

**THE EFFECT OF ECONOMIC POLICY ON
CORPORATE DIGITAL TRANSFORMATION,
FINANCIALIZATION, AND GREEN
INNOVATION IN CHINA**

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**THE EFFECT OF ECONOMIC POLICY ON
CORPORATE DIGITAL TRANSFORMATION,
FINANCIALIZATION, AND GREEN
INNOVATION IN CHINA**

by

CHENG ZHUO

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LIST OF ABBREVIATIONS

EP	Economic Policy
CDT	Corporate Digital Transformation
CF	Corporate Financialization
CGI	Corporate Green Innovation
Size	Firm Size
Lev	Leverage Ratio
IC	Internal Control
SOE	State Owned Enterprises
ITBack	Information Technology Background
Diginf	Digital Infrastructure
Analy	Analyst Following
FinBack	Financial Background
Prosp	Primary Business Prospect
GreBack	Green Background
GF	Green Finance
ES	Environmental Subsidy
GMM	Generalized Method of Moments
DIFF-GMM	Difference GMM
SYS-GMM	System GMM

KESAN POLISI EKONOMI KE ATAS TRANSFORMASI DIGITAL, KEWANGAN KORPORAT DAN INOVASI HIJAU DI CHINA

ABSTRAK

Beberapa tahun ini, China mengalami peningkatan mendadak transformasi digital, kewangan dan inovasi hijau. Walaubagaimanapun, ianya masih tidak mencukupi untuk memandu pembangunan berkualiti tinggi negara. Polisi ekonomi, dilaksana sebagai alat peraturan oleh kerajaan untuk menyelesaikan ketidakcekapan pasaran dalam agihan sumber, berpotensi sebagai pemacu arah dalam mempengaruhi gelagat korporat dalam meningkatkan transformasi digital, kewangan, dan inovasi hijau. Oleh itu, menggunakan pengukuran Kaedah Momen Teritlak (GMM) berdasarkan data 2,286 firma dalam senarai A dalam pasaran modal Shanghai dan Shenzhen dari 2010 hingga 2020, kajian ini meneliti kesan polisi ekonomi ke atas transformasi digital, kewangan, dan inovasi hijau di China. Dapatan menunjukkan hubungan positif antara polisi ekonomi dan transformasi digital, kewangan, dan inovasi hijau. Kajian ini mencadangkan bahawa kerajaan sepatutnya meneruskan pelaksanaan polisi-polisi ekonomi yang baik untuk terus menggalakan transformasi digital, kewangan, dan inovasi hijau. Kerajaan juga patut memberikan perhatian khusus kepada syarikat-syarikat bukan kerajaan negeri, entiti bersaiz kecil, firma-firma di daerah kurang membangun, industri yang tidak mencemar secara keterlaluan, dan syarikat-syarikat berteknologi rendah. Sebagai tambahan, syarikat syarikat milik kerajaan dan korporat yang lebih besar patut digalakan untuk memimpin pelaksanaan polisi ekonomi nasional.

**THE EFFECT OF ECONOMIC POLICY ON CORPORATE DIGITAL
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AND GREEN INNOVATION IN CHINA**

ABSTRACT

In recent years, China has experienced a noticeable surge in digital transformation, financialization, and green innovation. Nevertheless, these advancements remain insufficient to drive national high-quality development. Economic policy, wielded as a regulatory tool by the government to address market inefficiencies in resource allocation, holds potential as a guiding force in influencing corporate behavior towards amplifying digital transformation, financialization, and green innovation. Hence, employing the generalized method of moments (GMM) estimation and drawing upon data from 2,286 A-listed firms within the Shanghai and Shenzhen stock exchange markets across the period from 2010 to 2020, this study delves into examining the impact of economic policy on corporate digital transformation, financialization, and green innovation in China. The findings reveal a positive linkage between economic policy and corporate digital transformation, financialization and green innovation. This study suggests that the government should continue implementing favorable economic policies to encourage corporate digital transformation, financialization, and green innovation. The government should pay particular attention to non-state-owned enterprises, small-sized entities, firms in less developed districts, non-heavy-polluting industries, and non-high technology enterprises. Additionally, state-owned enterprises and larger corporations are encouraged to lead in implementing national economic policies.

CHAPTER ONE

INTRODUCTION

1.1 Overview

China, situated in East Asia along the western coast of the Pacific Ocean, boasts a vast landmass spanning 9.6 million square kilometers, accounting for approximately one-fifteenth of the world's total land area. China is comprised of 31 provincial-level administrative regions and is home to a population of around 1.42 billion, constituting roughly 18% of the global population.

For a densely populated country like China, economic prosperity and development are the bedrock of stable governance, an essential prerequisite for ensuring the well-being of its people, and a pivotal concern across all stages of its development. Since the initiation of economic reforms and opening up, the Chinese government has placed a strong emphasis on economic development, yielding remarkable achievements. China's total Gross Domestic Product (GDP) has surged from \$149.54 billion in 1978, representing 1.74% of the global economy, to \$17.96 trillion in 2022, accounting for 18.5% of the world economy. China's economy has transitioned from an initial exploratory phase to a period of rapid and sustained growth, and it is now striving for high-quality development.

Amid rapid changes in the global economic landscape and the transformation and upgrading of the domestic economy, high-quality development of the Chinese economy is crucial. High-quality development implies not only the quantity of economic growth but also emphasizes the quality and benefits of growth. This includes the optimization of industrial structures, innovation-driven development,

sustainable environmental protection, and the improvement of people's well-being. Through high-quality development, China can achieve a shift from quantitative to qualitative growth, enhance the resilience and international competitiveness of its economy, ensure long-term stable and sustainable economic development, and realize the goal of a modernized economic system.

