

The Innovative Development of Digital Public Capital under the Conditions of Socialism with Chinese Characteristics

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Abstract: Operating through digital platforms, the digital economy has flourished, becoming the core driver and new motive force of economic growth and demonstrating its advantages in terms of scale, effectiveness, and penetration. Nevertheless, the digital economy, as an important element in the socialist market economy with Chinese characteristics, remains dominated by private capital, and this has caused many problems. The government of China proposes not only to prevent the disorderly expansion of capital, but also to use the role of capital as an important factor of production in the market economy and a means of subjecting capital to a system of “traffic lights.” In this context, the article starts out from the theoretical logic of the dual nature of capital and of the “tension” created by the inherent contradictions of digital capital and the practical logic of the “gravitational force” exerted by the mega-size of the socialist market economy with Chinese characteristics. The article then expounds on the historical inevitability of the emergence of digital public capital, and systematically sets out the compositional map of the pluralistic digital capital system dominated by digital public capital and developed together with digital non-public capital. Finally, and on this basis, it draws conclusions and makes policy recommendations.

Key words: capital duality; contradictory tension of digital capital; mega-sized markets

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Within the broader mechanisms of the Chinese economy, the digital economy possesses great competitive advantages, development potential, and influence as a result of its rapid expansion, overall scale, increasing efficiency, and penetration. Thriving on digital platforms, it is becoming the new central driving force of economic growth. According to calculations by the China Academy of Information and Communications Technology (2023), the value of China's digital economy reached 50.02 trillion yuan in 2021 and amounted to 41.5% of GDP, of which digital industrialization accounted for 18.3%. China's digital economy ranks second in size globally, and has the highest growth rate in the world (China Academy of Information and Communications Technology 2021). On this basis, it can be expected that by the end of 2023 China's digital economy will account for nearly 50% of GDP. As of the end of 2022 the number of internet users in China had reached 1.067 billion, and the rate of internet penetration stood at 75.6% (China Internet Network Information Center 2023). According to the "Internet Trends 2019" released by Morgan Stanley Technology analyst Mary Meeker (2019), Chinese internet users make up more than 20% of the world total. Official national data cited in the "14th Five Year Plan for the Development of the Digital Economy" issued by the State Council in 2020 show that the added value contributed by the core industries of China's digital economy made up 7.8% of GDP. It is expected that by 2025 this figure will reach 10% of GDP (The State Council of the People's Republic of China 2022), meaning that the core industries of the digital economy alone will constitute a market of over 10 trillion yuan.

Along with a large number of internet users, China's digital economy is huge in scale and has a rapid growth rate, making it a typical "super-large market" that undoubtedly has a strong attraction for capital. In the core industries of the digital economy, in fact, various innovative business models are constantly being applied. The result is that large amounts of venture capital investment have been drawn in, and that platform business models have become highly capitalized (Langley and Leyshon 2016). The integration of venture capital with platform business models has seen the rise of platform capital, also known as digital capital, within which private capital is dominant. Throughout the internet industry chain, from the clothing, food, housing, and transportation of netizens to business transactions, applications at all levels are led and completed by digital private capital (hereafter referred to as digital non-public capital). With the help of digital technology and platforms, private capital is becoming embedded in every corner of the digital economy. Through various methods such as traffic ownership and subsidized prices, large digital platforms are increasingly showing a monopolistic expansion trend. During this expansion process capital is encountering—and often, causing—a range of problems such as issues concerning monopoly and the protection of personal privacy.

The digital economy is an important component of the socialist market economy with Chinese characteristics. Not only the digital economy is growing incrementally in its original form, but the digital technology is also constantly transforming, upgrading, and digitizing traditional industries. The core industries of the digital economy, where the “incremental” development of the digital economy is occurring, are also the “open ocean” on which capital movement takes place. Except for the network infrastructure and information and communications infrastructure in which public capital is invested, public capital in the digital field is almost invisible. The disorderly nature of private capital expansion, meanwhile, has drawn national attention. From late in 2020 and through the first half of 2021, instructions, documents, and regulations aimed at strengthening antitrust provisions and preventing the disorderly expansion of capital were successively introduced, as President Xi Jinping stressed:

We must deepen our understanding of different types of capital and their roles, regulate them and guide their sound development, give full play to the positive role of capital as an important factor of production . . . [W]e should intensify the research on capital theories in the new era. How to regulate and guide the healthy development of capital under the socialist system is an important theoretical and practical issue that Marxist political economists must study and solve in the new era. (*Xinhua* 2022)

Based on the above economic and policy context, and considering the current development status and many problems of the core industries of the digital economy—industries that are now largely the domain of private capital—this article focuses on digital public capital. It sets out to explore the prospects for a digital capital system led by public capital, and developed jointly with digital non-public capital.

1. Literature Review and Definition of Digital Public Capital

1.1. Literature Review and Question-Raising

The academic community has conducted relatively intensive research on the categories of digital capital and public capital. The research on public capital may be seen, more or less, as having passed through four stages of development, with the most concentrated investigations occurring in the period after the report of the 15th National Congress of the Communist Party of China proposed that “public capital” should be a priority research focus. Since that point, the study of public capital has gradually expanded (for a detailed analysis, please see Zhao and Yang 2023, 101–109). The academic community has examined digital platform capital or digital capital from two main perspectives, those of political

economy and of social capital research (Zhao and Wang 2023). Scholars such as Jiang Lan (2018) who adopt the first of these perspectives propose that digital platform capital is a new form of capital, while others who hold different views maintain that the concept of digital capital does not conform to the terminological norms of political economy (Yu 2021). Among the latter, Ragnedda (2018) believes that digital capital represents the accumulation of digital capabilities and technologies, and has developed a digital capital index. Scholars have also advanced a range of opinions on the issue of digital platforms and digital public capital, with research on the ownership attributes of digital platform capital receiving particular attention from an early stage. For example, Andrejevic (2011) noted that due to certain characteristics of digital platform operation, members of the vast digital community were calling for the formation of digital public platforms based on their own interests. James Boyle (2003) proposed a “second enclosure movement,” to provide legal protection for “digital barbed wire.” Baldwin and Woodard (2009) explored the shared nature of platforms from an engineering perspective, providing an endogenous foundation for the transformation of platforms from private to public. Casilli and Posada (2019) argued that the private and capital-driven models of platforms are not the only ones that exist. Scholz (2016) pointed out that people who uphold the “digital commons” can rebuild a sense of belonging and participation that goes beyond the business logic of capitalist platforms. Various organizations, on the basis of the collective ownership and governance of digital infrastructure, have constructed “cooperative platforms” based on mutual cooperation. Xiaodong Hou and Enfu Cheng (2021) have proposed that the fundamental solutions to monopolism in the field of the platform economy lie in the nationalization of platform enterprises and the universal sharing of platform wealth.

