Development, Reforms, and Challenges of Japan's Digital Economy

Jiandong Shi

https://doi.org/10.33542/VSS2024-2-3

Abstract

Japan's digital economy, the fourth largest globally, has undergone significant transformation. This article explores its development from early stages to the current digital era, highlighting advances in infrastructure and global trade contributions. Despite its progress, Japan faces challenges such as an aging population, digital talent shortages, and slow digital transformation. Recent government reforms under the Kishida administration aim to enhance competitiveness and bridge gaps with leading digital economies like the US and China. Continued investment and policy support are crucial for sustaining growth and addressing these challenges.

Keywords: *Japan, digital economy, digital transformation, ICT, policy reforms*

Introduction

Japan's digital economy, currently the fourth largest in the world, has been a driving force in shaping the nation's economic landscape. With a foundation dating back to the 1960s, Japan's journey in digital transformation has evolved through distinct phases, from the incubation of early digital tools to the widespread adoption of internet technology. Today, Japan’s advanced ICT infrastructure supports high levels of connectivity, from broadband penetration to mobile networks. However, despite these advancements, Japan encounters significant challenges such as an aging population, digital skills shortages, and comparatively slower adoption of transformative technologies like 5G. These issues hinder its ability to compete with digital frontrunners such as the United States and China.

Under the Kishida administration, Japan has introduced substantial policy reforms, including the ambitious "Digital Garden City Nation Concept," aimed at promoting digital innovation across all sectors. This article examines Japan’s digital economy from its inception to the present day, focusing on its development trajectory, the impacts of government policies, and the major barriers to its progress. It provides insights into how Japan can leverage its strengths while addressing these challenges to enhance global competitiveness and sustain long-term economic growth.

1. Literature review

Japan's digital economy, ranking as the fourth largest globally, has experienced substantial growth over several key phases: an initial "incubation phase" in the 1960s, a "development phase" in the 1980s driven by corporate intranets and digital technology, and an "acceleration phase" starting in the 1990s with widespread internet and communication technologies. Since then, Japan's digital economy has expanded significantly in parallel with advancements in information and communication technology (ICT), promoting comprehensive digitalization across industries and society. Despite these advancements, Japan faces persistent challenges in its digital transformation, including a rapidly aging population, a shortage of skilled digital professionals, and relatively slow progress in digital transformation within both corporate and governmental sectors. These challenges place Japan behind global digital leaders such as the United States and China, even though Japan maintains an advanced ICT infrastructure, including high fixed and mobile broadband connection rates. To address these limitations, the government has introduced substantial reforms, most notably the "Digital Garden City Nation Concept" under the Kishida administration, which aims to utilize digital solutions to tackle socioeconomic challenges, particularly in rural areas. Japan's digital economy currently holds a crucial role in driving GDP growth and economic output; however, slow adoption of technologies like 5G and a lack of investment in cutting-edge digital applications continue to restrict its competitiveness. Despite these hurdles, Japan's digital economy, deeply integrated with its industrial manufacturing sector, holds significant potential. With increased investment and reform, particularly in ICT infrastructure and digital talent development, Japan could leverage its digital economy to regain global competitiveness and potentially establish itself as a leader in digital transformation in the coming years (Cabinet Office of Japan, 2021; IMD, 2022; Japan Center for Economic Research, 2021; Ministry of Internal Affairs and Communications, 2022; Mio & Kang, 2022; Nakano, 2021; OECD, 2019; Statistics Bureau of Japan, 2022; UNCTAD, 2021; World Bank, 2022; American Chamber of Commerce in Japan & McKinsey, 2021; China Academy of Information and Communications Technology, 2020; McKinsey Global Institute, 2020; Japan Cabinet Office, 2020).

2. The development history of Japan's digital economy

Incubation Phase (Before 1979)

The concept of the digital economy was first proposed in 1996 and has since been widely adopted. However, the world's first general-purpose electronic computer, ENIAC, appeared in 1946. Over the following two to three decades, people began to store various types of information using binary form. Before this, digital information was stored by a small number of people using tools. The storage capacity was small, and the analysis tools were complex, so it had not yet become a factor of production. However, the binary form of

information storage during this period laid the foundation for the formation and development of the digital economy. Subsequently, the expansion of information storage and the development of computing carriers facilitated the significant progress of the digital economy. During this stage, major universities and national research institutions in Japan began using computers for research applications, creating the groundwork for Japan's subsequent digital development.

