic development involve both state and business actors. The general assumption in policy circles is that the state and state-owned enterprises are the two major drivers of economic development. However, in an economy as large as China’s, the relations among a series of actors are key: central governments, local governments, state-owned enterprises, private businesses, and foreign-invested firms. One would not be able to gain a fundamental understanding of China’s economic ecosystem without examining the changing dynamics among these actors.

1. The Reform Period and the Pluralization of Actors

Before China’s open-door policy, the state focused on supporting the state-owned enterprises based on Soviet technology. In a major shift of economic trajectory, Deng launched the reform and open-door policy. In the beginning, it was a much more controlled opening in the form of forming joint ventures, guided under the idea of “exchanging market for technology.” Central governments, as well as the provincial governments (including municipalities), sought to promote domestic industries and gain technology by forging marriages between bilateral JVs between state-owned enterprises and foreign-invested firms.

At the provincial and city levels, and starting in the 1990s, the central government started moving away from the centrally controlled JVs into a much wider form of attracting foreign investment across the entire country, delegating more authorities to localities. Once this process took place, it significantly pluralized actors driving the economic development. Central and local governments, as well as domestic and foreign firms, became active players.

It was during this period that the cadre evaluation system was systematically implemented across localities at the provincial, city and county levels. It is an institution where upper-level officials used a series of indicators to evaluate lower-level officials (one level down), and the results became the basis for promotion and bonuses. Top among the list of targets were GDP, GDP growth, industrial output, investment attraction, foreign investment, and revenue. The cadre evaluation system instilled strong political incentives for local bureaucrats to accomplish policy mandates and build achievements through economic and industrial performance. This cadre evaluation system, paired with budget constraints created by the fiscal reform, turned localities into engines of growth. The period saw a proliferation of development zones, campaigns of investment attraction, and the use of tax-break and land discounts.

Both domestic and foreign firms experience a golden period of fast growth. Foreign firms became increasingly wholly foreign-owned. Although domestic firms, especially domestic private firms, often complained about themselves being third-class citizens compared to state-owned and foreign firms at the time, their integration into the global value chains through outsourcing and offshoring has the *de facto* effect of increasing their production orders. Compared to SOEs and foreign-invested firms, which often have established channels of information exchange (SOEs through the government, and foreign firms through the department that manages them and FIES through the office of development zone governments) domestic private firms often had to establish their own political connections with the government in order to facilitate their business.

2. The Rise of Indigenous Innovation

As China became the world's workshop, two challenges/limitations immediately arise. First, Beijing has recognized that the country has been located at the end of the global value chain competing on razor-thin profits with cheap labor. Second, foreign firms that resourced in China can hardly transfer any proprietary technology (let alone core technology), and were mainly interested in taking advantage of the supply chain and labor. These two concerns gave rise to voices in China for upgrading and innovation. Under such background, the Ministry of Science and Technology commissioned a series of research reports, which gained attention from central leaders. The formal launch of the initiative in 2006 and the use of the vocabulary "indigenous innovation" rather than "open innovation," signified the determination of the leadership at the time. Thus rather than gaining significantly through theft of technology, as many observers believed, China launched this initiative precisely because it gained little key technology by simply opening up the markets. As of then, high-tech development zones were established across entire jurisdictions in addition to the previous FDI zones. Government funding, subsidies

and tax break policies for science and technology innovations were also created at the central and the local levels.¹

However, at the provincial and city levels, officials were left with much room to interpret and implement policies in their own ways, which profoundly influenced the players at stake. The city's leadership team (*lingdao banzi*), showed increased incentives to develop technology, because many cities added high-tech indicators such as high-tech product output to the cadre evaluation system. At the department level, there were more fights along vertical lines of authority. Some departments such as foreign economic and trade, saw their associations more with foreign firms and held urgent meetings to respond to the situation. Other departments such as science and technology (ministry and the bureaus) saw the rise of indigenous innovation as opportunities but were under pressure from other departments that historically control more resources.²

