The Collapse of Traditional Market Credit System and the Establishment of Digital Credit in China

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Abstract. Credit is a highly significant term in the field of economics, with some scholars even equating it directly with the economy. In traditional economic research, credit is both a key concept and a problematic issue because it is both important and risky, serving as an indispensable resource while also being challenging to obtain. Around the notion of credit, problems such as "market uncertainty," "asymmetric information," and "incomplete contracts" have long been unsolved puzzles. This paper intends to examine credit in traditional economic society and comprehensively expound on digital credit in China as it enters the era of digital economy. In the backdrop of China's digital economy, problems that once plagued markets and economists have been resolved one by one through digital credit, with a completely new form of credit emerging as the mainstream in the market, and leading the economy towards the future.

Keywords. Economic society; Credit; Digital economy; Digital credit

1 Introduction

This paper aims to distinguish between traditional economic societies and the digital economy era by discussing and comparing credit across different periods to observe its impact on the economy. Although credit exists in both socialist planned economies and capitalist market economies, the intersection of the two occurs in socialist market economies. The question of which form is more conducive to economic development has complex theoretical and practical implications. It was once fiercely debated, with the socialist camp led by the Soviet Union and the capitalist camp led by the United States. The Soviet Union, as a representative of the socialist camp, once led significantly in planned economy over the market economy-dominated U.S. economy. However, with China's reform and opening up in 1978 and the subsequent collapse of the Soviet Union in 1991, socialist planned economies seemed indisputably defeated by capitalist market economies. Yet, China achieved economic rise within just 40 years. While China formally adopted the operational mode of market economy, it did not rely on the freedom and democracy advocated by capitalism. Despite nominally implementing market economies, the understanding of credit seems quite different. This paper attempts to elucidate the differences between socialism and capitalism concerning the economy and credit. Based on these differences, it analyzes how China has achieved rapid

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development in digital economy and digital credit under the backdrop of the digital economy. This paper primarily addresses the above issues through two parts of discussion, aiming to clarify the aforementioned problems.

2 The Collapse of the Market Credit System in Traditional Economic Societies

2.1 Economic Society and Credit

In ancient China, the term "economy" carried connotations of "governing the country and ensuring the peace of the world," implying a kind of talent. Transposed into modern context, this could be understood as economic prowess. In Western economics, the concept of economy is understood according to the following logic: people are selfish, resources in the world are limited, and the infinite desires of people conflict with limited resources. To solve this contradiction, it is necessary to study how to obtain the maximum utility at the minimum cost. This is the context and logic of the term "economy" in Western economics. Today, due to its high exposure and widespread application, the term "economy" seems to have become self-explanatory. However, the definition and connotation of the economy are still very vague. When referring to the economy, people tend to focus on various indicators such as GDP, prices, imports and exports, and output. Broadly speaking, the economy can be understood as a state of affairs where organizations (countries, enterprises, or entities like the WTO) engage in sharing and cooperation among various relational entities to achieve certain goals. An economic society revolves around the economic activities of a community. So, what is the relationship between the economic society and credit? Simply put, the economic society cannot function without credit, or rather, credit is the basic condition and guarantee for the efficient operation of the economic society. The reasons are as follows: the term "economy" has been briefly explained above. Economic relations refer to exchange relations, and exchange is inseparable from the market, hence the term "market economy". Of course, the concepts of market and exchange mentioned here are broad and abstract. Therefore, the economy can be abstractly understood as the behavior of numerous individuals exchanging in the market. Of course, the purpose of the economy, according to ancient Chinese culture, is to "govern the country and ensure peace in the world," while according to Western economics, it is to obtain the maximum utility at the minimum cost. All means to achieve these goals involve exchange, and the platform for exchange is the market. In the process of exchange, there are efficiency and effectiveness issues. Whether through barter or using currency as a medium of exchange, it all boils down to the issue of "trust," which affects effectiveness or efficiency. Although the primitive form of barter or the "cash-and-carry" method does not heavily rely on "trust" (because parties can inspect, confirm, and complete exchanges on the spot), its efficiency is very low, resulting in limited benefits. However, the economy strives for maximum utility, so to improve the efficiency and effectiveness of exchange, it is necessary to shift from immediate transactions to contractual exchanges, where the efficiency and effectiveness of exchange can be higher. Moreover, contract fulfillment requires one party to fulfill the contract first (reverting to immediate transaction mode), and the other party to follow suit, for the transaction to be completed. The quicker this process, the higher the efficiency of the transaction, and of course, the greater the benefits. So, the question arises: after initiating a transaction, if one party fulfills the contract first, what are the consequences if the other party does not reciprocate or does not fulfill the agreed conditions? Of course, the party that fulfills the contract first will suffer losses, or rather, has a higher probability of suffering losses. Conversely, the party that reciprocates first gains benefits or gains control over the transaction. But if both parties wait for the other to fulfill the contract first, or if both parties think this way, the transaction will stall or be delayed. This brings us to the issue of "trust and distrust" in market transactions. Indeed, if both parties trust each other, without any hesitation, the transaction will proceed smoothly, and both parties will profit. However, in economics, there is a term or economic phenomenon discovered through long-term practice: there exists asymmetric information in the market, meaning that the amount of information each party possesses about the other (or the market) is not consistent. When people realize that this phenomenon is a normality in market transactions, they become concerned that they may suffer losses due to insufficient information. Therefore, in transactions, there is hesitation because of fears of loss. Consequently, parties dare not initiate transactions (such as making payments or delivering goods first), but rather hope to collect more information before initiating transactions or wait for the other party to initiate the transaction before reciprocating to complete the transaction. Thus, resolving the trust issue arising from asymmetric information becomes crucial for completing market transactions smoothly. If both parties in the transaction can trust each other to fulfill the contract multiple times, a mutual trust specific to each other will develop, and when this individual example is amplified to the whole, it is not difficult to see that the more widespread this trust is in the entire economic society, the greater the efficiency and effectiveness of the economy. Conversely, the efficiency and effectiveness of the economy will deteriorate. This is the basic logic and basis for the economic society's dependence on credit, as mentioned earlier.

