

Infrastructure and Its Dark Side

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This article briefly discusses the role of infrastructure in the history of capitalism and the expansion of the state. Recent studies on infrastructure focus on its ontological perspective, arguing the ideological function that is visible upon the built network of infrastructure. According to Marxist theory on the state, the duality of base and superstructure help us understand how infrastructure engages into the making of the state. I will take the Five-year Plan of socialist China as examples to demonstrate the interaction between infrastructure and state-building.

Keywords: infrastructure, state, base and superstructure, China

History of infrastructure

When we think about the issue of development, governance and transition, infrastructure is the dimension that should not be ignored. Infrastructure are built networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space (Larkin 2013).

From the perspective of economics, infrastructure accelerates the circulation of various productive factors. Well-designed infrastructure improves the efficiency of capital accumulation. Infrastructure projects require a large investment of capital, technology, raw materials, and manpower. As the construction demand rises, the scale of production and supply expand. Therefore, infrastructure is sometimes regarded as a tool to stimulate domestic economic growth.

The improvement of steam engines in the eighteenth century marked the beginning of the Industrial Revolution. Machine production replaced manual production and pushed the world into the rapid progress of the infrastructure era. Railways, ports and cities emerged, changing the landscape and the spatial reproduction. To meet the needs of domestic industrialization, colonialists continuously transported raw materials and products from Africa, Asia and America through the ocean trade routes that had been opened up in the age of Discovery. They also built infrastructure upon their colonies in order to plunder and transport materials like coal, steel, iron, sugar, cotton, wool, timber, and other resources for industrial production and trade.

Like a behemoth, infrastructure crawls and occupies every inch of land involved in the global capitalist trade. Being the infra of industry, infrastructure needs stable support from the fiscal and financial system. It requires a duration to invest, construct, and operate. During the Great Depression, infrastructure was used as a significant policy to centralize and strengthen state power, as the US President Roosevelt did in the New Deal Policy in the 1930s. For some regions that are highly dependent on heavy industry, the collapse of banks and substantial economies due to the economic crisis was devastating, resulting in the large-scale stagnation of construction projects.

Another way to feed the behemoth of infrastructure is to start a war. Infrastructures that function as military bases and combat readiness projects are engines to relaunch production. On the other side, the cost of national defense is a huge burden for national economy, too. Arguably, infrastructure is one of the reasons that wars start and never stop. Only by understanding the role of infrastructure in the history of capitalism and the expansion of the state can we fully illustrate the politics of infrastructure and its dark side.



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Infrastructure and the state-building

Karl Marx and Friedrich Engels used the metaphorical term of base and superstructure to describe the relation between the economic structure of a society and the state and social consciousness. In *German Ideology*, Marx wrote that "the social organization evolves directly out of production and commerce, which in all ages forms the basis of the state and of the rest of the idealistic superstructure." This duality lies the foundation of Marxist theory of the state. As Marx puts it in *Capital III*, "it is always the direct relation of the owners of the conditions of production to the direct producers - a relation always naturally corresponding to a definite stage in the development of the methods of labor and thereby its social productivity - **which reveals the innermost secret, the hidden basis of the entire social structure, and with it the political form of the relation of sovereignty and dependence, in short, the corresponding specific form of the state.**" By Marx's definition, the form of state belongs to the category of superstructure. According to Marx, the base-superstructure relation is far beyond economic reductionism. The base-superstructure relation

has characters of historical, uneven, and compatible with the effectivity of the superstructure (Bottomore 1991). The reciprocal influence by forms of superstructure, namely the spiritual production, and the inter-effectivity among the material and spiritual production are conditioned in particular historical forms. Furthermore, material production develops unevenly with respect to artistic production and legal relations.

Infrastructure studies help us understand the complex relation between the economic base and the superstructure, especially the process of how state-led infrastructure engages into production, consumption, and exchange in the local area. Additionally, how do techno-politics affect the condition of production? (Contemporarily, it relates to issues like the trans-border technical exchange and the privatization of technology as well.) How is the particular ideology embedded in the society through the placement of infrastructure? Infrastructure can be regarded as an attempt to develop the relation of production. At the same time, it is also limited by the condition of production. Infrastructure has deeply intervened in the making of the state in a dynamic way. With respect to the landing process, it is the field of power struggle, where the preset project might be contested, disassembled, and even reversed operation (Simone 2004).

As an amalgam of technical, administrative, and financial techniques, the operation of infrastructure indicates the system building, as well as associations between heterogeneous networks. Bringing the ontological perspective in (Larkin 2013), infrastructure is sometimes driven by state power in an emotional way, without rational calculation.

The practice of socialism in the twentieth century clearly represents the consequences of emotional state power. The characters of socialist governance, including centralization of power, decision making by the elite minority, party-state institution, unified ideological education, state ownership, and inadequate market economy, enable the socialist regime to actively mobilize all resources to regulate the process of national development. Based on a linear time perception and deep belief in causality towards the future of a communist society, the socialist regime manages production under plans, giving advance indicators and promises of development achievement. An inevitable problem in such a model is the practical simplification of the dialectical interaction between the economic base and the superstructure.