Development Phase (1979-1993)

After the late 1960s, digital information began to be used as a production factor in economic activities, indicating that the digital economy had entered a new stage. Along with the construction of intranets for large enterprises and the development of specialized data software (such as CRM, ERP, and EDI), the efficiency of corporate production activities significantly increased. Economic activities during this phase were characterized by clear divisions of labor and well-defined structures, reducing transaction costs through the establishment of external boundaries and division of work. Japan officially introduced mobile communication systems in 1979, marking the country's experience with the 1G era. During Japan's 1G era, communication methods used analog signals, with a maximum download speed of 2.4-10 kbps. At this time, the proportion of people using communication devices was small, primarily consisting of communication equipment companies and related professionals, who mainly used fixed telephones for information exchange and transmission. The development and construction of communication infrastructure during this phase laid the foundation for the subsequent network era. The development during this phase expanded the scope of economic activities, enabled real-time dynamic transmission of demand information, fostered demand-oriented production methods, altered traditional supply chain structures, and further blurred the boundaries between production and consumption.

Acceleration Phase (1993-Present)

In 1993, Japan gradually transitioned from 1G infrastructure to the 2G era, changing the transmission mode from analog signals to digital forms. The acceleration of Japan's digital economy marked the beginning of the internet's transition to a digital stage. In addition to fixed telephones, the internet, feature phones, faxes, and other communication tools gradually gained market share. Download speeds increased from the original 2.4-10 kbps to 11.2-28.8 kbps, and the user base expanded to include ordinary households and personal communications. During the subsequent 4G and 5G periods, communication download speeds rapidly increased from 11.2-22.8 kbps to 0.04-1 Gbps in the 4G era. During this stage, feature phones gradually exited the market, replaced by smartphones and smart internet devices. From this stage onwards, digital information gradually leveraged its dynamic, replicable, and low-cost advantages. Digital information transformed traditional economic activities and fundamental rules through the internet, marking the entry of the digital economy into the

network stage.

Compared to earlier stages, this phase saw significant changes in the digital economy, with information and communication technology becoming the foundation for life, industry, and social communication. Globally, international enterprises operating across platforms, regions, and industries began to emerge, with internet-based digital production and services gradually increasing, leading to a flourishing of global digital trade. Currently, the construction of digital infrastructure based on the new generation of digital technologies is expanding, which will further enhance the value-added of networks and drive the digital network to the next stage of development.

3. Current state of Japan's digital economy

Japan's domestic digital infrastructure is relatively advanced, and the digital trade industry chain still holds significant advantages. According to a report by the Organisation for Economic Co-operation and Development (OECD), Japan leads OECD countries in mobile broadband connections, with a fiber optic connection rate of 77% for fixed broadband, ranking second among OECD countries in 2019. Japan's manufacturing robot density is second only to South Korea, with 47% of enterprises using cloud computing services. In 2021, Japan's internet penetration rate reached as high as 93%. Technologically, Japan held about 50% of the global semiconductor industry chain in the 20th century. Although this has fallen to around 10%, Japan still maintains a leading position in wafers, high-end chemicals, and manufacturing equipment within the semiconductor supply chain.