2.2 Literature Review on Trust and Credit

When discussing credit in the economic society, it is important to first clarify the meanings of the terms "credit," "trust," and "reliance" within the scope of economics. In previous domestic research, credit has been a separate research field, clearly distinguished from trust and reliance. Few scholars differentiate between trust and reliance; research on reliance is mostly found in statistics and legal studies, while research on trust is predominant in economics, sociology, and psychology. This paper mainly focuses on discussing trust and credit. Zhai Weixue (2014) [1] believes that there is no mature trust theory in sociology. Psychology mainly explores the mechanism behind interpersonal trust from the perspective of individual characteristics (Wang Lianwei et al., 2020) [2], while economics predominantly views individuals engaging in market transactions as rational economic actors, and their behavior in the market is considered rational. However, trust in the market is risky and costly due to factors such as "uncertainty," "asymmetric information," and "incomplete contracts." At the same time, trust is indispensable in the market as transactions are inevitable. Choosing to trust in transactions is the simplest and best way to reduce transaction costs. As noted by the American economist K. Arrow (2006) [3], "Trust has very important practical value. Trust is an important lubricant in the social system. It is extremely efficient. If people have a reasonable degree of reliance on the words of others, trust between people can save a lot of trouble. Unfortunately, trust is not an everyday commodity that can be easily purchased." In the English context, "trust" (Trust) encompasses meanings such as "reliability," "credibility," and "responsibility." Trust is a social relationship based on honesty and credibility, while credit is the ability built on the trust of the creditor to fulfill the repayment commitment. Credit and trust go hand in hand. A person with credit is more likely to gain trust from others (Yan Yanyang et al., 2006) [4]. Cheng Minxuan (2006) [5] believes that credit refers to a kind of transaction behavior, namely, a moral and socially recognized interaction and process among people. From an individual perspective, trust is the confidence that, in social interactions or interpersonal processes, the behavior of the trusted party is beneficial or at least not harmful. Trust is a risky decision or choice made under the premise of not being able to control others' behavior, and it is an expectation for the promises and/or behaviors of the trusted party. Credit, on the other hand, entails adhering to commitments in economic and social interactions. Ma Benjiang (2008) [6] believes that trust is the recognition of credit behavior by one party to the transaction. Cheng Minxuan (2006) [5] holds that the economic implication of credit is to abide by contracts, conduct honest transactions, and reject opportunism.

In summary, trust is a relational state between the parties involved in a transaction, or it can be seen as one party's attitude or expectation towards the other party. On the other hand, credit is the recognition that individuals or organizations receive for their honesty and integrity, making them more likely to be trusted. Trust is often used as a verb, indicating subjective behavior, while credit is predominantly used as a noun representing a state. In the economic society, to efficiently and reasonably allocate resources, transactions (exchanges) are indispensable, and transactions are inseparable from markets. However, in a free market, its order (or equilibrium) is regulated by the "invisible hand," which is much slower and less efficient compared to the direct allocation of planned economies. Both planned economies and market economies share the blind spot of "asymmetric information," where the capitalist market economy's "asymmetric information" manifests between the parties to the transaction, and the socialist planned economy's "asymmetric information" manifests between supply and demand. In the global predominance of market economies, the best way to address the issues of "asymmetric information," "uncertainty," and "incomplete contracts" is to enhance credit in the market. However, as analyzed earlier, trust is a subjective behavior, representing individuals' perceptions and attitudes towards the problems of "asymmetric information," "uncertainty," and "incomplete contracts" in the market. Choosing to trust is because, for the parties involved in achieving common interests, even if one party may sacrifice opportunities for profit by fulfilling the contract and may even suffer significant losses, they believe that the other party can fulfill the contract independently (Zou Xiaofan. Trust in Enterprises. Journal of Commerce, 2012) [7]. Because in market transactions, one party must fulfill the agreement first to initiate the transaction, and the completion of the transaction requires the other party to fulfill the agreement. Therefore, the party that fulfills the agreement first chooses to trust. Through multiple transactions (games), the party that fulfills the agreement first wins the trust of the trading partner by consistently honoring commitments and completely rejecting opportunism, thus gaining credit in the market. Similarly, because of credit, they also gain greater trust. However, credit is earned from others. In conditions of a free market, countless market participants face significant risks in trusting others due to the opacity of market information. Although game theory suggests that Nash equilibrium can be achieved through multiple games, it must be acknowledged that credit in the market is still scarce.