Digitalization, financialization, and green innovation are core pathways to achieving high-quality development. Digitalization facilitates the transformation and upgrading of traditional industries, enhances productivity and management efficiency, and fosters the emergence of new business models, steering the economy towards greater intelligence and informatization. Financialization invigorates the economy by optimizing resource allocation, promoting capital flows, and supporting innovation and entrepreneurship. Green innovation strives for a balance between environmental protection and economic growth, achieving sustainable development through the advancement of clean energy, improved resource utilization efficiency, and reduced pollution emissions. The synergistic integration of these three elements forms the foundation and assurance for high-quality development, providing a robust impetus for China's long-term economic growth. By accelerating digital transformation, deepening financial reform, and vigorously promoting green innovation, China can transition from quantitative to qualitative growth, enhance its economic resilience and international competitiveness, and ensure long-term stability and sustainable development.

The digital economy, characterized by digital technologies like cloud computing, big data, and artificial intelligence, is rapidly merging with diverse economic and social domains. This convergence is creating fresh avenues for economic development and establishing itself as the third significant economic paradigm,

following agriculture and the industrial economy (Sturgeon, 2021). The G20 Initiative on Development and Cooperation in the Digital Economy (2016) emphasized that the digital economy plays a pivotal role for nations worldwide in realizing inclusive growth and sustainable development, which underscored that socio-economic development has ushered in the era of the digital economy. And World Internet Development Report (2021) points out that digital transformation has become an important option to cope with the impact of COVID-19 pneumonia epidemic on economic development.

The global economy is accelerating its transformation towards an intelligent and efficient digital economy. Digital transformation serves as a catalyst for optimizing and modernizing traditional industrial structures, fostering innovation in business models, and reshaping the dynamics of market demand in traditional sectors. It also influences the competitive landscape and collaboration patterns among corporations, leaving a profound imprint on various traditional industries (Liere-Netheler et al., 2018; Fitzgerald, 2016).

At its core, digital transformation involves a shift in production and operational models, offering a powerful avenue for businesses to achieve innovation. The traditional production-oriented approach gives way to a customer-centric model that prioritizes individual customer needs. Service delivery evolves from universal offerings to personalized customizations. Work methods transition from offline, centralized processes to online environments, liberating employees from constraints related to time and space. This reduction in corporate production and operational costs streamlines traditional workflows, resulting in significant enhancements in work quality and efficiency (Hofmann and Jaeger-Erben, 2020).

By accelerating the widespread sharing of data and information, digitalization

substantially reduces market failures stemming from information asymmetry among corporations (Wu et al, 2022). In doing so, it plays a pivotal role in advancing sustainable and stable market economy development, promoting high-quality economic growth, and facilitating comprehensive upgrades in industrial structures.

As the digital economy emerges as the primary driving force for future economic development (Lee et al., 2023), digital transformation has gained recognition as a strategic imperative in the economic policies of diverse nations and international organizations. Numerous countries are actively formulating strategies and policies geared towards advancing the digital economy, with the aim of establishing it as a cornerstone of economic development, thereby gaining a competitive edge in future economic growth (Tsou et al., 2023; Huang and Song, 2023).

Finance serves as a vital catalyst in advancing economic development (Khan et al., 2021; Kihombo et al., 2021). The essence and role of finance is to facilitate the seamless integration of societal material resources with diverse production. In real-world scenarios, various resources associated with production factors are owned by different social and economic entities, each with distinct expectations regarding the returns on their respective resources. Transactions must occur among entities possessing these varied production factor resources to translate these resources into tangible productivity. In the context of these resources existing within society, financial intermediaries typically provide the means to amalgamate these production factor resources effectively (Kihombo et al., 2021; Van der Zwan, 2014). This, in turn, leads to the creation of tangible productivity, employment expansion, and the realization of economic growth. Finance acts as the bridge that connects diverse resource owners and fosters the collective achievement of economic objectives.

The interconnection of economic activities and financial activities has emerged as a prominent feature in the development of modern society. In the operation of market economies, the scope, domains, and capabilities of finance are constantly broadening. Simultaneously, the level of financialization is on the rise, serving as a robust foundation for the high-quality development of both macro-economies and micro-enterprises (Yahya and Lee, 2023; Sawyer, 2013; Van Treeck, 2009; French et al., 2011; Van der Zwan, 2014).

Financialization becomes apparent on a macro level when the financial industry's economic gains increasingly represent a significant portion of total social income (Jiang et al., 2023). This is often accompanied by the growth in both scale and number of non-bank financial intermediaries, including securities institutions, insurance providers, and trust institutions. Financialization contributes to the efficient allocation of resources, as a higher degree of financialization expands the array of options available to savers and investors, ensuring that capital is channeled towards areas of greatest need. Furthermore, financialization introduces a diverse range of financial instruments, such as stocks, bonds, and futures, which enable risk diversification and management, ultimately enhancing economic stability. Additionally, the globalized nature of financial markets and international capital mobility simplifies the process of companies raising funds and expanding their markets, which strengthens international trade ties and contributes to global economic growth (Petry, 2020).

At the micro level, financialization is evident in the growing participation of non-financial enterprises in the realm of finance. These enterprises frequently engage in financial investments and actively conduct financial business activities. Currently, the active involvement of companies in financial activities has become a prevailing

trend in society (Rabinovich, 2019). Financialization equips enterprises with increased opportunities for financing and investment, enabling them to more effectively manage risks, stimulate innovation, and enhance their competitiveness (Davis, 2018; Tang and Zhang, 2019; Feng et al., 2022). Consequently, it fuels the growth and development of individual enterprises while contributing to the overall expansion of the economy.