In some regions, mostly the Yangtze River Delta, the agenda was ultimately translated into "upgrading," which continued attracting multinational high-tech firms (such as Compal, Samsung, Philips) to invest in the high-tech zones. Sometimes these firms were matched with state capital for share-holding (different from matching with existing SOEs). Local governments and multinational firms became the key players. In other regions, such as Shenzhen, indigenous innovation was translated by officials as providing support for indigenous firms (even though sometimes they might not be doing exactly tech innovation). In these localities, the role of domestic firms in the economy and upgrading increased. One saw further differentiation among firms during this time: firms that focused on innovation and technology started rising and approaching the top of the value chain, whereas those that didn't, started to be further trapped at the bottom of the value chain.³ But overall, the majority of the industrial firms did not compete on cutting-edge technologies and focused on the middle segment of the market.⁴

4. Centralized Development and the Nationwide System in the Xi era

The Xi era saw several very different developments in China's economic system, which departed from the past. First, the decision-making has overall been more centralized, with local governments having less room in the process of policy implementation. At the same time, the anti-corruption campaigns to some extent cut the ties and networks between the state and the

¹ Ling Chen, *Manipulating Globalization: The Influence of Bureaucrats on Business in China* (Stanford, CA: Stanford University Press, 2018).

² Ling Chen, "Grounded Globalization: Foreign Capital and Local Bureaucrats in China's Economic Transformation." *World Development* 98 (2017): 381-399.

³ Ling Chen, "Varieties of Global Capital and the Paradox of Local Upgrading in China," *Politics & Society* 42, no.2 (2014): 223-252.

⁴ Loren Brandt and Eric Thun, "The Fight for the Middle: Upgrading, Competition, and Industrial Development in China," *World Development* 38, 11 (2010): 1555-1574.

business, with certain effects of curbing corruption, rendering some businesses harder to bribe for illegal resources, but also led to non-action or shirk of duties in the bureaucracy. Second, the scale and size of the private businesses have continued to rise, but there have been divergent paths between businesses in risky, non-industry sectors and those in high-tech industries. The former often display a pattern of fast expansion followed by sudden collapse or government crackdown, whereas the latter has been steadily and systematically promoted by both the central and the local governments under the influence of rising techno nationalism.

4.1 The re-centralization of economic policies and the anti-corruption campaign

In the Xi era, the authority of the government to supervise the economy has been more centralized. The NDRC, which used to be a powerful agent in economic and industrial planning, lost significant power over areas such as key national projects, creation of development zones, climate changes, agriculture investment, anti-monopoly regulations, and SOE reforms. By curtailing its power, the central government advanced “top-level design” and consolidated authority into the hands of the small leading groups.⁵ The authority, especially personnel and fiscal authority, has increasingly been directed towards the central government, but some of the responsibilities such as housing, education, business licenses have remained local.

The anti-corruption campaign has resulted in 1.5 million officials being disciplined with closer supervision than before.⁶ There is evidence suggesting that the anti-corruption campaign has indeed been targeting corruptions instead of pure factional fights, which converged with the original goal of disciplining the party-state.⁷ Before the launch of the campaign, government-business collusion and petty corruption in the form of bribing and banquets were prevalent, yet this trend has reportedly been sharply declined since the start of the campaign. Many beneficial policies in land, taxes, utility discounts that the government granted to firms were based on local government discrepancies, but officials are now cautious to do so, which has the de facto experience of curtailing patronage networks.⁸ Businesses with previous corrupt experiences, such as acquiring land illegally or skipping inspection for sub-standard products through personal ties were also punished.

⁵ Frank Tang, “Too big and too powerful’: why Xi Jinping is reining in China’s economic planning agency,” South China Morning Post, March 14, 2018 <https://www.scmp.com/news/china/economy/article/2137043/too-big-and-too-powerful-why-xi-jinping-reining-chinas-economic>; Neil Thomas, “Change of Plans: Making Market Capitalism Safe for China,” Macro Polo, December 30, 2018 <https://macropolo.org/analysis/change-of-plans-making-market-capitalism-safe-for-china/>; Wendy Leutert, “Firm Control: Governing the State-owned Economy Under Xi Jinping,” *China Perspective*, 1-2 (2018): 27-36.