2.3 Credit in Contracts

The essence of the economy is to achieve the optimal allocation of resources for individuals, enabling them to sustain their basic needs and livelihoods, thus facilitating the natural cycle of life. In this process, due to the scarcity of resources and the mechanisms of distribution, how to better match resources to individuals becomes the core issue of economic research. It is precisely for this reason that people, in the process of transactions, have discovered the value of intermediaries that enhance transaction efficiency—currency, making it the ultimate form of credit. For a nation, currency represents national credit, while on a global scale, the use of a common currency reflects people's trust in the fairness and security of the world order. For instance, under the Bretton Woods system after World War II, the US dollar, tied to gold, was trusted because people believed in the value of gold, but behind this was an even greater and more significant trust—governments' willingness to trust that the US government would strictly adhere to issuing dollars according to the official price of gold at $35 per ounce. However, when this trust changed, the credit of the US dollar changed as well, until Nixon's New Economic Policy announced in 1971, when the US dollar lost the trust of countries worldwide due to its detachment from gold, thus losing its creditworthiness at that time. Therefore, in market economic activities, credit is often defined in terms of creditworthiness. Initially, credit was understood as "borrowing" or "credit" (Liu Hang et al., 2009) [8]. In other words, credit is most directly reflected and demonstrated in credit relationships. The emergence of currency has made market transactions more convenient and accessible. However, despite this convenience, completing transactions is not a simple task. The presence of currency merely enhances the functionality of transactions on a physical level, but trust between people in the market and the credit of individuals or organizations are not naturally established or generated synchronously. While currency simplifies transactions themselves, the absence of trust and credit makes these seemingly simple transactions complex. Earning trust or gaining credit requires significant costs, where trust is subjective, and credit is objectively manifested. Hence, most economists agree that the essence of economic issues lies in matters of credit. In order to strengthen credit, people invented contracts, which clearly stipulate penalties for breaches of contract, hoping to reinforce credit in the market. However, people quickly discovered the incompleteness of contracts, the complexity and instability of the market, and the asymmetric information in the market. Despite contracts being able to increase credit to a certain extent, driven by interests, there are still large numbers of opportunists (or speculators) who take advantage of loopholes or free-ride in the market. Especially in the present 21st century, the entire world market is in a state of extreme chaos, as the existing power relations have changed. The world order upheld by existing powers is collapsing, and even the creators of the order themselves are undermining it, and the disruptors are behaving recklessly and unreasonably. It's like one party in a transaction repeatedly defaults and refuses to be penalized, acting unreasonably and aggressively, as if to say, "This is how it is, what can you do about it?" When people cannot find fairness and cannot trust international organizations or international rules, the credit relations of the entire world become extremely fragile. If the intensity of destruction is further intensified, credit will basically be reduced to zero. The "decoupling and disconnection" that may occur in the current world economy is the most obvious manifestation of the extreme lack of credit in the entire world market.

2.4 Trust and Disruption in Rules and Order

In his book "Leviathan," the British politician and philosopher Thomas Hobbes describes an initial primitive state of nature as "a war of all against all," and it is the formation of the state as an organizational form that ends this state. Originally, in a state of war, individuals voluntarily surrender their power to kill each other for self-preservation to the state. The state then ensures the security of "all," and it is the state, not individuals, that deals with violators. Thus, a new order is formed where individuals do not have the right to arbitrarily dispose of others, and people's security is based on the credit of the state. The state regulates people's behavior through the military, police, and courts, and it possesses machinery and coercion, which individuals do not have. This kind of credit is based on various aspects such as politics, economics, military, law, and society. Because of the existence of this order, the economic development of the country can be guaranteed. However, in many countries in today's society, even this most basic order has not been guaranteed. For example, in many African countries, although they are recognized by the United Nations and appear to be states, they are still in a tribal state internally, with no unified order, and confrontation and war are commonplace. Another example is Myanmar in Asia, where there are many ethnic groups and their respective armed forces internally, and various forces are still in a state of "a war of all against all." Although it claims to be a country, it has not yet achieved the most basic order as a country.

The World Trade Organization (WTO), officially operational since January 1, 1995, was originally intended to establish a vast global trading market where countries would have different roles and interdependence, forming a supply-demand chain and ecosystem. The concept of "globalization" refers to achieving efficient allocation of global resources, capital, and labor within this framework. This vision represents an ideal scenario. In 2001, the Chinese government joined the WTO, participating in global operations and constructing its own economic order in accordance with WTO rules, actively engaging in global division of labor. However, behind these seemingly trustworthy rules lies a scheme prone to losing credibility. The implicit message behind these rules is that developing countries can only pursue their development in low-end technology sectors, while high-tech sectors must remain in the hands of developed countries led by the US and the West. Once developing countries venture into high-tech sectors and even compete with the developed country club, these WTO rules no longer apply. Instead of using WTO rules to regulate violators, these Western countries impose various sanctions on developing countries, preventing them from sustaining development in high-tech sectors. In 2006, the World Bank's "East Asia Economic Development Report (2006)" introduced the concept of the "Middle-Income Trap," citing examples such as Mexico in North America, Brazil and Argentina in South America, and the Philippines in Southeast Asia. These countries, categorized as middle-income countries (with per capita gross national income of about $10,000 to $12,000), find it difficult to continue development once they reach this stage. This phenomenon deeply worries many developing countries, including China. This viewpoint also influenced China's economic development for a time. Many domestic and foreign scholars once pessimistically predicted that China would fall into the middle-income trap. However, China's economic development has proven this to be a false proposition. Behind the economists' proposition of the "Middle-Income Trap" lies the subjective shaping of the world economic order, which, in essence, undermines public market trust. It is widely known that the US dollar dominates the development of the world economy. Whether in Latin America, South America, or Southeast Asia, the main reason why these countries fall into the middle-income trap is the manipulation of the market by US dollar capital. Since these countries have opened their markets, including capital and financial markets, they have essentially handed over control of their economies to capital. Represented by Western countries, capital adheres to a zero-sum game mentality—either they win and others lose, or vice versa. Therefore, they do not allow developing countries to share the benefits, especially to compete. When these "rising stars" of developing countries enter the middle-income status, they become "sheep to be slaughtered." The capital side, holding the power of life and death, then takes advantage of the privilege of the US dollar as the world's universal settlement currency. Whether it's "opening floodgates" or "tightening the faucet," whether it's quantitative easing or tightening monetary policy, it is the US Federal Reserve (and government) that has the final say. Capital itself is bloodthirsty. Where there is profit, it becomes the target of capital's pursuit. These countries are targets of capital. When these countries' economies develop initially, the open policies attract massive capital inflows. However, when these countries make efforts to govern their economies and develop them to a certain extent using foreign capital, capital smells the scent of profit and starts to squeeze them. A large amount of capital withdraws from these countries' markets in a short period, resulting in a sudden collapse of these countries' economies. When these economies hit rock bottom, the capital side aggressively buys back assets at extremely low prices. This method of operation, familiar to the capital side, is a replication of the 1997 Southeast Asian financial crisis and the 2008 subprime mortgage crisis in the United States. This scenario perpetuates a widening gap between rich and poor nations globally. Developing countries have almost no chance to break through the blockade of capital. Ultimately, they can only provide basic living necessities and services to developed countries in low-end markets. Despite Western countries selling the idea of American-style freedom and democracy worldwide, promoting capitalism as the only path to modernization, not a single developing country (even those that completely copy Western political democracy and economic development models) has entered the ranks of modernization through this method. This is because the club of developed countries does not allow other countries to share the pie. Using the false proposition of the "Middle-Income Trap," they deceive various developing countries about their understanding of economic development, artificially depicting capital's harvest as a natural phenomenon and rule of economic development. Many harvested countries can only blame themselves and feel helpless. China's rise has shattered this false proposition. As more countries realize the falsehood behind this phenomenon and the results of being harvested, the entire world experiences a severe credit crisis. This is the fundamental reason why Western countries, led by the United States, vigorously suppress China's economic development. If China reshapes a new form of credit worldwide, a new world order will be established. Behind this lies the game and competition between Eastern and Western cultures and economic modernization development models.