Although the industrial revolution played a significant role in advancing human economic and societal progress, the prevailing approach that prioritized economic development resulted in significant resource depletion and environmental degradation ((Galbreath, 2019; Sinha et al., 2021)). This approach led to critical environmental challenges, such as energy shortages and rising global temperatures. The degradation of the ecological environment not only jeopardizes human health but also threatens social well-being and impedes the sustainable development of the social economy. Consequently, governments worldwide have begun to prioritize the protection and enhancement of the ecological environment. The United Nations Climate Summit in 2019 called on all countries to intensify their efforts to reduce emissions and promote green innovation. The Organisation for Economic Co-operation and Development (OECD), in its 2011 report titled "Sustainable Manufacturing and Green Innovation: Towards a Green Economy," highlighted the necessity of accelerating green innovation to facilitate the transition from the traditional economy to a green economy and to achieve sustainable development.

Green innovation encompasses a range of technological advancements, products, services, and business models intending to reduce resource consumption, minimize waste emissions, enhance resource utilization efficiency, and achieve a harmonious balance between economic growth and the ecological environment (Shahzad et al.,

2022). By introducing green technologies, products, and services, green innovation not only opens up new market opportunities but also stimulates investment in research and development as well as the production of sustainable solutions. This, in turn, promotes the growth of emerging industries, generates employment prospects, and drives economic expansion (Luo et al., 2019). Furthermore, green innovation contributes to improved resource utilization efficiency, reduced reliance on fossil fuels, enhanced energy supply reliability, and mitigated impacts of energy price fluctuations on the macroeconomy (Chien et al., 2022; Zhang and Fujimori, 2020). These aspects hold great significance for the overall sustainable development of society.

For businesses, green innovation enables the development of environmentally friendly raw materials or products, adding value to their offerings and capturing a share of the green product market (Chin et al., 2022). Simultaneously, companies can enhance their process efficiency through green innovation, curbing resource wastage and improving overall resource utilization. This reduces the generation and emission of harmful substances, mitigating the adverse environmental impacts of their products and reduce excessive reliance on resource consumption (Xu et al., 2023; Chen et al., 2022). Furthermore, businesses can attain a win-win scenario by engaging in green innovation, which reconciles economic development with environmental improvement, paves the way for establishing a positive green image, and enhances the company's sustainable competitive advantage (Liu and Kong, 2021; Tseng et al, 2017; Afeltra et al., 2023).

1.2 Background of Study

1.2.1 Digital Transformation

From Figure 1.1, it's evident that China's digital economy experienced remarkable growth between 2010 and 2020, surging from \$1.27 trillion to \$5.42 trillion. This remarkable expansion was accompanied by an average annual growth rate of about 42.67%, far surpassing the GDP growth rate during the same period. The digital economy's rapid development and the substantial momentum it generated significantly drove China's digital transformation. In 2022, the Chinese government underscored the imperative to accelerate digital transformation, foster deeper integration between the digital economy and the real economy, and establish internationally competitive digital industry clusters. The "Outline of the Fourteenth Five-Year Plan for the National Economic and Social Development of the People's Republic of China and the Vision for 2035" dedicates a dedicated chapter to the digital economy, explicitly highlighting the need to cultivate new advantages in the digital economy. It emphasizes the importance of promoting the profound integration of digital technologies with the real economy, thus empowering the transformation and upgrading of traditional industries.

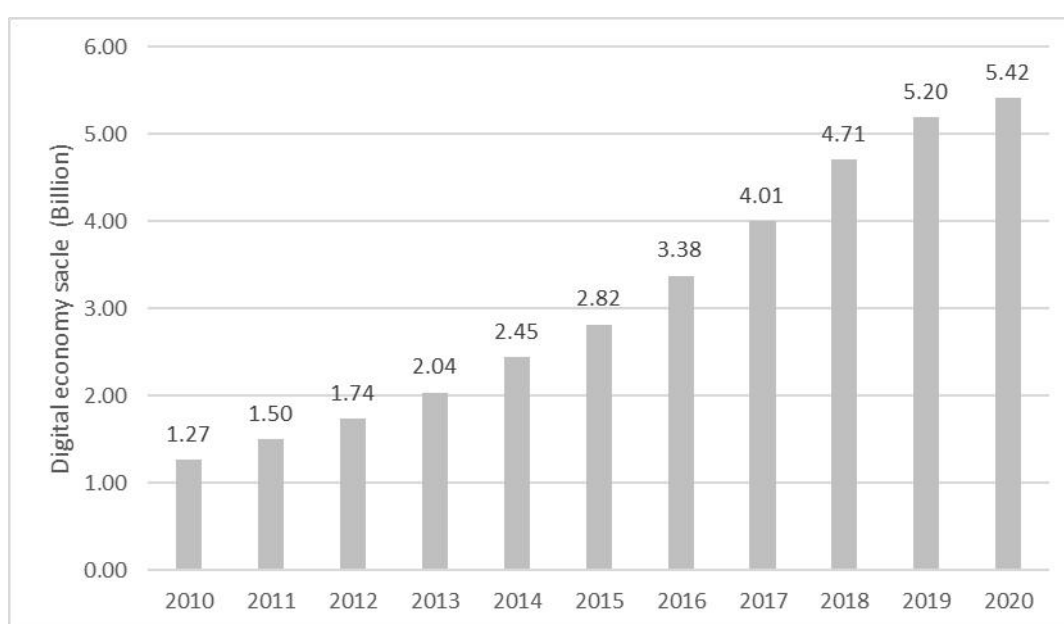


Figure 1.1: China Digital Economy Scale

Source: Wind Database (www.wind.com.cn)

Given that digital transformation has the potential to enhance human resource effectiveness (Zhong et al., 2023), reduce transaction costs in production (Umar et al., 2022; Ardolino et al., 2018), and elevate innovation levels (Galindo-Martín et al., 2019; Ardito et al., 2021), many countries are actively investing in the development of digital technology and intelligent manufacturing. This strategic focus aims to reshape the competitive advantages of their manufacturing sectors by achieving deep integration between digital technology and traditional manufacturing. This integration leverages next-generation information technology, including cloud computing, big data, the Internet of Things, emerging software, and intelligent hardware.