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Five-year Plan in China: lessons learned from infrastructure

The Chinese Communist Party's Five-year Plan is a classic example of how the state is using infrastructure to achieve its goals (but usually fails). Taking five years as a stage, the party sets targets for all areas of national economic and social development and arranges production and distribution throughout the country in accordance with the overall plan. Governmental reports of the Five-year Plan show the state's imagination of the Socialist industrial system and modernization project in different periods. In most years, the gap between the plan and its realization turns out large. When the plan fails, it costs a lot.

Right after it took over power, the Communist Party launched the Socialist Transformation in China in the early 1950s, including the agricultural cooperation movement, the land reform, and the transfer from private ownership to the national or public ownership in commercial sectors. The "success ahead of schedule" of the Socialist Transformation made the party central committee overly optimistic and initiated the Great Leap Forward Movement in 1958, which severely damaged the newly recovering national economy. The idealistic view of the Great Leap Forward is reflected in the unrealistically high targets set in the second Five-year Plan. For example, as in the Plan, the total output value of industry and agriculture should increase by 75% from 1957 to 1962, and the industrial output should double. In fact, by 1962, none of the planned targets of the second Five-year Plan had been completed, with an average completion rate of only 21% (Yan and Hu 2012). The Great Steel-making Policy in the Great Leap Forward Movement, with its original aim of supporting

the construction of infrastructure and heavy industry, but caused a large-scale stagnation of production. The policy even encouraged people to smelt their pans and pots into raw iron and contribute the raw material to industrial production. The idea was obviously blind, irrational and it heavily impacted people's daily lives. Millions of people starved to death during 1960-1963. The country had to adjust the national economy for three years after the end of the second Five-year Plan.

At the beginning of the third Five-year Plan (1966-1970), China decided to build up a defense-centered infrastructure system due to the possibility of war with both the Soviet Union and the United States. The system is named the Three Line Project, dividing the whole country into three parts. The First Line refers to the eastern coastal areas, which is also the front line if war broke out. Other areas in the eastern China, apart from the front line areas, are designated as the Second Line, while the western part of China is named the Third Line. The project aims to move vital industries from the east to the west, thus the undeveloped western China can be modernized and equipped with basic infrastructures to reserve national power in case of being attacked by the Soviet Russia from north-east or the US forces from south-east.

Millions of workers, party cadres, intellectuals and soldiers migrated to the Third Line areas from all over the country. In addition to the forced migration of the population, the project moved a large number of factories and industries to the inland area under the principle of war preparation. That means, the location of those important industries should be decentralized, secret, and close to mountain areas, so that factories are able to survive and continue operation under attack. However, the displacement of industries caused great inconvenience to production and transportation.

During this period, the defense-centered infrastructure focused on the development of the west. After one decade, when China finally decided to carry out the market economy, the trade advantages of the coastal areas (the front line areas) have been re-highlighted, accordingly the center of infrastructure plans changed. Thus, the economic gap between the former Third line areas and the coastal areas has widened again. Lack of resources, investments and developing opportunities, factory workers and residents in the Third Line regions suffered from relative poverty in the so-called "China's rise era".

Since 1953, China has undergone thirteen Five-year Plans. Until the fifth Five-year Plan accomplished by 1975, China roughly established an independent and integrated industrial system. In the nearly three decades of socialism, the preconceived national plan was always subject to unpredictable changes, including uncontrollable political movements initiated by the ruling party itself (for example, the 1958-1960 Great Leap Forward Movement, or the 1966-1976 Cultural Revolution), the reversal of international alliances and antagonisms, and so on. Finally, the country encountered severe difficulties by the end of the Cultural Revolution. Therefore, the Communist Party carried out an top-bottom institutional reform in 1978, which is called the Reform and Open policy.

In the economic transition, the party central committee did not give up the national plan, which developed into a mode of market economy highly regulated by the state. Infrastructure in the transitional period often faces the collision of heterogeneous systems, including the conflict between state-owned capital and collective or private capital, as well as the competition and coalition between different segments of the state. Local states and the private capital tried to occupy profitable industries as far as they could, resulting in the problems of land grabbing and over-exploitation in

urbanization. The central government faced pressure from an overheating economy and rapid inflation, almost affecting its political stability.

In 1982, Chinese President Zhao Ziyang gave a talk at the National People's Congress on the sixth Five-year Plan, mentioning that "thirty years of experience in the economic construction in our country repeatedly proved that the scale of infrastructure investment must be adapted with the national economic capability. This is the basic principle for the stability of national economy. Since the founding of our country, we have experienced several difficult periods. Except for political reasons, the blind expansion of investment on infrastructures should not be overlooked." The over-investment on infrastructure caused heavy financial burden and forced the state to strictly limit the scale of investment in the sixth Five-year Plan (1981-1985). The tension between the desire for local development and the requirement of political stability of the state has existed till now.

Despite the lessons learned, in contemporary times, China has maintained its tradition of making periodic plans. Currently, the party central committee is preparing for the fourteenth Five-year Plan (2021-2025). China has also applied its domestic infrastructure development experience to the investment abroad under the Belt and Road Initiative, deeply participating in infrastructure projects in Southeast Asia and the African continent, like the construction of high-speed railways, or the rental of ports. The "Chinese dream" of development has a persistent pursuit of infrastructure with no end in sight.

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