2.4.1 The Cultural Battle Behind Eastern and Western Rules and Orders

The core of economic research is how to efficiently allocate resources, but who should do the allocation is a fundamental question because resources cannot match themselves and must be directed to where they are needed by some force. This has been a core issue studied by Western economists for a long time. Mechanistically, the earliest scholars, led by Adam Smith, proposed the concept of a free-market economy (classical liberalism), which entrusts the economy to the market, allowing the "invisible hand" to drive economic operation. This "invisible hand" refers to the supply-demand relationship and the market price changes brought about by it, driven by human nature and interests, enabling the supply-demand relationship to reach a balanced state. Even if there is a short-term imbalance, it will be adjusted by that "invisible hand" and eventually return to equilibrium. This argument was shattered by the Great Depression in the United States from 1929 to 1933. Consequently, in

1936, John Maynard Keynes published "The General Theory of Employment, Interest and Money," which heralded the birth of macroeconomics, essentially arguing for government intervention in the economy. This theory temporarily replaced classical liberalism until the 1970s when a new economic theory gradually gained dominance, known as neoclassical economics, which echoed free-market economics, denied public ownership, socialism, and state intervention. With the collapse of the Soviet Union in 1991 and the end of the Cold War, the bipolar confrontation led by the United States and the Soviet Union transformed into U.S. hegemony. Socialist planned economies lagged behind capitalist market economies, becoming a consensus worldwide. China implemented reform and opening up in 1978, gradually attempting to develop a market economy. China's development of a market economy was based on retaining a large number of state-owned enterprises, thus termed a socialist market economy. After more than 40 years of market economy development, China has achieved unprecedented breakthroughs and development without falling into the "middle-income trap." China's development model is completely different from that of capitalist development. Therefore, the concept of Chinese-style modernization was proposed in China's Twentieth Congress report, announcing to the world a different economic development path and model. Meanwhile, the development model advocated by Western neoclassical economics has seen frequent accidents, with various economic crises constantly unfolding, indicating an apparent trend of decline in the West. China's economy surpassed Japan's in 2010 to become the world's second-largest, with a GDP of $18 trillion in 2022 compared to the US GDP of $25 trillion, accounting for 70% of the US's GDP. Additionally, according to purchasing power parity, China's GDP is approximately $30.3 trillion, compared to the US's $25.5 trillion, indicating China's larger GDP scale.

Gross domestic product 2022, PPP

Ranking	*Economy*	(millions of international dollars)
1	China	30,337,137
2	United States	25,439,700
3	India	11,904,797
4	Japan	5,703,678
5	Russian Federation	5,326,855 h
6	Germany	5,323,007
7	Indonesia	4,038,239
8	Brazil	3,838,532
9	France	3,764,759
10	United Kingdom	3,678,728

Figure 1. Snapshot of GDP of Various Countries Published by the World Bank in 2022 (Based on Purchasing Power Parity)

Source of Data: World Bank

Here arises a question: Why has China managed to achieve in just over 40 years what took Western societies centuries to accomplish, and even surpassed them? This is no longer merely a question of development models but rather a question concerning people. While Western societies indeed excelled in politics, economics, military, and culture for over a century, China's rapid rise has quickly eroded the various advantages that the West once held. Behind this phenomenon lies not only the capability of state governance but also the people themselves. The strength of the Chinese people stems from the nurturing and inheritance of traditional Chinese culture. It is based on this culture that China's economy has been able to generate tremendous developmental momentum. For instance, characteristics deeply ingrained in the Chinese populace such as diligence, thriftiness, simplicity, self-reliance, diligence, unity, discipline, resilience, and kindness, were once thought to be universal human traits but have turned out to be uniquely Chinese. Through comparison, it becomes evident that what seems to be the simplest traits—such as discipline, unity, dedication to duty, and willingness to contribute—are readily observable among the Chinese people but are lacking in many other nations, requiring training and strict management to achieve. The thoughts embedded in Chinese culture, such as benevolence, righteousness, propriety, wisdom, and trustworthiness, as well as modesty, politeness, frugality, respect for the elderly, and care for the young, prioritizing the nation's worries before one's own and rejoicing in the world's happiness after one's own, stand in stark contrast to the blatant egoism, survival of the fittest jungle law, and politically correct freedom and democracy prevalent in Western societies. The debate over the superiority or inferiority of Eastern and Western cultures has become clear in the face of strong evidence and is beyond dispute. Western civilization is a conditional one, and once conditions change, civilization ceases to exist. For instance, the merciless slaughter of unarmed women and children by soldiers during wars waged by Western countries against smaller nations, and the indiscriminate killing of people during the current global pandemic, demonstrate the stark differences in civilization. This is also why people all over the world are learning Chinese, studying Chinese traditional culture, and why the United Nations has included Chinese as a universal language. Moreover, with the widespread use of the internet and the leading development of mobile communication technology, the capturing of these cultural differences and the learning of traditional Chinese culture will undoubtedly spread even more rapidly.