From existing academic studies, it has emerged that a basic consensus exists in the area of research on public capital, but that research on digital capital needs to be further deepened, expanded, and clarified. In particular, a search for references to digital public capital turns up relatively few materials, and to study related issues, scholars are mostly accustomed to using the concept of digital public platforms. Existing research has addressed the following issues in explaining the practical development of digital platforms in China:

First, although many scholars have examined the issues of public capital and digital platforms at the theoretical level, the digital economy still features prominent contradictions that have not yet been addressed through the mechanisms of policies and practice. The ownership structure with public ownership as the mainstay and multiple forms of ownership developing together is one of the basic economic systems of the socialist market economy with Chinese characteristics. The digital economy, and especially its core industries, makes up an important

component of the socialist market economy with Chinese characteristics, and needs also to adhere to the basic economic system under which public ownership is the mainstay and diverse forms of ownership develop together. Within the current market structure, however, the core industries of the digital economy are dominated by private capital. This situation does not match with the development scale of digital economy, the development trend of core industry of digital economy, and the scale of internet users in China. It contradicts the underlying character of the country's economic system, which treats public ownership as its mainstay. Consequently, the following questions need to be considered: How to form a capital structure that matches the basic socialist economic system in the core areas of the digital economy and in the areas that will continue to be digitized and upgraded in the future? In the area of the development of digital platforms, which occupy a dominant position in the digital economy, what is the future direction of digital platforms related to the public interest? What is digital public capital? How does digital public capital come into being? How does digital public capital work?

Second, whether inside or outside China, digital platforms are basically run under the control of private capital, and digital platform capital or digital capital occupies a dominant position. In this case, how can private capital be made compatible with or integrated with the public attributes of the platform for development purposes? How can the concept of digital public platforms be used for studying the formation of non-profit platforms? In practice, a considerable number of digital platform enterprises are coming more and more to possess the characteristics of public platforms; even though they are held by private capital, their public nature is increasingly prominent. At the same time, the situation that private digital platform capital operates a digital platform with public nature under the profit goal inevitably leads to the erosion of public interests. How to solve this problem?

Basing itself on the above two considerations, this article takes the digital economy as its research framework and digital public capital as its research object. From the point of view of the historical evolution of capital, this article explores the evolution logic from "commercial capital" to "industrial capital" to "digital capital" and from "public capital" to "digital public capital" from the historical evolution of capital. It analyzes the theoretical and practical basis for the formation of digital public capital, elaborates multiple digital capital systems under which the digital public capital is the mainstay and diversified digital capital develop together, a scheme that is able simultaneously to ensure the common development of digital non-public capital, and comes to conclusions and policy recommendations on the above analysis.

1.2. The Definition and Essence of Digital Public Capital

From the perspective of industry, digital public capital is a type of capital that operates in digital form, while in terms of its ownership attributes, it belongs to

public capital. Digital public capital is thus a form of digital capital with a public nature, and in its essence, remains a special form of capital. It is a new form of capital, arising when digital capital is combined with the practice of the socialist market economy with Chinese characteristics and the economic system with Chinese characteristics in the digital economy era. It is itself a sublation of traditional capital and digital capital.

The digital economy has two elements: digital industrialization in a narrow sense and industrial digitization in a broad sense. Correspondingly, digital public capital also has narrow and broad meanings. In a narrow sense, digital public capital refers to the digital public capital invested in the emerging digital economy field, that is, to the public capital involved in digital industrialization. In a broad sense, digital public capital includes not only this narrow part, but also the digital transformation of traditional public capital, that is, of the public capital in the field of industrial digitization within the digital economy. The digital transformation of traditional public capital has become a trend that embodies the transformation and upgrading of traditional industries through digital technology. It continues to reflect the dominant position of public capital in the traditional economy, as shown in Figure 1.

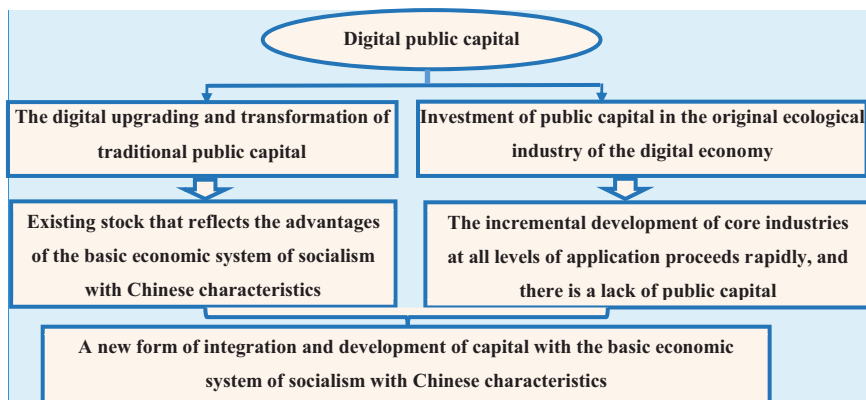


Figure 1. Composition and Essence of Digital Public Capital

The field of digital industrialization belongs to the original form of the digital economy, and the dominant role of the public economy and public capital is not reflected in it. This is true especially in the rapidly expanding internet and related service industries, which basically represent a space into which private capital is able to freely expand. Currently, the original ecology and the core industries of the digital economy include industries of four types: computer, communications, and other

electronic equipment manufacturing; software and information technology services; internet and related services; and the information and communications industry.¹ It is obvious that within these four major industries, public capital exists in network infrastructure and information communications networks, while other industries based on network infrastructure and information communications networks make up competitive industrial sectors that are mostly dominated by private digital capital.