For instance, in 2010, the United States introduced the "Connecting America: The National Broadband Plan." In 2009, Japan launched the "i-Japan Strategy," while the United Kingdom proposed the "Digital Great Britain Action Plan" in the same year.

In 2015, the Chinese government unveiled the "Digital China Strategy," which recognizes digitization as the seventh factor of production, following labor, capital, land, knowledge, technology, and management (Liu, 2019). This strategy involves the gradual development of a national integrated big data center system, widespread deployment of 5G technology, and the promotion of digital transformation across various industries. As seen in Figure 1.2, China's digital transformation rate increased from 21.06% in 2010 to 36.47% in 2020.

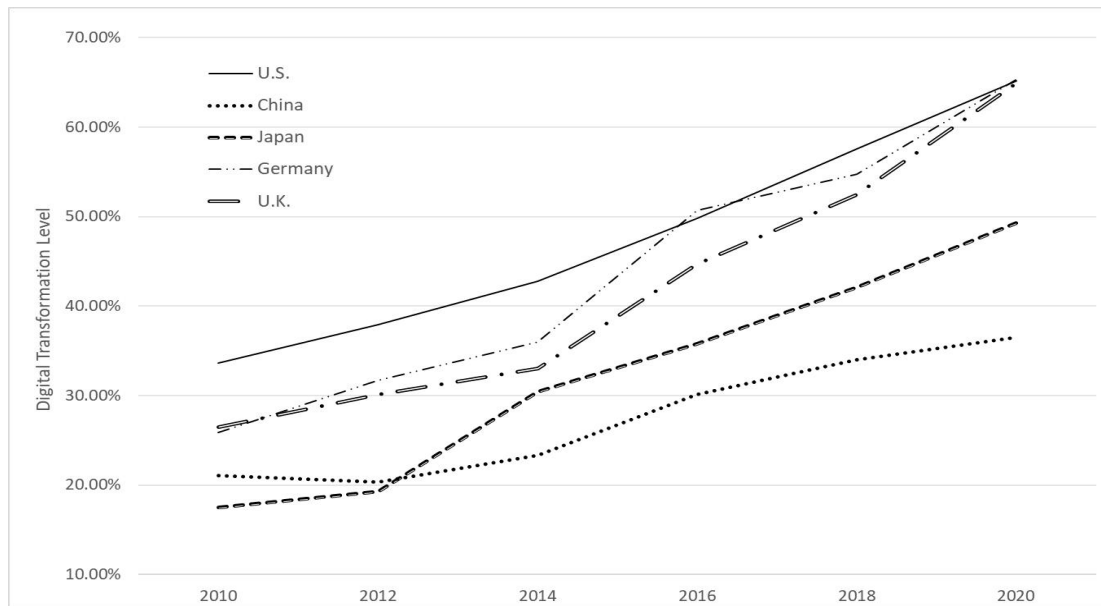


Figure 1.2: Digital transformation level of U.S., U.K., China, Japan and Germany
Source: Wind Database and IMF

1.2.2 Financialization

The high-quality development of both macroeconomics and micro-enterprises relies on financial support. As China's financial market-oriented reform progresses and its financial market undergoes rapid growth, the financial sector assumes an increasingly vital role in the economy. China's financial industry has witnessed significant expansion in scale, coupled with a consistent uptrend in financial returns. Figure 1.3 illustrates this growth, where the output value of China's financial industry surged from \$382.9 billion in 2010 to \$1244.3 billion in 2020, representing an average annual growth rate of 32.5%.

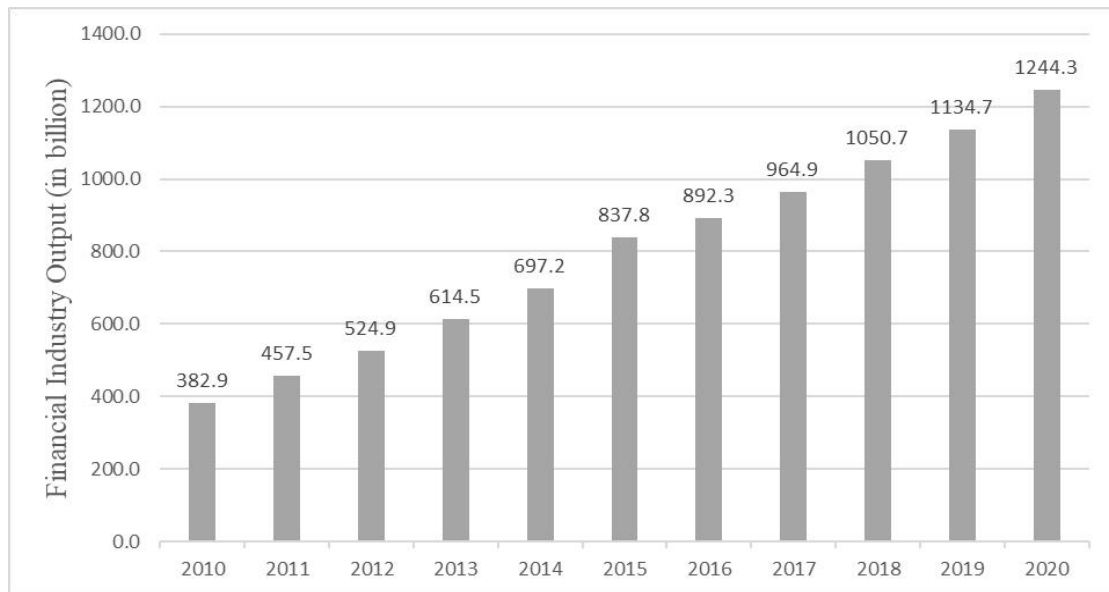


Figure 1.3: Financial Industry Output of China

Source: China National Bureau of Statistics

Financialization can be understood from both a macro and micro perspective. At the macro level, it involves the gradual expansion in the scale and influence of the financial industry. Alternatively, it can be viewed as the deepening connection between micro-level entities and the financial sector (Zhou and Li, 2023). The rapid growth of the financial industry and financial markets, while offering more convenient and diverse financing options for Chinese enterprises, has also led to an increasing number of companies allocating assets in the financial market. This phenomenon is referred to as corporate financialization (Orhangazi, 2008).