2.4.2 The Contest of Development Models Behind Rules and Order

The contest and rivalry of development models in economic modernization also constitute another focal point affecting the credibility of the global market. Since Europe and America monopolized the rapidly growing economy and dominated the world, the membership of the Developed Country Club has remained highly stable. Apart from the Asian Tigers (South Korea, Hong Kong, Taiwan, and Singapore) and Israel entering the Developed Country Club in the 1990s, no emerging countries have joined the ranks of developed countries. Here, developed countries are equated with modernization, implying that no country has entered modernization since the 1990s. Presently, apart from China, North Korea, Vietnam, Cuba, and Laos, all other countries are capitalist nations adopting capitalist systems, similar to over 30 developed countries. As of 2023, there are a total of 197 sovereign states worldwide, with over 130 countries gaining independence after World War II. Except for the five socialist countries, none of the remaining countries outside the developed countries, including China, have smoothly developed into advanced economies following the capitalist model. Instead, they have consistently hovered outside the realm of developed nations, with no clear upward trend. Even some countries that once showed strong development, like Thailand, Malaysia, Indonesia, the Philippines, and Vietnam—referred to as the "Five Tigers" similar to the "Four Asian Tigers"—suffered setbacks during the 1997 Southeast Asian financial crisis. Despite Malaysia's efforts over 40 years, it regressed economically by two decades after being shorted by international financier George Soros. However, not all problems stem from external interference; these countries have their own internal issues, making them vulnerable to asset stripping by international financiers. However, it is an undeniable fact that the capitalist system advocated by Western countries, based on democracy and freedom, has not led these countries into modernization. None of them have achieved it because there is no comparable model. After the collapse of the Soviet Union in 1991, the socialist planned economic model declared significant problems worldwide, rendering it unsustainable. Consequently, the capitalist development model advocated by the West, emphasizing freedom and democracy, was considered the only path and model to modernization worldwide. As a result, countries worldwide, including China, had to learn from the successful development experiences of Western countries to change their own economically backward status. For China, exploring and attempting a market economy led to numerous scholars studying Western economics, making English a compulsory subject, and a large number of students studying abroad. Both academia and industry strived to integrate Western market economy development models with socialist economic development. The country defined this phase as the primary stage of socialism. Originally incompatible systems, even criticized ones, such as how to transition from socialist planned economy to socialist market economy, posed continuous challenges from top to bottom, from central to local levels. The central government knew it couldn't blindly copy Western models, as doing so would blur China's socialist character. However, without reform and opening up, China's economic development could not be guaranteed, which would affect people's livelihoods, national defense, and future prospects. Thus, China proposed the guiding principle of "crossing the river by feeling the stones," prioritizing economic construction first, adopting the attitude of "whether a cat is black or white, as long as it catches mice, it is a good cat." It can be said that not only the central government but also ordinary people were searching. In such circumstances, due to the need for theoretical basis and guidance, and since socialist planned economic ideas were inadequate to guide a market economy, Western economic theories naturally became the standard and mainstream, a phenomenon that persists to this day. However, practical experience made the Chinese realize that Western economic theories and practices were not the same as China's reality. Just as China could not copy the Soviet Union and use urban encirclement to complete the New Democratic Revolution, Marx's theory had to be combined with China's reality to be effective, a valuable experience summarized from decades of revolutionary practice in China. Unlike other countries implementing capitalist systems that completely opened up their economies, China selectively and reservedly opened up. Although it adopted a market economy, according to the mainstream view of Western neoclassical economics: "Government intervention in private economy is unnecessary; market mechanisms should be allowed to function fully." However, China's state-owned economy still accounts for a considerable proportion. This is why Western societies have criticized China for not fully entering a market economy. Nevertheless, as China's economy steadily develops, the world clearly sees some facts: during the 1997 Asian financial crisis, Western capital did not harvest benefits from China due to China's control over capital and finance; 23 years ago, in 1998, China entered the "middle-income country" category but did not fall into the trap, despite US capital plotting to trap China by harvesting it; in 2008, the subprime mortgage crisis sparked by the United States, China's government purchased a large number of US Treasury bonds to help the US through the economic crisis; since the 1980s, as the US manufacturing industry gradually shifted overseas, China undertook the manufacturing industry and gradually formed production capacity throughout the industry chain, with "Made in China" spread all over the world. This not only ensures global production and consumption needs but also foils Western society's plans to sanction, blockade, and suppress China's economy. In 2013, China proposed the Belt and Road Initiative, connecting China with the world, using China's strength and approach to connect the world economy. Although Western societies strive to discredit the Belt and Road