The sublation of digital public capital over traditional and digital capital consists of the fact that digital public capital has more of the typical characteristics of social capital rather than of private capital. The platform on which digital public capital relies incorporates larger networks into its operational scope, highlighting its public nature. The operation of digital public capital based on public platforms is a form of integrated development that combines capital and the socialist economy with Chinese characteristics, and is thus a form able to reflect and practice the development concept of putting the people at the center. Digital public capital, like public capital, is different from private capital. Private capital is oriented toward the interests of capitalists, while digital public capital and public capital are oriented toward the interests of the majority of the public or of public resource owners, targeting all participants in the digital economy. Digital public capital reflects the relationship between the vast number of netizens and digital workers on public platforms who jointly employ digital means of production, without any exploitation.

2. Exploring the Historical Origin of Digital Public Capital: Responding to the Historical Inevitability of Its Generation

2.1. The Life History of Capital and Its Evolution

Digital public capital is not created out of thin air, but is nurtured by the modern life history and historical evolution of capital. The historical evolution of capital is shown in Figure 2, from which we can glimpse the historical logic behind the emergence of digital public capital. Marx maintained that scientific political economy needs to study the life history of capital, and if we are to grasp the generality and particularity of capital in practice, we need to explore its characteristics and laws of evolution on a theoretical level through the study of its life history. In this way, we can resolve the question of the coexistence and compatibility of capitalist and socialist production methods, as well as the logic of the existence of from “public capital” to “digital public capital.”

The study of the life history of capital requires a longitudinal review of its process of evolution from a historical perspective. Capital began to sprout with the emergence of the wage-working class in the second half of the 14th century. Capital originated in circulation, in the form of money. “As a matter of history, capital, as opposed to landed property, invariably takes the form at first of money;

it appears as moneyed wealth, as the capital of the merchant and of the usurer” (Marx 2004, 171–172).² Before capital formally entered the stage of history, it went through a gestation period of two centuries. “The circulation of commodities is the starting-point of capital. The production of commodities, their circulation, and that more developed form of their circulation called commerce, these form the historical ground-work from which it rises” (171). The emergence of developed commodity circulation benefited from the Renaissance and religious reforms in Western European society in the 15th and 16th centuries. These processes led to significant social, economic, and intellectual changes, and further expedited the rise of capital.

If we say that the Renaissance that occurred along the Mediterranean coast in the 15th century was essentially a revolution that saw “gods” being challenged by “humans,” its greatest effect was to bring about the discovery of a new continent by Columbus at the end of the 15th century, and thus to transform the course of world trade. In the 16th century the commercial revolution in the Netherlands witnessed the rise of a merchant class of unprecedented wealth, and commercial capital stepped onto the historical stage. Commercial capital met the monetary needs of feudal dynasties and funded foreign wars, while the mercantilist theory that focused on commercial capital became the dominant economic theory of the time.

With the political revolution in 17th century Britain the bourgeoisie, formed by the fusion of commercial capital with the ancient institution of usury capital, stepped onto the historical stage. Usury capital had now undergone extensive development to emerge as borrowing capital. Nevertheless, the bourgeoisie was not to occupy a dominant position until the 18th century, when the Industrial Revolution in Britain introduced science and technology directly into the production process, and the main battlefield in the emergence of capital shifted from the field of circulation to that of production. The rise of British industrial capitalism was of true revolutionary significance, signifying that the industrial bourgeoisie stood at the forefront of the epoch. For more than two centuries industrial capital held a dominant position, experiencing two technological revolutions as steam engines and then electricity were applied to industrial production, bringing unprecedented development.

By the 1970s and 1980s modern industrial capitalism faced unprecedented crises. Pursuing ever-greater quantities of surplus value,

Modern industry never looks upon and treats the existing form of a process as final. The technical basis of that industry is therefore revolutionary, while all earlier modes of production were essentially conservative. By means of machinery, chemical processes and other methods, it is continually causing changes not only in the technical basis of production, but also in the functions of the labourer, and in the social combinations of the labour-process. (Marx 2004, 559–560)³

Driven by the pursuit of surplus value, capital underwent a third technological revolution, which was called the computer and information technology revolution and characterized by atomic energy, electronic computers, biotechnology, and space technology. This revolution began in the middle of the 20th century and in the 1990s gave birth to a new economic form triggered by the information super-highway, which ushered in another golden period of capitalism after World War II. In the early 21st century, capital entered the stage of the digital technology revolution, and digital capital appeared on the scene. Digital platform enterprises characterized by resource integration and platform-based operation came to the forefront.⁴ In their totality, they are referred to as digital capitalism or platform capitalism (Srnicek 2018, 42–102).