In recognition of the advantages associated with financialization, such as improve capital resource allocation efficiency (Davis, 2018), alleviate financing constraint (Liu et al., 2018), simulate market profits and promote integration of industrial capital and financial capital (Sheng et al., 2018), the Chinese government has introduced a series of policies aimed at facilitating its sound development. The "Enterprise Internal Control Application Guidelines" issued in 2010, outlined that companies can engage in high-risk investments, such as stock investments or derivative financial products, while maintaining their focus on their core business

activities. These policies are designed to promote the responsible and strategic use of financial resources by enterprises. The "Supervisory Guidelines for Listed Companies" promulgated in 2012 introduced provisions that permitted listed companies to utilize idle raised funds for the acquisition of investment products characterized by high security and good liquidity. These investment products include fixed-income government bonds, bank wealth management products, and others. This change in regulations has played a significant role in augmenting the level of financialization among real enterprises, particularly since the year 2012. As evident from Figure 1.4, China's financialization degree has shown a notable upward trajectory in recent years, climbing from 4.68% in 2010 to 12.86% in 2020.

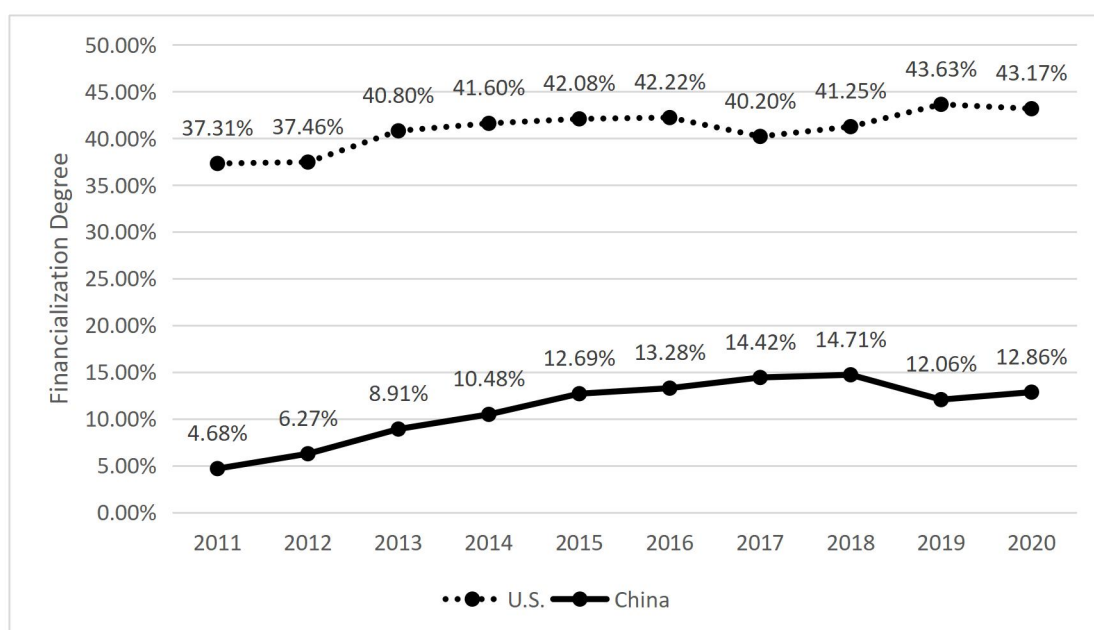


Figure 1.4: Financialization Degree of U.S. and China

Source: IMF

1.2.3 Green Innovation

China has achieved remarkable economic growth and social development; however, this progress has come at the cost of significant natural resource depletion and environmental degradation. The tension between economic development and environmental preservation has become increasingly evident (Sun et al., 2021).

In response to these challenges, the Chinese government has taken steps to prioritize environmental protection as a fundamental national policy. It has also committed to fulfilling its obligations under the Kyoto Protocol, with goals set to peak carbon emissions by 2030 and achieve carbon neutrality by 2060. Additionally, the *China 14th Five-Year Plan for National Economic and Social Development in 2020* outlined a comprehensive green transformation strategy for the economy and society. Over the next five years, China aims to reduce energy consumption and carbon dioxide emissions per unit of GDP by 13.5% and 18%, respectively, reflecting a commitment to sustainability and environmental responsibility.

Starting in 2010, the Chinese government has initiated a series of macro-control measures in the capital market. These efforts have included the development of green financial products, such as green credit and green securities. Furthermore, the government has mandated that listed companies disclose environmental protection information as part of their reporting requirements. These measures have had a multifaceted impact on the corporate landscape. On one hand, they compel listed companies to prioritize environmental protection issues in their operations, and on the other hand, they gradually steer these companies towards adopting more environmentally conscious practices. In this way, the government is guiding and encouraging green behaviors as an integral and unavoidable aspect of a company's development process.

When the enterprises follow the trend of green innovation, more customers and investors will be attracted for their growing reputation and brand image (Wu et al., 2023). Simultaneously, Green innovation can improve the firm's profitability because green technologies are generally more efficient than traditional technologies which can save resources utility (Rehman et al., 2021). In the current context, green

innovation is rapidly emerging as a strategy that can deliver a win-win scenario for both economic growth and environmental preservation (Awan et al., 2021). As demonstrated in Figure 1.5, China's Green Innovation per CO2 emissions has surged to 34.46 in 2020, marking a substantial 76.9% increase from the levels recorded in 2015.