3 Digital Credit in China's Digital Economy Era

Although Internet technology initially emerged in the United States, China has shown a trend of catching up and even surpassing in its application. The digital economy is based on the development and application of Internet technology, including emerging technologies such as big data, cloud computing, the Internet of Things, blockchain, artificial intelligence, and 5G communication. At the application level, "new retail" and "new manufacturing" are typical representatives. Almost all sectors of the economy are undergoing digital transformation, with data referred to as the "oil of the data age." The era of the digital economy permeates and reshapes the entire economic system (Fu Xiaodong, 2020) [9]. The digital economy era has long been underway. In China, e-commerce based on Internet technology is particularly prominent, while mobile payment technology has further elevated the development of e-commerce in China. It can be said that the birth of the digital economy has not only disrupted the traditional mainstream neoclassical economics of Western society but also brought about a comprehensive and all-round impact on the real economic system, representing a new revolution. The digital economy has become a major part of the global economy, transforming traditional industries, creating emerging industries, and reshaping people's ideological space, creating a digital civilization. At the same time, whether digital technology will lead humanity down a dark path of enslavement or towards a bright future remains unknown (Xu Jin, 2023) [10]. Regardless of whether humanity is ready or whether one welcomes or fears it, the curtain of the digital economy era has rapidly opened. Digital literacy has become a basic quality of citizens, and mass customization has become the manufacturing paradigm of the digital economy era (Yan Deli, 2019) [11]. Against the backdrop of the digital economy, significant changes will occur in economic development, social governance, state management, and people's lives, ultimately leading to a society characterized by interconnection, real-time interaction, high transparency, and high intelligence (Han Jiaping, 2020) [12].

3.1 Changes in Digital Credit in the Era of China's Digital Economy

What changes will occur in credit in the era of digital economy? Here, we will mainly analyze and elaborate on three levels: individual credit, organizational credit, and national credit.

3.1.1 Personal Digital Credit in the Era of Digital Economy

In China, the earliest personal credit reporting began in 2006, initially led by the People's Bank of China. Initially, it mainly revolved around personal debt credit. In other words, if someone had no financial dealings with financial institutions, there would be no credit activities associated with that individual. Due to the limited collection of personal information, for the general public, more personal credit exists in grassroots communities. It is opaque, small-scale, and difficult to supervise. Even within an organization, personal credit assessment is limited to vertical superiors and horizontal colleagues, making it challenging to conduct a comprehensive, three-dimensional evaluation of an individual's creditworthiness. In the era of planned economy, due to small differences in individual benefits, low overall income levels, strict multidimensional discipline control, and moral constraints, and most people being in a society of acquaintances with low population mobility, individual credit, although opaque, was maintained at a relatively high level due to the high cost of making mistakes. Tian Hecheng (2009) [13] explained the reasons for China's low crime rate before 1979 in his master's thesis [Tian Hecheng. Research on the Relationship between Economic Development and Crime [D]. Supervisor: Wan Guanghua. Northwest A&F University, 2009.]. After the operation of the market economy, this situation changed. Tian Hecheng et al. (2009) [14] concluded through empirical analysis that the widening income gap is always an important reason for the increase in crime rates, and the increase in population mobility and urbanization level is an important reason for the rise in crime rates. Of course, using whether one commits a crime as a measure of personal credit is a relatively extreme indicator. Personal credit is more often related to moral considerations and not necessarily illegal. However, illegal behavior is undoubtedly the most direct manifestation and proof of personal credit deterioration. In the context of a market economy, the increase in economic activities has led to an incomparable increase in the quantity of interactions between individuals, organizations, and individuals and organizations compared to the planned economy era. Transactional behavior can better reflect an individual's creditworthiness, making individual credit more important and even directly convertible into resources or capital. Due to the lack of sufficient supervision or the high cost of supervision, in the early stages of reform and opening up, some opportunists or speculators seized the "loopholes" or "gray areas" in national policies, and indeed many people gained improper benefits. The first group of wealthy individuals, apart from the farmers who benefited from the household responsibility system, were those who ventured into business. Because conducting market economy activities was like feeling one's way across the river, rumors arose in the grassroots that "the daring get rich, while the timid starve," encouraging people to push the boundaries and rules. For example, there were professions like "document fixers" and the emergence of "briefcase companies," all behaviors that shamelessly consumed personal credit because in the early stages of reform and opening up, policies, laws, and regulations did not achieve widespread coverage and there were many blind spots and gray areas, especially in the 1990s when the overall personal credit in society showed a downward trend, leading to phenomena such as "deadbeats" and various forms of deception and fraud. It was also during this period that China began to focus on corporate credit reporting, and in 1993, the People's Bank of China issued the "Guiding Opinions on Developing Personal Consumption Credit," becoming the first guiding document for China's personal credit reporting system (Li Ying, 2005) [15].

Company Name	NetEase	Sohu	Tencent	Sina	Jingdong
Creation Year	1997	1998	1998	1998	1998
Founder（s）	Ding Lei	Zhang Chaoyang	Ma Hateng	Wang Zhidong	Liu Qiangdong
Company Name	Qunar	Qihoo 360	558. com	Youku	Ele me
Creation Year	2005	2005	2005	2006	2008
Founder（s）	Zhang Chenchao	Zhou Hongyi	Yao Jinbo	GWu Yongqiang	Zhang Xuhao
Company Name	Zhihu.	Kuaishou	TouTiao	XiaoHongShu	HuoLala
Creation Year	2011	2011	2012	2013	2013
Founder（s）	ZhouYuan	SuHua	ZhangYmin	MaoWenchao/Zhai Fang	ZhouShengfu
Company Name	Ctrip	Tencent QQ	Alibaba	Dangdang	Baidu Inc
Creation Year	1999	1999	1999	1999	2000
Founder（s）	Liang Jianzhang，etc	Ma Hateng	Ma Yun	Li Guoqing	Yanhong Li
Company Name	Gaode Map	Vipshop	Weibo	BiLiBiLi	Meituan.
Creation Year	2002	2008	2009	2009	2010
Founder（s）	Cheng Chongwu	ShenYa/ Hong Xiaobo	Wang Zhidong	Xu Yi	Wang Xin
Company Name	XiaoMi	Momo	ShanSong	DouYu	DaDa
Creation Year	2010	2011	2014	2014	2014
Founder（s）	Lei Jun	Tang Yan	XuePeng	ChenShaojie/Zhang Wenming	KuaiJiaqi
Company Name	DiDiChuXing	YingKe	PinDuoDuo	ShanSong	DouYu
Creation Year	2015	2015	2015	2014	2014
Founder（s）	ChengWei	FengYousheng	HuangZheng	XuePeng	ChenShaojie/Zhang Wenming

Figure 2. List of Some Well-Known Internet Companies in China

Source of information: Compiled by the author based on online sources.