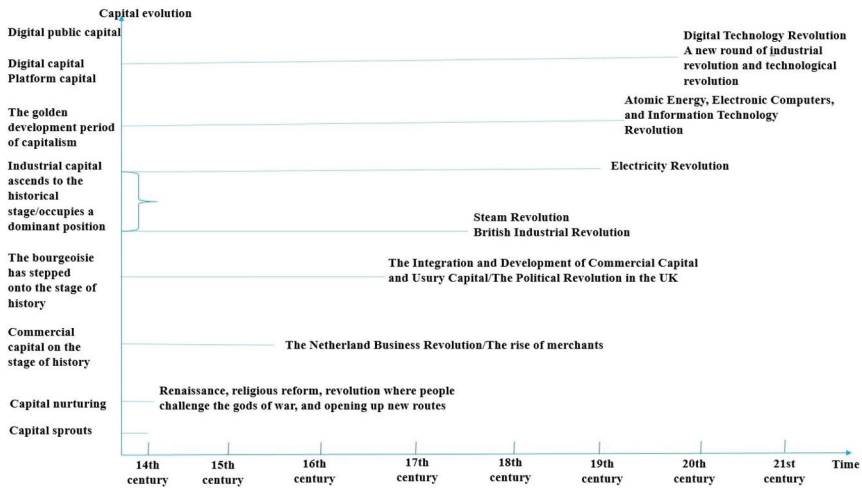


Figure 2. The Evolution of Capital

The rate of application of digital technology is accelerating, and within capitalism, the digital technology revolution continues to move forward. With the help of digital technology, capital has become a big winner in the new round of technological and industrial revolutions. Digital platforms are in the top rank of enterprises according to various economic indicators, fully demonstrating the competitive advantages these firms enjoy. Industrial capital has begun to give way to digital platform capital, a new form of capital in the digital economy era. The annual Internet Trends Report released by Mary Meeker (2019) reveals that since 2010 internet corporations have become the world leaders in market value. In 2017, the top five places for global market capitalization were held exclusively by

internet companies, with internet technology companies accounting for 40% of the top 20. Internet companies occupied seven places among the top ten firms with the highest market value in the world. In 2018, internet applications of various types expanded further, as measured by indices ranging from the number of global internet users to the penetration of digital media, mobile payments, e-commerce, healthcare, and other aspects of economic life. The platform corporations that provided these internet services were based primarily in the United States and China, with those two countries occupying the top 20 global market capitalization places among technology companies, in a ratio of 11:9. Among the top ten global corporations by market capitalization in 2019, seven were technology companies in the digital platform category. The top 30 global internet companies by market value included 18 in the United States and seven in China.⁵

2.2. The Law of Capital Evolution and the Historical Inevitability of the Generation of Digital Public Capital

First, every leap in the development of capital has been driven by the humanities, technology, and material production combining to achieve “self-revolution” and consequent breakthroughs. All the steps taken by capital, including the germination of capital, the generation of commercial capital, the emergence of the bourgeoisie through the integration of commercial capital and usury capital, the emergence and domination of industrial capital, and the emergence of digital capital, have also seen a breakthrough in the market, and have involved the continuous evolution of capital forms. Driven by the digital technology revolution and a new round of industrial revolution, not only has digital capital emerged, but it can also be expected to undergo an accelerated integration with other production methods, and further development. The integration and development of digital capital within the socialist market economy with Chinese characteristics will, as one of that economy’s essential processes, lead to the innovative development of digital public capital.

Second, the time interval between “updating iterations” of capital is shrinking. If we consider the time frame of the incubation of capital, it took commercial capital about 300 years to emerge, followed by a further 200 years before industrial capital became dominant, and then a period of some 50 years from the crisis of industrial capital to the emergence of information capitalism. Once information capitalism became established, however, the emergence of digital capitalism took only about 20 years. From this, it can be seen that as capital matures and enriches itself, technological revolution has meant that the time interval for the transformation of capital forms is constantly shrinking. This also means that within the framework of the socialist system with Chinese characteristics, the process of evolution from private digital capital to digital public capital is accelerating.

Third, the inherent logic of the evolution of capital—that is, the system’s profit-seeking nature—lies in obtaining more surplus value and excess surplus value. As the process of continuous innovation and breakthroughs moves ahead, capital constantly introduces new technologies, but its purpose is not to make the lives of workers easier. Marx (2004, 427) quoted Mueller as saying, “It is questionable if all the mechanical inventions yet made have lightened the day’s toil of any human being.” As Marx noted, such a reduction is not by any means the reason why capitalism employs machinery; instead, the role of technological progress and the use of machines under capitalism is not to shorten people’s labor time but to make them more hardworking.

[M]achinery is intended to cheapen commodities, and, by shortening that portion of the working-day, in which the labourer works for himself, to lengthen the other portion that he gives, without an equivalent, to the capitalist. In short, it is a means for producing surplus-value. (Marx 2004, 427)

The essence of capital, its perpetual law of motion, is to pursue more surplus value and excess surplus value. This property of capital is contrary to the essence of socialism with Chinese characteristics. For digital capital to be “for our own use,” it must be integrated into and developed within the socialist system, so as to generate a form of digital public capital that meets the needs of socialism with Chinese characteristics.

Fourth, capital as it furthers the division of labor and cooperation in the production of surplus value becomes an actual production condition and an important production factor. Nevertheless, it also has historical limitations.

By the co-operation of numerous wage-labourers, the sway of capital develops into a requisite for carrying on the labour-process itself, into a real requisite of production. That a capitalist should command on the field of production, is now as indispensable as that a general should command on the field of battle. (Marx 2004, 384)⁶

Historically, capital indeed played a positive, revolutionary role in developing the division of labor and cooperation. In the *Communist Manifesto*, Marx generously affirmed the contribution made by capital and its positive significance for social development;

The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of Nature’s forces to man, machinery, application of chemistry to industry and agriculture, steam navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalisation of rivers, whole populations conjured out of the ground—what earlier century had even a presentiment that such productive forces slumbered in the lap of social labour? (Marx and Engels [1848] 2010)

Capital since then has continued to break through the limitations of the market, through the first technological revolution, the second technological revolution, the third technological revolution (the information technology revolution), and the digital technology revolution. However, the historical limitations of capital are also evident. In pursuing more profits, capital has broken through the boundaries of nature, triggering an ecological crisis. Breaking through the boundaries of market laws and regulations, it has disrupted fair competition. Breaking through the bottom line of human ethics and morality, it has incorporated everything that can be bought and sold into the commodity market system. Breaking through the boundaries of family and society, it has caused huge numbers of women and children to enter sweatshops. Countless part-time workers have become the objects of control by platform capital, and capital has also broken through national boundaries as it seeks opportunities for profit growth. In the evolution of capital, the existence of numerous problems is precisely the driving force that compels the system to change and adapt, and that moves it in new directions.