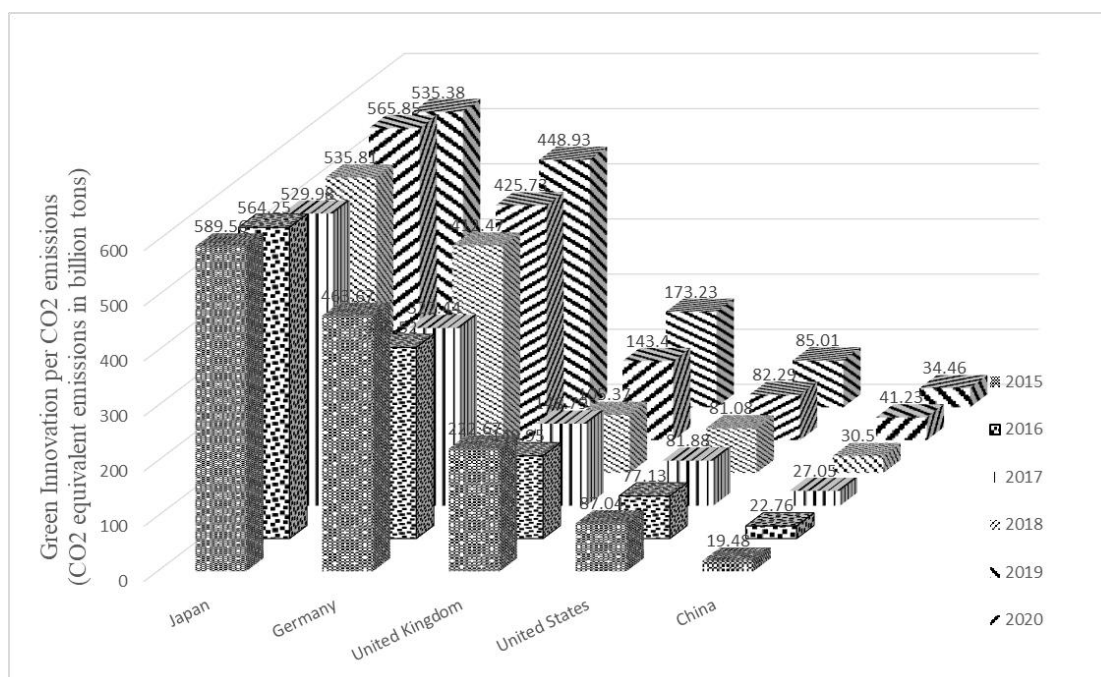


Figure 1.5: Green Innovation per CO2 Emissions

Source: WIPO statistics database and World Bank

1.2.4 Economic Policy

China's transition from a planned economy to a market-oriented socialist market economy has been marked by a unique process influenced by the country's political system. One notable characteristic of this transition is the rapid formulation and implementation of economic policies, particularly when compared to Western countries (Dreyer, 2018). In the aftermath of the 2008 financial crisis, the Chinese government implemented a series of economic policies to address the challenges posed by the crisis and to promote economic recovery and development, which includes the "4 trillion stimulus package", the "One Belt and One Road initiative

plan", and the "Internet Plus new business model". Collectively, these policies underscore China's dedication to economic transformation and upgrading, aimed at sustaining the country's momentum in sustainable development and economic growth (Han, 2021).

Enterprises are the bedrock of economic operations and social development. They play a pivotal role in the high-quality development of the economy. As the primary agents of social and economic activities, enterprises generate substantial economic value through capital investments, driving economic transformation. The decisions made by these enterprises are shaped not only by their internal circumstances but also by external policies. Economic policies, spanning areas like investment, trade, market regulation, social security, environmental stewardship, and market competition, can guide and influence corporate investing behaviors (Chugunov et al., 2021; Maradana et al., 2019; Liu et al., 2020; Ampah et. al., 2019; Zhao et. al., 2022).

Table 1.1 highlights significant economic policies implemented by the Chinese government in recent years. Notably, these policies focus on promoting investment in digital transformation, financialization, and green innovation. Moreover, while certain policies may not have these areas as their primary focus, they have indeed made significant contributions to advancing these domains. For instance, take the "Made in China 2025" initiative, introduced in 2016, which is designed to bolster China's manufacturing sector. In its implementation program, there is a clear push to expedite the integration of cutting-edge information technology and manufacturing techniques. Simultaneously, the program encourages the widespread adoption of green manufacturing practices and the enhancement of advanced energy-saving and environmentally friendly technologies within the manufacturing industry.

Table 1.1: List of Major Policies in China from 2010 to 2020

Field	Some Significant Policies
Digital Transformation	2020 "Special Action Plan for Digital Empowerment of Small and Medium-sized Enterprises"
	2020 "Digital Agriculture and Rural Development Plan (2019-2025)"
	2020 "Building Materials Industry Intelligent Manufacturing Digital Transformation Action Plan (2021-2023)"
	2018 "Guiding Opinions on Accelerating the Development of the Virtual Reality Industry"
	2018 "Guiding Opinions on Developing the Digital Economy to Stabilize and Expand Employment"
	2018 "Industrial Internet Development Action Plan (2018~2020)"
	2017 "New Generation Artificial Intelligence Development Plan"
	2017 "National Informatization Development Strategy Outline"
	2016 "Guiding Opinions on Promoting the Development of "Internet +" Smart Energy"
Financialization	2015 "Action Outline to Promote the Development of Big Data"
	2020 "Guiding Opinions on Strengthening the Supervision of Investment by Non-Financial Enterprises in Financial Institutions"
	2019 "Standardizing Matters Related to the Management of Cash Management Wealth Management Products (Draft for Comments)"
	2019 "Guidelines for Publicly Offered Securities Investment Funds to Participate in Refinancing Securities Lending Business (Trial)"
	2017 "Guiding Opinions on Financial Support for the Construction of a Manufacturing Power"
	2016 "Action Plan to Strengthen Information Sharing and Promote Cooperation between Industry and Finance"
	2016 "Several Opinions on Financial Support to Stabilize Industrial Growth, Adjust Structure and Increase Benefits"
	2014 "Guiding Opinions on Taking Multiple Measures to Effort to Alleviate the Problem of High Financing Costs of Enterprises"
	2012 "Supervisory Guidelines for Listed Companies No. 2 - Supervisory Requirements for the Management and Use of Funds Raised by Listed Companies"
	2010 Enterprise Internal Control Application Guide No. 6 - Financial Activities