China's digital economy also began in the 1990s. Some of today's internet giants, such as Tencent founded in 1998, JD.com founded in 1998, Alibaba founded in 1999, Baidu founded in 2000, and others, emerged during this period (see Figure 2). Due to continuous breakthroughs in internet technology, the connection between individuals and the internet has become extremely close, implying that various transactional behaviors of individuals leave digital footprints on the internet. Especially after significant advancements in big data technology, personal information has become collectible, calculable, and processable. With the widespread use of internet applications, individuals naturally become deeply integrated with the internet, making it easier to collect personal information. In the era of mobile internet and the Internet of Things (IoT), it is almost impossible for individuals to disconnect from the internet and remain in an "offline" state. Moreover, in the data economy era, sensor devices such as cameras, serving as the eyes and ears of the digital world, are now ubiquitous in every corner of human society, generating massive amounts of data every second (Xu Yucong, 2021) [16]. Whether online or offline, the tangible activities of individuals are silently recorded, with virtually no activity hidden except for their thoughts. Furthermore, with the continuous upgrading and breakthroughs in AI technology, the "decoding" of individual thoughts and emotions is also being prioritized. It can be said that, against the backdrop of digital technology, the cost of supervising individual credit has become increasingly low. Individual credit has gradually become highly transparent, and from a technological perspective, real-time monitoring of personal credit has been essentially achieved. Low-cost technological means such as "internet credit reporting," "online searches," "live videos," and "online exposure" have been employed, making credit supervision of individuals virtually barrier-free and almost costless. At the same time, the strengthening of individual credit means by the government, such as the implementation of the "blacklist system" since 2014, has made it increasingly difficult for dishonest individuals to operate.

In conclusion, in the digital economy era supported by digital technology, the issue of personal credit, which used to be a major challenge, is becoming less problematic. The phenomenon of "no lost property on the road, no closed doors at night" is becoming increasingly common, reducing crime rates. Every citizen is a law-abiding citizen, which has brought about a revolutionary impact on both economic development and social stability.

3.1.2 Digital organizational credit in the era of the digital economy

Here, "organization" refers to various types of enterprises existing in the market. Whether they are manufacturing or service-oriented enterprises, they are rapidly being permeated by digital technology and are required to get on board the digital economy train. On the one hand, the high profits brought by the digital economy attract various organizations to undergo digital transformation. On the other hand, intense competition forces organizations of all kinds to firmly grasp digital technology, enhance their capabilities, and win in the competition. This is particularly evident in the e-commerce activities of enterprises. For example, live-streaming sales by enterprises can generate hundreds of billions of yuan in sales revenue from just one live broadcast by a top anchor, a feat unimaginable with traditional marketing methods. Concurrently, organizational credit has become extremely valuable. Internet technology has broken the economic puzzle of information asymmetry, making it easier to search and compare prices. A company's good reputation directly implies future high returns. The saying "good wine needs no bush" has returned to people's cognition of the value and credit of enterprises. Because of the application of digital technology and the internet, enterprise organizations, whether internally or externally, upstream or downstream, must establish and implement effective credit systems. For example, the internal management system of enterprises is becoming more transparent, the widespread use of ERP management systems, and more objective management replacing individual subjective awareness, relying on digital technology to better reflect fairness and justice. In external relations, managing public opinion has become a top priority for enterprise organizations, because every enterprise clearly understands that in the internet era, in an age of increasing transparency of information, establishing a good reputation requires gradual accumulation, and the collapse of a corporate "image" could happen overnight. Whether online or offline, in various economic activities, under the strong guarantee of digital technology, the original uncertainty in transaction behavior is turning into certainty. Whether before, during, or after a transaction, full-process supervision and management are gradually reducing uncertainty to zero. Similarly, based on internet technology, the signing of contracts between organizations has become easier. Moreover, due to the emphasis on and protection of corporate reputation, the problem of "contract incompleteness" is being addressed as both parties to the transaction strive to protect their interests. For example, the after-sales problems that used to cause headaches for various enterprises are now becoming simple and easy to handle.

In summary, under the backdrop of the digital economy, whether they are state-owned enterprises or private enterprises, foreign enterprises or joint ventures, the application of digital technology is indiscriminate. Digital technology has almost completely addressed the challenges of "uncertainty," "information asymmetry," and "contract incompleteness" that have plagued market economic development in Western economics. In the face of market competitors and partners, numerous individual consumers, and government supervision and management, organizational credit becomes a critical factor, where there's no room for deception or hiding. With the widespread adoption of digital technology and enterprise digital transformation, the manipulation or concealment of corporate credit through various means is becoming increasingly impossible. This enables fair participation in market competition for enterprises, acceptance of consumer supervision, and easier management by relevant departments.