Fifth, since its digital evolution, capital has been attracted by China's immense market. The exclusive targeting of profits in the capitalist fashion, however, is clearly contrary to the essence of the socialist system with Chinese characteristics. This means that under the constraints and guidance of China's socialist system, digital capital will inevitably evolve into digital public capital. The essence and operational goal of the socialist market economy with Chinese characteristics is to achieve common prosperity for the whole people. As an important component of the socialist market economy with Chinese characteristics, the digital economy, and especially its core industries, cannot aim solely at gaining private profits, but must define the boundaries of its behavior within the constraints of people-centered and common prosperity. In the process of integration and development of digital capital with the socialist market economy with Chinese characteristics, it also needs to undergo sublation and transformation, evolving from digital capital to digital public capital. On the basis of digital public capital, society will promote high-quality development of the digital economy, will create digital benefits for the vast numbers of netizens and digital workers, and will promote digital common prosperity.

3. The Dual Basis for Innovation in the Area of Digital Public Capital: Why Capital Must Be Used for Us All

3.1. The Theoretical Basis for the Innovative Development of Digital Public Capital

First, the dual nature of capital provides a theoretical basis for the birth of digital public capital. When we examine the origin and history of capital, we see that labor creates goods, that it creates currency, and that it also creates capital. In the

evolutionary logic of “commodity–currency–capital,” the duality of labor presupposes the duality of goods, the duality of money (ordinary commodity and the universal equivalent), and also the duality of capital—that is, the general and special nature of capital, and even the existence of individual capital at a certain point. The duality of capital is also reflected in the fact that on the one hand it is personified capital, representing the interests and requirements of capitalists and allowing the pursuit of value proliferation through those capitalists’ control. That is the social attribute of capital. On the other hand, capital as an important factor of production promotes continuous changes in production, and technological revolution. The latter, however, cannot be called a natural attribute of capital. In terms of the essence of capital, technological revolution reflects a social production relationship, and therefore, is directly reflected as a social attribute from its birth. In this sense, therefore, the duality of capital is not the unity of social and natural attributes. However, capital can be divided into general and special types under different institutional environments and conditions. Commercial capital, lending capital, ownership capital, industrial capital, and in the latter field, even fixed and working capital and constant and variable capital all exhibit the specific forms and characteristics of capital. The theoretical significance of proposing the dual nature of capital lies in the fact that like DNA, the duality of capital can be restructured; that is, the form and structure of capital can be altered. This makes it possible to solve the problem of how to integrate and unify capitalist and socialist production methods (Yang 2014). As Marx (2004, 8) said, although he studied the capitalist mode of production with England as a typical example, but these tendencies were “working with iron necessity toward inevitable results. The country that is more developed industrially only shows, to the less developed, the image of its own future.”⁷ The economist William Lazonick has questioned this. While believing that a great deal about the relationship between theory and history can be learned from Marx’s theoretical research, Lazonick does not include here the paragraph in which Marx states that the natural laws of capitalist production act with “iron necessity.” Lazonick argues that Marx’s analysis of the development of industrial capitalism in the 19th century has flaws, making it necessary to be cautious when using Marx’s theoretical exposition of British industry as a model to analyze the subsequent development of capitalist economy (Lazonick 2007, 76). He considers that Marx’s analysis of factory handicraft industry and machine industry is better suited to the 20th-century United States; Marx’s statement that by turning manual technology into outdated things, capitalist investment in technology tends to reduce workers to machine vassals is, according to Lazonick, still very relevant as a description of the American factory system of the 20th century (233). Obviously, the different views of Marx and Lazonick precisely validate the duality of capital, with the former indicating the generality of capital and the latter indicating its particularity.

The special nature of capital and the role of its production factors determine that capital can be utilized as a “special form of capital” by the socialist market economy with Chinese characteristics. For utilization under socialist conditions, however, capital needs to be restructured, in a fashion analogous to the recombination of DNA, so as to generate a special form or forms of capital that can meet the institutional requirements of socialism with Chinese characteristics. As an “open ocean” field of capital movement and a component of the socialist economy with Chinese characteristics, the digital economy also needs innovative forms of capital, led by a new form of capital called “digital public capital,” and requires digital public capital to play a leading role in the development of the digital economy. The development and historical accumulation of socialist public capital provides a historical prerequisite for the emergence and development of digital public capital. Not only is the rise of digital public capital an innovative development of public capital, but it also represents a new, expanded manifestation of public capital in the digital economy.

Within the socialist market economy with Chinese characteristics, the market still operates as the bearer and capital as the main body. In the ownership structure in which public capital economy is the main body and non-public economy develops together, there must be a capital pattern in which public capital is the main body and non-public capital develops together. Correspondingly, capital entities in the digital economy should reflect “Chinese characteristics and institutional advantages.” The construction of a digital capital system in which digital public capital forms the main body, and digital non-public capital shares in the common development, constitutes the theoretical basis for the duality of capital and provides support to China’s basic economic system.

Second, the tension of the internal contradiction of digital capital provides the internal impetus for the innovative development of digital public capital.

Digital platform capital has become the leading form of current capital. Digital platform enterprises are not only the result of the application of digital technology and internet technology, but also a new variety of production organization formed by the digitization of economic relations, and a product of the division of labor and of the interaction of social and economic activities, as well as of a transformation of the labor process. The high profitability of digital platform capital indicates once again that the profit-seeking nature of capital has not changed. In line with the law of capital movement, capital with the help of new technologies will continuously break through market boundaries and obstacles to achieve new and greater proliferation. But beneath this law of the operations of capital, a pair of contradictions lie hidden, which give rise to the “tension” of digital capital, and promote the transformation of digital capital into public capital.