Table 1.1: Continued

Field	Some Significant Policies
Green Innovation	2020 "Opinions on Accelerating the Establishment of Green Production and Consumption Regulations and Policy Systems" 2020 "Green Travel Creation Action Plan" 2020 "Carbon Emissions Trading Management Measures (Trial)" 2018 "Environmental Protection Tax Law of the People's Republic of China" 2018 "Technical Guidelines for Agricultural Green Development (2018-2030)" 2017 "Comprehensive Work Plan for Energy Conservation and Emission Reduction during the 13th Five-Year Plan" 2016 "Energy Saving and New Energy Vehicle Industry Development Plan (2014-2020)" 2016 "Industrial Green Development Plan 2016-2020" 2016 "Guiding Opinions on Building a Green Financial System" 2016 "Guiding Opinions on Promoting the Development of "Internet+" Smart Energy" 2015 "Overall Plan for Ecological Civilization System Reform"
Other Fields	2020 "Guidelines for the Public Offering of Infrastructure Securities Investment Funds (Trial)" 2020 Notice on Preferential Income Tax Policies for Venture Capital Enterprises 2019 Government Investment Regulations 2019 "Opinions on Promoting the Development of Elderly Care Services" 2019 "Opinions on Strengthening Intellectual Property Protection" 2018 "Notice on Rectifying Banking Market Chaos on Further Deepening Rectification of Banking Market Chaos" 2016 "Vision and Actions on Promoting the Joint Construction of the Silk Road Economic Belt and the 21st Century Maritime Silk Road" 2015 "Made in China 2025 Plan"

Source: State Council Policy Documents Database of China

Consequently, this policy has not only led to the growth of the manufacturing sector but has also directed companies' attention towards digital transformation and green innovation.

Additionally, the "Vision and Actions on Promoting the Joint Construction of the Silk Road Economic Belt and the 21st Century Maritime Silk Road," put forth in 2016, seeks to enhance international trade cooperation. This policy emphasizes the development of cross-border fiber-optic cables and other communication trunk network infrastructure while encouraging enterprises to engage in foreign financial investments for capital financing. Consequently, this policy actively promotes the digital transformation and financialization of enterprises. In light of these examples, it is evident that digital transformation, financialization, and green innovation have now become integral components of China's economic development. They serve as driving forces in transitioning China's economic growth from being merely high-speed to high-quality.

1.3 Problem Statement

Recognizing the vital role of the digital economy in economic development, China has actively pursued digital transformation. However, it's evident from Figure 1.2 that China's degree of digital transformation remains comparatively low. In 2020, China's digital transformation degree stands at 36.47%, which is notably lower than that of the United Kingdom, the United States, and Japan. For instance, China's degree of digital transformation lags behind the United States by 28.73 percentage points, with the United States recording a level of 65.20%. This indicates that there is significant room for further advancement in China's digital transformation efforts to

catch up with other leading nations.

Existing literature has extensively explored the impact of digital technology (Tsou et al., 2023; Qiang, 2021), executive information technology background (Liu et al., 2023), social insurance contributions (Xia et al., 2022), and infrastructure development (Qiu, 2022; Mao et al., 2022) on digital transformation. Some studies have suggested that specific economic policies, such as government subsidies (Zhang and Ma, 2023; Yu et al., 2022), tax incentives (Cao and Wu, 2023; Zeng, 2022), and intellectual property protection (Huang and Song, 2023; Zhou and Wu, 2022), may also play a role in facilitating digital transformation. However, there has been no previous research conducted to investigate the influence of economic policy on digital transformation.

Economic policy plays a significant role in shaping the behavior of individual enterprises at the microeconomic level. As a crucial signal for resource allocation, governments can facilitate the readiness of enterprises to embark on digital transformation through a range of economic policies. This includes measures like tax reductions and subsidies, the reinforcement of digital infrastructure development, and initiatives aimed at nurturing and educating talent in the field of digitalization. Such policies can serve as powerful incentives and enablers for businesses to pursue digital transformation and enhance their competitiveness in the digital economy. However, the existing policies are too broad and do not provide differentiated incentives based on enterprise characteristics to facilitate digital transformation. *Therefore, the first issue of this research is will economic policy affect corporate digital transformation?*

China has been actively elevating the role of finance in its economic development and embracing financialization as a means to facilitate economic

growth. However, it's evident from Figure 1.4 that China's financialization level remains comparatively low. In 2020, China's financialization trend reached 12.86%, which is significantly lower than that of the United States, where it stands at 43.17%. Even as the world's second-largest economy, China's level of financialization still has room for further improvement to better support economic development.

Current literature explores potential factors affecting investments in financial assets, including macroeconomic elements such as taxation policy (Li et al., 2023; Zhu et al., 2023) and monetary policy (Vidal, 2022), as well as microeconomic factors like management team stability (Liu and Xu, 2022), CEO background (Du et al., 2019; Liu and Zhou, 2022), customer concentration (Li et al., 2019), analysts following (He and Tian, 2013; Guo et al., 2019), business prospect (Rabinovich and Pérez, 2023; Goodell et al. (2021)), corporate social responsibility (Su et al., 2023), and corporate governance (Sun and Qi, 2022; Du and Wang, 2022; Qin et al., 2022). However, there has been limited research exploring the impact of economic policy on corporate financialization.