⁶ “China’s Effective Campaign Sets Model for Global Anticorruption Cause,” Xinhua, 11, March 2018.

⁷ But there was also evidence that certain political connections can serve as protection. See Peter Lorentzen and Xi Lu, “Personal Ties, Meritocracy, and China’s Anti-Corruption Campaign,” 2018, working paper https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2835841.

⁸ Peng Wang and Xia Yan, “Bureaucratic Slack in China: The Anti-corruption Campaign and the Decline of Patronage Networks in Developing Local Economies.” *The China Quarterly*, 243 (2020): 611 – 634.

On the other hand, however, there are also concerns that because local governments were cautious in their behavior, they were shirking from their duties, which caused paralysis, bureaucratic slack, and non-action. Most of the time they would rather not have initiatives or mobilize their resources rather than committing errors. Paired with the shrinkage of space in which local governments can interpret, implement or manipulate policies, the enthusiasm of launching local initiatives on their own seems to be quenched.⁹ Whether this has directly influenced economy is still up to debate, but there are initial findings such as the visits by anti-corruption inspection teams reduced the number of business entries in localities.¹⁰ At the same time, connections rather than performance seem to be helpful in both avoiding disciplinary action and further promotion. Overall, the importance of superseding in economic performance seemed to have declined, contrary to the cadre evaluation system in the previous periods.¹¹

4.2 Growing importance of private businesses and their divergent paths

Private businesses have reached a far more mature stage and have grown more significantly in terms of their sizes, becoming an undeniably important player during this time, whereas the rise of international tension has decreased the role of foreign businesses. The momentum for the growth of private businesses has been decades-long, but compared to the era when Jiang Zemin advanced the three representative periods, top private businesses such as Huawei and Alibaba, have significantly strengthened their roles domestically and internationally.¹²

Of these businesses, there have been divergent paths among two types of businesses, which also given rise to two different types of government-business relations. The first type of businesses were companies in service industries such as insurance, finance, real estate and entertainment that have the risk of bubbles when they expand, the so-called grey rhinos problems. When faced with disciplined pressure at home, ambitious firms such as Anbang and Wanda expanded externally, especially when the state further loosened such investment for private businesses in 2012. Yet this unleashed a rapid fleeing of capital, with billions of dollars involved in acquisitions in sectors such as hotels and entertainment, which were not deemed as key industries. The central regulators were alarmed and decided to crack down on such activities. A similar story has happened to the Ants Group. For these private businesses, the

⁹ Yuen Yuen Ang, *China's Gilded Age: The Paradox of Economic Boom and Vast Corruption* (New York: Cambridge University Press, 2020); Nick Marro, "The Unintended Consequences of China's Anti-corruption Drive," US-China Business Council, November, 2012; Peng Wang and Xia Yan, "Bureaucratic Slack."

¹⁰ Nan Chen and Zemin Zhong, "The Economic Impact of China's Anti-Corruption Campaign," September 4, 2020, working paper, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2996009

¹¹ Yuen Yuen Ang, *China's Gilded Age*, Chapter 6; Tianyang Xi, Yang Yao, and Qian Zhang, "Purifying the Leviathan: The Anti-Corruption Campaign and Changing Governance Models in China," working paper, 2018.

¹² This does not necessarily contradict the *guo jin min tui* argument, which mostly focus on the amount of fixed asset investment and state capital investment. See Yasheng Huang, "Varieties of Capitalism in China: Private-Sector Development During the Xi Jinping Era," in Jacques deLisle and Avery Goldstein eds., *To Get Rich is Glorious: Challenges Facing China's Economic Reform and Opening at Forty*; Hao Chen and Meg Rithmire, "The Rise of the Investor State: State Capital in the Chinese Economy," *Studies in Comparative International Development* 55 (2020): 257–277.

central state often alternates between tightening and loosening, producing a pattern that businesses expand by taking advantage of policy loopholes followed by a period where the state recognized that a red line has been reached.