Through digital platforms, digital capital constantly incorporates more netizens and digital workers into its production and operation activities, and the platforms

increasingly become public platforms. This development trend indicates that the emergence of digital public platforms has an endogenous mass and technological foundation. At the same time, and as research data indicate, the capital of digital platforms is becoming increasingly concentrated and monopolized. According to the report “Study on the Development Trend of China’s Top 100 Internet Enterprises in 2021” (National Industrial Information Security Development Research Center 2022), the five top-tier super-platform enterprises in China accounted that year for 51.7% of the total market value of the top 100 enterprises. The total revenue of the top 100 internet businesses was as high as 4.1 trillion yuan, equivalent to the total annual GDP of multiple Chinese provinces. Meanwhile, the privatization of digital platform capital is accelerating. The nature of public platforms within the category of digital platforms is in inherent contradiction with the private characteristics of capital.

This contradiction is manifested as follows: on the one hand, the large-scale socialized development of digital labor creates a network of collective productivity and general intelligence, highlighting the public nature of its goods and forming a “digital commons.” On the other hand, private platform capital exercises unilateral dominance and control, plundering this digital commons. The contradiction between socialization and privatization is formed bilaterally. Under this contradictory movement of opposites, various relationships on digital platforms will begin to diverge and be transformed, and platforms controlled by private capital will experience inherent pressures to transform themselves into public platforms dominated by public capital. Digital workers have generated a strong demand for digital public platforms to safeguard their digital rights. In this way, the platform supply led by public capital will be aligned with the demand for digital labor, forming a collaborative public platform. Digital public capital, using digital public platforms as carriers, can develop digital public utilities and digital public infrastructure, and can secure the digital rights of the majority of the population.

3.2. The Practical Basis for the Innovative Development of Digital Public Capital

First, the “gravitational attraction” exerted by the vast socialist market economy with Chinese characteristics provides a practical basis for the innovative development of digital public capital. As mentioned earlier, Chinese internet users account for 20% of internet users around the world, and the scale of China’s digital economy is close to 40% of GDP. Serving a network population of over 1 billion people, the country’s digital economy and core industries benefit from possessing a huge market (National Industrial Information Security Development Research Center 2022). The scale of this digital economy provides a foundation for the further development of digital capital, and also exercises a strong “socialist

attraction” on it. Attracting digital capital to become integrated into the development of the socialist market economy with Chinese characteristics will result in the generation of a new form of capital, namely digital public capital. The only way this integration can take place is that digital capital continuously develops within the constraints of the socialist system with Chinese characteristics. As the latest form of capital to emerge, digital capital is thus destined historically to develop from the existing private-led digital capital to digital public capital under the system of socialism with Chinese characteristics. The future direction of movement of capital is thus toward digital public capital, as the socialist market economy with Chinese characteristics exerts its attraction.

Second, the innovative development of a multi-digital capital system led by digital public capital is related to the healthy development of the digital economy and the overall development of the country, and is a strategic measure to strengthen, improve and expand the digital economy. The digital economy is an important part of the socialist market economy with Chinese characteristics, and its scale is growing. As a new economic form, in its economic composition, it is inevitable to adhere to the basic economic system with public ownership as the main body and multiple ownership economies developing together. This system is reflected in the capital structure, that is, the digital capital pattern with digital public capital as the mainstay and digital non-public capital developing together. In the current pattern the growth of digital public capital is only incremental, while digital non-public capital makes up almost the entire stock, and its share is also constantly expanding. This structure of capital is quite out of proportion to the scale of the digital economy and of the internet, and does not accord with the socialist system with Chinese characteristics. The development of a digital economy led by public capital is thus in line with the law of development of the digital economy within the general economy of China’s socialist society. Exploring the construction of a digital capital system with digital public capital as the mainstay and digital non-public capital developing together is not only a top-level design in the system, but also conforms to the requirements of the development law of the digital economy, and is also an institutional innovation to promote the high-quality development of the digital economy and the orderly and healthy development of capital.

Third, developing a diversified digital capital system led by digital public capital represents an inescapable trend and requirement for domestic and international economic development. In China, the development of digital public capital-led digital economy is to take people’s interests as the center, and effectively promote digital common prosperity through high-quality development of digital economy. From an international perspective, we should aim to construct a “five forces model” of digital public capital that integrates the forces of national defense, government, markets, enterprises, and scientific research. This in turn will make it

possible to construct an infrastructure of public data ownership and a digital public chain; to build a “5+1” public digital capital system; and to continue to develop a “three in one” digital non-public capital system based on other forms of ownership. At the same time, we need to continuously enhance the advantages, attractions, and comprehensive competitiveness of the socialist system with Chinese characteristics. The “five forces model” of digital public capital and the “5+1+3” digital capital system led by digital public capital display the characteristics and demonstrate the advantages of China’s digital economy, providing a Chinese solution for the digital economy development that is unfolding on a world scale.

Fourth, we need to develop a diversified, innovative digital capital system, led by digital public capital, that can avoid the various drawbacks of employing capital and can fully leverage the role of capital as an important factor of production. The nature of capital lies in its search for profit, and the drawbacks that accompany capital in the course of its operation are obvious. They were especially evident during capital’s initial stage, that of its primitive accumulation. The first capital hoards were amassed through violence and coercion, through the enclosure of common lands, slave trading, oppressive legislation, and other means. Setting out the bloody history of capital, Marx (2004, 459) showed that “capital comes dripping from head to foot, from every pore, with blood and dirt.”⁸ In the framework of the socialist market economy with Chinese characteristics, digital public capital has the potential not only to suppress the inherent drawbacks of capital itself, but also to play a leading and guiding role in the operations of digital non-public capital.

4. The Construction of a System for the Innovative Development of Digital Public Capital: How Capital Can Work for Us

4.1. The Theoretical Basis for Creating a System of Digital Capital

The premise for constructing a system of digital public capital is the penetration of digital technology throughout society. Digital capital will continue to penetrate fields such as the economy, finance, technology, and culture. It should not only encourage the development of private, non-public capital, but also needs to operate businesses in the form of digital public capital, businesses that serve the interests of the vast majority of the people by enhancing national economic security, national defense, technological progress, and so forth.