The Chinese government has actively promoted the development of financial technology by implementing policies that introduce new types of financial services. Concurrently, government has also continued to enact regulatory policies to oversee the healthy growth of the capital market. These combined efforts aim to provide enterprises with a wider array of investment and financing options, encouraging their active participation in financial investment activities. However, the existing policies are too broad and do not provide differentiated incentives to promote financialization based on enterprise characteristics. *Therefore, the second issue of this research is will economic policy affect corporate financialization?*

China has recognized the significant role of green innovation in achieving a

harmonious balance between economic development and ecological preservation and has subsequently increased its investment in green innovation. Nevertheless, given the substantial waste emissions in China, the level of green innovation in the country remains relatively low. As depicted in Figure 1.5, China's Green Innovation per CO₂ emissions in 2020 stands at 34.46, which is lower than that of the United Kingdom, the United States, and Japan. In fact, it's only 6.44% of Japan's level, indicating a need for further enhancements and advancements in China's green innovation efforts.

Many scholars have figured out the driving factors of corporate green innovation, such as executives green experience (Galbreath, 2019; Lu and Jiang, 2022), green subsidies (Li et al., 2020), environmental regulations (Cui et al., 2022), knowledge sharing (Song et al., 2020), green finance development (Zhou et al., 2020; Duchêne, 2020, Sinha et al., 2021), and consumer pressure (Zhang and Zhu, 2019). However, few studies link overall economic policy with corporate green innovation.

The Chinese government has taken significant steps to address environmental concerns and promote sustainable practices among enterprises. This includes the development of environmental standards and regulations that mandate reductions in pollution and resource waste. Additionally, the government has implemented various policy measures to incentivize green innovation, such as financial subsidies and support for green finance initiatives. The creation of innovation demonstration zones further illustrates China's commitment to encouraging environmentally responsible practices and fostering green innovation among enterprises. However, the existing policies are too general and do not provide differentiated incentives based on enterprise characteristics and industries to promote green innovation. *Therefore, the third issue of this research is will economic policy affect corporate green innovation?*

1.4 Research Questions

From the illustration of the problem of this research, the main question is “Does economic policy affect corporate digital transformation, financialization and green innovation in China?”. Specifically, the sub-questions are as follow:

- I. What is the effect of economic policy on corporate digital transformation in China?
- II. What is the effect of economic policy on corporate financialization in China?
- III. What is the effect of economic policy on corporate green innovation in China?

1.5 Research Objectives

The objective of this research is to examine the effect of economic policy on corporate digital transformation, financialization and green innovation in China. Specifically, the objectives are as follows:

- I. To examine the effect of economic policy on corporate digital transformation in China.
- II. To examine the effect of economic policy on corporate financialization in China.
- III. To examine the effect of economic policy on corporate green innovation in China.

1.6 Scope of Study

This research concentrates on investigating the effect of economic policy on corporate digital transformation, corporate financialization and corporate green innovation in China. This research takes firms listed in Chinese A-market from 2010 to 2020 as setting to examine whether and how economic policy will affect corporate

digital transformation, corporate financialization and corporate green innovation for the following reasons.

First and foremost, China, as the largest emerging capital market, occupies an indispensable and pivotal position in the global economy. China's contribution to global economic growth has been steadily increasing, establishing China as a primary driver of the world economy. Simultaneously, China is profoundly transitioning from a centrally planned economic system to a market-based one. This transition is marked by distinctive features that differentiate it from developed economies. Consequently, many findings and insights derived from developed economies may not be directly applicable to the Chinese context. The Chinese market is notably influenced by the Chinese government through both formal and informal channels which makes the Chinese market an ideal setting for studying the impact of economic policy.

Secondly, the selection of listed companies as the research sample is highly representative. In China, listed companies span a wide array of industries, encompassing manufacturing, healthcare, textiles, retail, and various others. This diversity in industry representation enables this study to encompass companies from different sectors, facilitating an analysis of both the commonalities and disparities in corporate investment behaviors across diverse industrial contexts. Additionally, listed companies in China come in various sizes, ranging from small startups to large multinational corporations. This diversity in company size allows for an examination of investment behaviors across firms of varying scales and offers insights into how size influences investment strategies. Moreover, given the geographical dispersion of listed companies, businesses in different regions may encounter distinct market dynamics and competitive conditions. This geographic variation offers an

opportunity to investigate how market conditions impact corporate investment strategies in different parts of the country.

Thirdly, the choice of listed companies as the research sample is underpinned by the critical factor of data availability and reliability. Information pertaining to the financial and operational aspects of listed companies is typically subject to stringent regulatory requirements, enhancing its accessibility and verifiability. Listed companies are mandated to disclose a range of information, including financial statements and annual reports, in accordance with the "Administrative Measures for Disclosure of Information by Listed Companies." This regulatory framework ensures that such public information is readily accessible and can be cross-verified. Moreover, this information is often accessible through various channels, including stock exchange websites, regulatory authorities' platforms, and official company websites. This accessibility streamlines the data collection process, further bolstering the reliability of the data used for analysis.

1.7 Significance of Study

Theoretically, existing literature primarily delves into examining the impact of economic policy on corporate digital transformation, financialization, and green innovation from specific policy perspectives. These include subsidies policy (Zhang and Ma, 2023; Yu et al., 2022), tax policy (Cao and Wu, 2023; Zeng, 2022), and intellectual property policy (Huang and Song, 2023; Zhou and Wu, 2022) on digital transformation; Monetary policy (Jiang et al., 2023; Ma and Fan, 2019), capital market liberation policy (Liu and Ye, 2023; Petry 2020) and tax policy (Yan, 2023) on financialization; And industry policy (Lan, 2023), innovation policy (Sun, 2023),