However, the picture is quite different for high-tech companies that focus on industries (*shi ye*). Although having experienced leadership transitions (from Jiang-Li to Hu-Wen to Xi-Li), the high tech firms have been overall a group of firms that the state promotes. These industries, such as IT, digital quantum technology, electronics, and advanced manufacturing also have a much lower risk of financial bubbles as long as they stay close to their core business. Furthermore, the state has mostly focused on rewarding or helping these industries using funding, tax breaks and talent policies, and would use much fewer discipline policies even if these industries failed to meet the goals.

4.3 Techno-nationalism and the nationwide system of innovation

The rising international tension, especially deterioration of US-China relations and the cut-off of supply chains for businesses such as Huawei and ZTE have given rise to techno-nationalism in China. Before the tech war, China avoided head-on competition in tough tech components such as computer and mobile phone chips. Instead, it sought to use manufacturing to break into emerging areas where China still can be a leader, such as new materials, green energy and robots, and aimed to establish China as a major global competitor in advanced manufacturing.¹³

Now the Chinese tech firms have been put in the spotlight in the US-China competition and their success or failure was interpreted as a matter of national survival. The Chinese state leadership has recognized the importance of supporting high-tech firms and digital technology. The pressure from the U.S. has galvanized Chinese businesses and the state to carry out more intensive R&D and raised a strong sense of urgency. Also, prior to the US-China tech war, competition between Huawei and ZTE and between Alibaba and other online platforms was fierce. Yet in face of a bigger challenge from the US, overcoming the technology bottleneck became the priority. Between 2018-2020, Huawei has cut 1.6 thousand personnel in non-R&D areas and has increased 2.5 thousand personnel in R&D. Alibaba has also made significant progress in AI chip development.¹⁴ China started to build a national ecosystem that runs at multiple levels and connects numerous actors for technology innovation.

At the national level, the state has provided support for businesses to make a faster technology leap in chip making, investing \$29 billion in initial funding.¹⁵ In late 2020, the politburo holds a

¹³ Ling Chen, "How this Trade War Could Backfire — in China's Favor." *The Washington Post*, June 25 (2018). Also this is partly due to the fact that previous efforts to develop the chip industry (such as the Huajing and Huahong projects) were not met with success. See Douglas Fuller, *Paper Tigers, Hidden Dragons: Firms and the Political Economy of China's Technological Development* (New York: Oxford University Press, 2016).

¹⁴ Shoupeng Li, "Alibaba announced the production of one of the strongest AI chips," *Semiconductor Observer*, Sep 25, 2019.

¹⁵ Yoko Kubota, "China Sets Up New \$29 Billion Semiconductor Fund." *Wall Street Journal*, October 25, 2019.

collective study of quantum technology and emphasized the importance of having a major breakthrough in core and crucial technology. The 14th Five Year Plan also devoted significant attention to creating a nationwide system (*juguo tizhi*) that supports science and technology development, which is the only place where a “nationwide” system is mentioned in the plan. Although the support of science and technology is not new and can be traced back to the establishment of the country, the emphasis in recent years has been on the “central role” of businesses and firms rather than pure research institutions or government agencies such as the ministry (bureaus) of science and technology.

Vertically, this means that the local governments (at the provincial, city and the district levels) would provide capital investment for major projects, offer funding or rebates for R&D cost, implement tax breaks, attracting talent from a highly-educated pool. Horizontally, this means that with firms occupying the major role in research and innovation, the system connects interactions with numerous other entities, including high-tech development zones, high-tech parks, incubators, research institutions, and universities. In some selective cities, the administrations of high-tech industrial parks have risen to be on par with city governments, and sometimes they were referred to directly as high-tech district governments.

At the same time, firms are embedded in the ecosystem through multi-tiered institutions, seeking to avoid the previous situation of applying one method to all kinds of entities (*yi dao qie*). Among high-tech firms, there are firms that are much larger and stronger, such as Huawei, and smaller, start-up firms. Among the smaller firms, there are initial start-up tech firms, gazelles (those that passed the initial risky periods and have entered high-growth periods), and unicorns (those that were valued at over \$ 1 billion). The tiered ranking has been used by local governments and industrial parks. Different tiers of firms involve different evaluation criteria for acquiring government funds, and the higher the stakes are, the more comprehensive the evaluations are. For higher stake projects, the evaluation process involves departments such as bureaus of finance, science and technology, and environmental protection, as well as independent experts from these areas.