This article will not elaborate on the composition of digital public capital, which is based on the classification standards of the four core industries of the digital economy and the five major categories of the digital economy. Instead, it will consider the construction of digital public capital from the perspective of the development of the original form of the digital economy, and from that of the digital

transformation and upgrading by the digital economy of traditional industries as a whole. The digital economy represents a strategic high ground on which countries around the world compete in their development, and thus embodies a country's competitiveness and comprehensive national strength. Public capital in the digital economy needs to be distributed among areas that reflect the country's overall competitiveness. This article proposes a "five forces model," and an infrastructure that integrates the forces of national defense, government, market, enterprise, and scientific research. The public operation of data elements and the digital public chain serve as the infrastructure to construct the "5+1" digital public capital system, as shown in Figure 3.

4.2. The "Five Forces Model" System of Digital Public Capital

The "five forces model" of the "5+1" system of digital public capital incorporates the foundations, the center, and the nerve ends of the entire economy. This is the "soul" of digital public capital, covering various levels of politics, culture, the economy, and the military. The "five forces model" includes digital government (the brain), digital finance (the blood), cultural public capital (ideas and neurons), military public capital (the bones and inner core), and technological and industrial public capital (the heart and power source).

"Digital government" is based on the open sharing of public service data, and on their transformation from "resources" into "capital." Public data also make up the largest proportion of all data in the digital economy. The operations that serve to "capitalize" public data clearly need to be centered on the interests of the people, through achieving the preservation of public data and increasing their availability. The dominance of public capital in "digital finance" provides important support to the healthy and orderly development of the digital economy, while in the area of culture, digital public capital provides an important ideological guide, making its public operation imperative. The key foundation for digital public capital and for autonomous control of the digital economy is military digital public capital, which provides the underlying logic of the digital capital system and acts as a solid guarantee for it. The core driving force of the digital economy is the digitization and public operation of technology and industrial capital. Without high-tech, it is impossible to enhance the competitiveness of the industrial chain, and without technological innovation, competitiveness cannot be sustainable. Within the digital economy, digital industry and industrial digitization are key elements. The digital transformation of public capital in the real economy has become the foundation for developing the operation of digital capital. In areas related to political security, economic security, ideological and ideological security, technological security, and financial and industrial security, socialist public capital has been established and expanded.

4.3. The Basic Construction of Digital Public Capital: Public Operation of Data Elements and the Digital Public Chain

“One infrastructure” refers to the general operational basis of the “five forces model,” which is a blockchain facility based on data and public chains. It can be summarized as the infrastructure of public operation of data elements and digital public chains. Although the five pillars of digital public capital differ in form, they all share a common characteristic in the digitization of information under digital operation, which forms the data foundation of the digital public capital system. Data make up the core feature of the digital economy era. Data elements were officially included among the production factors discussed at the Sixth Plenary Session of the 19th Central Committee. As a new type of production factor different from traditional factors such as capital, land, and labor, the public ownership of data provides the foundation for public ownership of the two main components of the digital economy: industry digitization and digital industrialization. Therefore, the privatization of data elements and the investment of digital public capital in the digital public chain constitute the foundation for the operation of digital public capital, and can also ensure the inclusive nature of the public chain and the unity of digital public capital.

4.4. Innovative Development of Digital Public Capital Does Not Hinder the Continued Development of Existing Digital Non-Public Capital

At present, digital non-public capital makes up the bulk of digital capital, and includes individual capital, private capital, and foreign capital. These three types form a “trinity” system of digital non-public capital. All digital non-public capital belongs to “private capital” as distinct from public capital. Digital non-public capital operates in a platform-based manner, mainly in various fields of the internet industry, but has exercised significant leadership and has made an important impact on the real economy. A large amount of private capital has accumulated in the fields of application of internet technology, commerce, and marketing, and this capital has contributed to a fierce competitive situation at various levels of the digital economy.

Digital non-public capital has led to the development of the digital economy. From the perspective of the origin and rise of the digital economy, capital of this type has played an important role among the factors of production. Digital non-public capital not only comprises almost all of the capital stock employed in the development of the digital economy, but is also growing rapidly. Given the chaotic development of digital non-public capital in platform competition, however, this capital still requires guidance from digital public capital, as well as regulation and the imposing of norms by relevant government departments. With further public investment in the field, digital public capital will continue its incremental expansion.

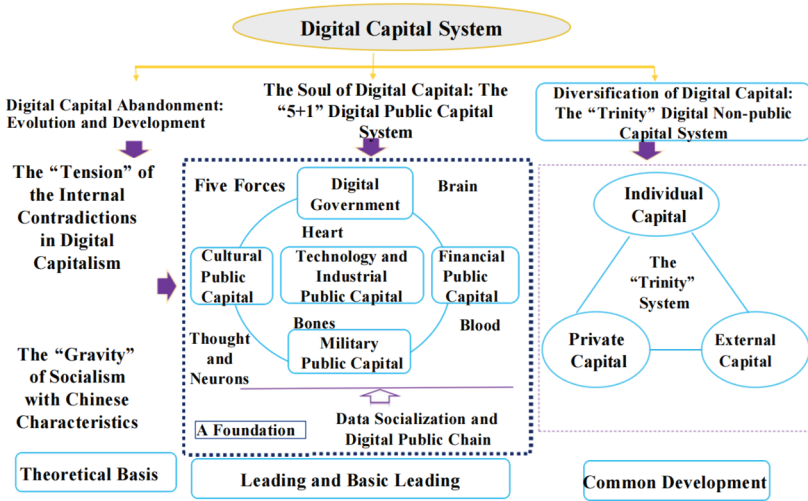


Figure 3. Digital Capital System Map of Digital Public Capital Dominating and Digital Non-Public Capital Developing Together

5. Research Conclusions and Policy Recommendations

5.1. Research Conclusion

Now that capital has evolved to the point where digital capital has appeared, the inherent tensions and contradictions of digital capital, together with the immense “gravitational attraction” exerted by the socialist market economy with Chinese characteristics, will promote the further evolution of digital capital into digital public capital. The theory of the duality of capital and the development of the digital economy provides the theoretical and practical basis for this shift.