3.1.3 National digital credit in the era of the digital economy

The country is also a primary organization, as it possesses administrative and regulatory functions, making it a special entity. Within the scope of the global economy, a country participates in international trade much like a business organization, for instance, within the framework of the WTO, where the country accepts management and supervision from the WTO. The credit of a country is reflected in both internal and external aspects. Externally, it involves honoring commitments and pledges in various international organization activities and upholding justice and fairness in handling international affairs to gain trust from the international community. In the era of the digital economy, communication between countries, whether intergovernmental or among civilians, becomes easier. Leveraging digital technology makes information exchange between countries more instantaneous and convenient. Especially with the introduction of various social media platforms, boundaries are being broken, facilitating seamless information exchange between nations and achieving lossless transmission. With no longer just mainstream media dictating information or selectively disseminating it, it becomes possible to objectively observe and understand the real situation of a country from an external perspective. For example, due to the widespread use of social media, people worldwide can accurately understand China through various videos and texts uploaded on these platforms, even if they haven't personally visited China. This helps enhance China's national reputation and undoubtedly contributes to strengthening national credit. On the other hand, observing national credit from an internal perspective under the digital economy involves timely and comprehensive release of the country's political and economic policies, enabling citizens to understand national affairs firsthand and know what the government is focusing on. Furthermore, it involves effectively stabilizing public opinion and handling major domestic and international incidents. For instance, during the recent pandemic, digital technology played a significant role. Success in developing and implementing health codes, online work arrangements, unified community management, and real-time information dissemination all demonstrate the convenience brought about by digital technology. It showcases the government's actions and reveals the attitudes and capabilities of various countries in handling the pandemic. Although the pandemic is a disaster, it tests the governance capacity of the Chinese government and demonstrates its strong attitude and effective measures toward ensuring public safety to the world. Moreover, the application of digital technology that affects people's livelihoods, such as the use of digital currency, can make payments more convenient and secure while ensuring transparent currency circulation, preventing corrupt practices such as money laundering. For instance, the use of digital taxation prevents organizations and individuals from tax evasion, making tax evasion a thing of the past. These applications of digital technology not only reflect China's strong research and development capabilities but also demonstrate the government's governance capacity to its citizens, enhancing their sense of government identification and national confidence.

The will of the people is the will of heaven. The Chinese government spares no effort in promoting digital technology and vigorously developing the digital economy, making government management visualized. Previously, it would take some time for a central document to reach local levels for study and implementation. Now, all major political activities of the Party and government are broadcast live on-site, and significant public opinions are handled in real-time. For instance, field hospitals were built in 10 days during emergencies, and the surface of the Sanyuan Bridge was replaced within 24 hours. By leveraging digital technology to develop the digital economy, the effectiveness of the government is fully demonstrated. As the saying goes, when the people have faith, the country has strength, and the nation has hope.

3.2 The role and significance of digital credit for China's future development

In the era of the digital economy, digital credit is manifested at the individual, organizational, and governmental levels. The formation of this credit is, on one hand, a natural consequence of technological progress and, on the other hand, a result of the synchronized social progress of individuals and organizations. This multi-dimensional holistic credit formation is not easily achieved but yields tremendous power once established. China's significant progress is largely dependent on this credit system. This is not an overstatement, as evidenced by the development trajectories of other countries. The role of this credit system has been demonstrated in the economic development and construction of national economies in the United States, Japan, Singapore, and during the early stages of China's founding. It is merely flourishing anew in China. We have previously discussed the differences between socialist planned economies, capitalist market economies, and the socialist market economy implemented in China. One particularly striking and debated issue is the distinction between socialist market economies and capitalist market economies. In practice, China's market economy draws from various Western market economy models, and theoretically, Western economics is also mainstream in Chinese universities. Initially, the market economy appeared to blur the boundaries between socialism and capitalism, yet as we enter the 21st century and the era frequently mentioned by President Xi Jinping as "a time of unprecedented change in the world," with China's rise and the frenzy of encirclement by Western countries led by the United States attempting to hinder China's peaceful rise, the differences between socialist market economies and capitalist market economies become clear. China's development of a socialist market economy aims to achieve common prosperity, while the goal of capitalist market economies is to achieve capital monopoly, resulting in an intertwining of the two. Through the development of a socialist market economy, China has eliminated poverty and moved toward a moderately prosperous society. However, Western societies hope to utilize globalization to make China serve the capital interests of a few developed countries. When the two are irreconcilable, confrontation and conflict naturally occur. From the perspective of digital credit in the digital economy, China is already forming or has preliminarily formed digital credits at various levels. Under this credit system, ambitious goals such as the dual circulation strategy, rural revitalization strategy, national unified large-scale market strategy, revitalization of supply and marketing cooperatives, and realization of a Chinese-style modernization can be achieved. These goals are holistic, and without the support of digital credit, they would be difficult to achieve. If these goals are achieved, what vision can China expect? Neoclassical economics advocates for market freedom, believing it to be the most advanced and efficient way for the world to operate. However, under the support of the digital economy, if the Chinese government utilizes the power of the nationwide supply and marketing cooperative system network, centrally coordinates it, and leverages digital technology, big data, and the advantages of the internet to connect dots into lines and lines into surfaces, forming a unified large-scale market in China, then the allocation of resources and goods across the country can be achieved through this extensive network without barriers or local protections. With the central government serving as the national data control center, resource allocation will no longer be spontaneously determined by the market but by intelligent data control, which will be far more efficient than market self-regulation. With the functionalities of digital technology and big data, precise matching between supply and demand can be achieved. Such an economic operating model should be the epitome of Chinese-style modernization.

4 Conclusion

In the traditional economic and social credit system, with the change of the market and the change of the identity and role of the market-related relationship, the balance without is gradually broken. The vested interests in the original market system, the market rules created based on their own interests, are changing as the market balance is broken, and the benefits are obtained. Therefore, the original market, as well as the credit system that needs to be established because of the market, is also damaged by more and more players who break the rules and thus break their promises. Therefore, the market needs to re-establish a new credit system to maintain the development of the world. Therefore, the digital economy developed by China and the resulting digital credit are undoubtedly a new model. It can not only vigorously promote the continuous improvement of China’s market economy and market credit, but also form a credit system with socialist characteristics. The credit model will also be the model of the world.

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