Therefore, at least in the area of promoting high-tech firms (but not necessarily in other areas), local governments are still responding strongly to central governments. For example, as soon as chip-making has become a trend since the start of the US-China tech war (pretty much like what solar panels and electrical vehicles used to be), local governments were reported to give up on the lucrative real estate sectors and invested billions on chip-making so as to gain central funding and to increase investment and revenue.

Does this mean that the central and local governments have always been aligned with each other? Not necessarily. Yet the misalignment seems to lie less in intention than the lack of knowledge or information in specific industries. The recent collapse of the 100 billion yuan HSMC chip project in Wuhan was a clear case where both local governments and the experts in

chip-making were cheated by a team of outsiders who persuaded the district government of Wuhan to make the investment but covered the actual debt in the money-raising process. When the project was found to be fraudulent and it collapsed, the team took part of the money and fled.¹⁶ Similar processes took place in Anhui province and other localities.¹⁷ This phenomenon, later regarded as cheating to obtain government subsidies (*pian bu*), showed that in order to make the state-led development work, it is important to have basic knowledge in semiconductor, electronics, AI and other industries in the decision-making process for local officials when making investment and allocating resources.

Despite these initial problems and even considering certain proportions of failed projects, the emergence of such a multi-layered nationwide innovation system that expanded vertically and horizontally at a rapid speed will likely accelerate the pace of innovation in areas deemed as crucial technologies, such as integrated circuits, AI, and quantum technology. As mentioned above, the key decisions such as approving developing zones and establishing major initiatives were more centralized. But there has been more continuity rather than abrupt disruption from the past in terms of providing policy support to tech firms (capital, fixed assets, tax breaks) for innovation behavior.

Overall, the state, both at the central and the local levels, has continued to play important roles throughout different periods, and the local governments have continued their roles in industrial policies of high-tech areas even when authorities are more centralized. While foreign-invested and domestic firms, state-owned and private firms have all been important players and have had different relationships with the government, as far as industrial and technology competitiveness is concerned, domestic firms, especially non-state-owned firms and private businesses, have gained increasing importance.

5. Policy Recommendations:

- 1) There are multiple players and state and business actors involving complicated and changing relationships over the past few decades. Even among the same group of domestic private businesses, there are diverse paths. One cannot assume that all government and business entities are tools of the central state or act on behalf of Beijing's interests. The U.S. foreign policy must also differentiate between these actors in response to their diverse incentives.
- 2) The current US policy in containing China's technology rise has in fact aroused a more unified response from China, which has pursued and accelerated the development of core technology and established a nationwide innovation system. This effect, combined with the cost to the US

¹⁶ Xiaofen Qiu and Jianxun Su, "In-depth investigation of the 100 billion fraud in a Chip firm," <https://finance.sina.com.cn/tech/2021-01-28/doc-ikftssap1547906.shtml>;

¹⁷ Ye Feng and Congying Feng, "How a Jiangsu businessman gained government subsidies in the past ten years," *Southern Weekly*, December 13, 2020.

business community and the recent shortage of chips in the U.S., suggests that cutting off supply chains may be a counterproductive strategy, whose cost far exceeds the gains.

3) The government plays different roles in the U.S. and China, but ultimately, its investment in cutting-edge technology and its establishment of an innovation-friendly environment is one of the key elements in winning the competition in the 21st century. The U.S. government's funding of R&D as a percentage of GDP has been consistently declining since the Cold War, and its global ranking struggled to remain in the top 10. The U.S. had far more links with contemporary China than with the Soviet Union in terms of economics, technology, and education. Therefore the cost of decoupling or de-globalization is much higher than during the Cold War and the gain much lower. In contrast, increasing federal funding in R&D is more urgent than before with intensified global competition. Yet, the U.S. has chosen the high-cost approach of decoupling while underinvesting in this most urgent R&D priority. In addition, facilitating federal investment in education and facilitating the linkage between education, research and firm-level innovation as well as public-private cooperation is also of critical importance.