By establishing and developing digital public capital, we can guide the direction of digital non-public capital and encourage it to engage in orderly competition. Meanwhile, as the development of digital public capital goes forward, it can exert its economic and social functions, fundamentally suppressing the negative effects of capital and playing a positive role.

Constructing digital public capital requires comprehensive coverage, including the building of a “5+1” system that encompasses the fields of politics, the economy, culture, technology, finance, and the military. In each of these fields, we must not only pursue the digital transformation of existing public capital, but also explore the development space of the digital economy. Creating the national system for

combating the COVID-19 epidemic was possible because of the institutional advantages of Chinese society, and more precisely, the institutional advantages of the ownership structure dominated by the public economy. The extensive participation by the military, public hospitals, and large state-owned enterprises, which together were able to mobilize vast quantities of labor power, material resources, and finances in a short period of time, reflects the advantages enjoyed by China as a country in which the system of public ownership is dominant. The development of the digital economy, as an emerging economic form and a new driving force for economic progress, also needs to reflect the advantages of the basic economic system. It is necessary to build a digital capital system that is led by digital public capital, and in whose development digital non-public capital is an active participant. See Figure 3.

5.2. Policy Recommendations

Creating an optimal digital capital system requires top-level design and promotion. The evolution of capital forms embodies the historical inevitability that digital public capital will emerge, but this does not mean that digital capital will develop automatically into digital public capital. Such an outcome requires that the state and its relevant departments guide the formation and development of digital public capital through top-level design. For example, the many problems caused by the academic platform CNKI have prompted people to demand the services of its public platform, and the extensive resources related to economic security and other aspects of information should also be controlled by the state.

Further, this design and promotion needs to cover the field fully, and to allow the new forms to “flower on the spot.” In line with the law that governs the accelerated evolution of capital forms, the state and relevant departments have taken the opportunity to set out the evolution of digital public capital comprehensively, on the basis of five aspects. In the actual process of operations, however, this “flowering” has to occur at particular points, with the digital transformation of existing public capital in politics, the economy, industry and technology, culture and ideology, the military, and a number of other fields. Moreover, the development and operation of digital public capital needs to enhance national competitiveness. The textbook instances of bribery and various other dramas in the Chinese province of Liaoning have been the result of the comprehensive erosion of non-public capital. This situation requires not only government supervision, but also the development of digital public capital so as to ensure that the digital economy has a public-centered character. High-quality development of the digital economy must be promoted in politics, the economy, finance, technology, culture, the military and other fields, in order to benefit the general public.

Efforts need to be made in key areas. Starting with publicly owned network infrastructure and information communication networks, we should promote digital

public capital in the continuously expanding internet industry chain. Within the digital economy, this industrial core is precisely the field that needs to reflect the institutional advantages of having the public ownership economy as the dominant force, developing in concert with other ownership forms. The speed of development of the industrial core of the digital economy is increasing day by day, and its influence and penetration are also constantly expanding and growing stronger. Moreover, the applications of this industrial core intersect directly, at all levels, with the interests and needs of the vast number of netizens. Some of these interests and needs even involve issues such as economic security, data security, and energy security. In areas related to the interests of the general public, national data security, financial security, economic security, and technology industry security, it is necessary for digital public capital to increase its hold. This will not only have quantitative advantages, but will also improve quality, while providing strong guidance for the formation of digital non-public capital and promoting its orderly and healthy development.

A further need is to explore the operational mode of digital public capital. The considerations that apply here include whether economic activities are related to the national economy and people's livelihood; whether these activities serve the interests of a large majority of netizens; whether they involve data security and privacy, etc.; whether they require selectively securing a stake, through investment, acquisition or other means, in private platforms that have implications for the rights and interests of digital workers; whether they involve active intervention in fields related to the digital rights and interests of the whole people and of public utilities; and whether they promote the collective productivity of digital labor and the transformation of large-scale market advantages into national digital competitive advantages. In general, it is necessary to further explore the mode of operation of digital public capital, as well as the paths and methods through which public platforms can serve the digital public.

In short, the problem of compatibility between capital and socialist production methods needs to be solved on the basis of the dual nature of the capital that is invested. The existence of public capital provides an answer here. Similarly, the duality of capital can also solve the problem of compatibility between digital capital and the socialist market economy with Chinese characteristics. Again, the emergence of digital public capital offers the best response to this problem. In creating a system of "traffic lights" for capital, it is necessary to distinguish between public and non-public capital, digital public capital and digital non-public capital, and in particular, to set up a "red light" for non-public capital that expands and competes in a disorderly fashion, so as to guide and regulate its development. The expansion of public capital and establishment of digital public capital should not just create a "green light," but should also provide encouragement for policies that promote the exploration of digital capital in order to serve and benefit the general public.

Notes

1. According to The National Bureau of Statistics of China (2021), the core industries of the digital economy include industries of four types: digital product manufacturing industries, digital product service industries, digital technology application industries, and digital factor-driven industries.
2. It should be pointed out that due to the relative nature of time, this article refers to the “modern” life history of capital in these terms.
3. See also <https://www.marxists.org/archive/marx/works/1867-c1/ch15.htm>.
4. In their early days, digital platform enterprises were more commonly referred to internet enterprises. Internet enterprises are enterprises that hold value-added telecommunications business licenses and that generate revenue mainly through the sale of internet services (Internet Society of China and Information Center of Ministry of Industry and Information Technology 2018).
5. See https://www.bondcap.com/report/pdf/Internet_Trends_2019.pdf, https://www.bondcap.com/report/pdf/Internet_Trends_2018.pdf, and https://www.bondcap.com/report/pdf/Internet_Trends_2017.pdf.
6. See also <https://www.marxists.org/archive/marx/works/1867-c1/ch13.htm>.
7. See also <https://www.marxists.org/archive/marx/works/1867-c1/p1.htm>.
8. See also <https://www.marxists.org/archive/marx/works/1867-c1/ch31.htm>.

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