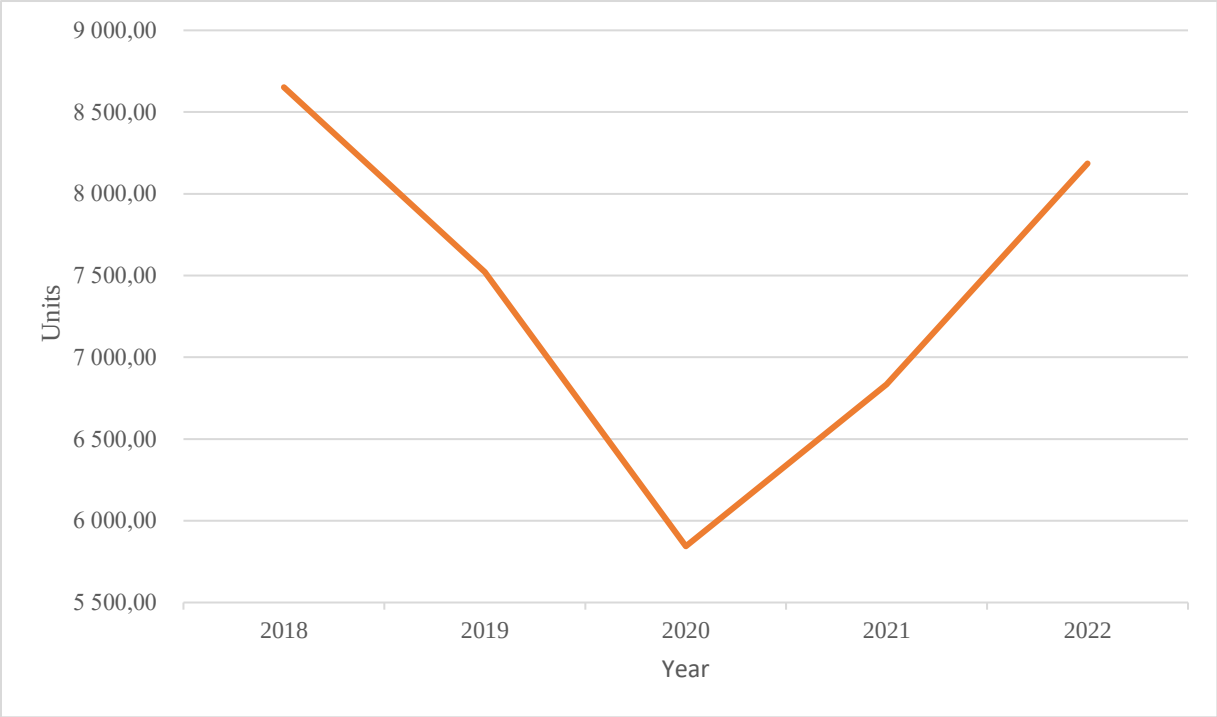

Figure 1: 2018-2022 Industrial Robot Installations in Japan's Metal and Machinery Manufacturing

Source: own compilation based on data from the International Federation of Robotics

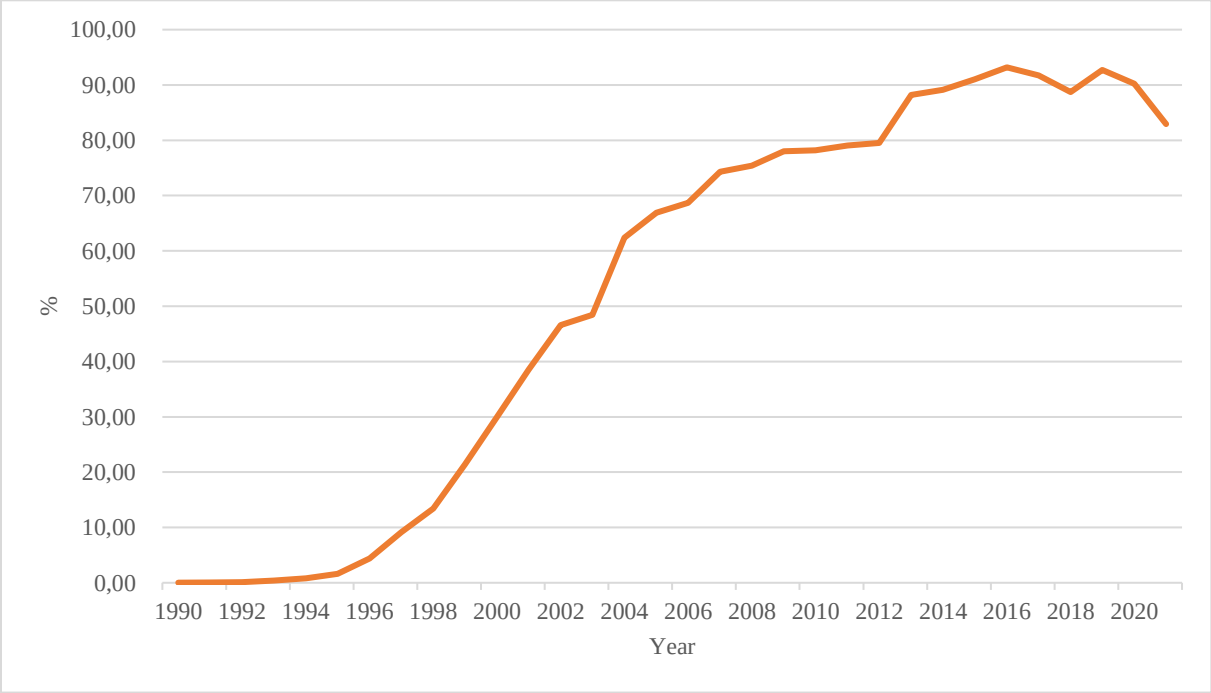

Figure 2：1990 to 2020 the Proportion of Individual Internet Users to Total Population in Japan

Source: own compilation based on data from the World Bank

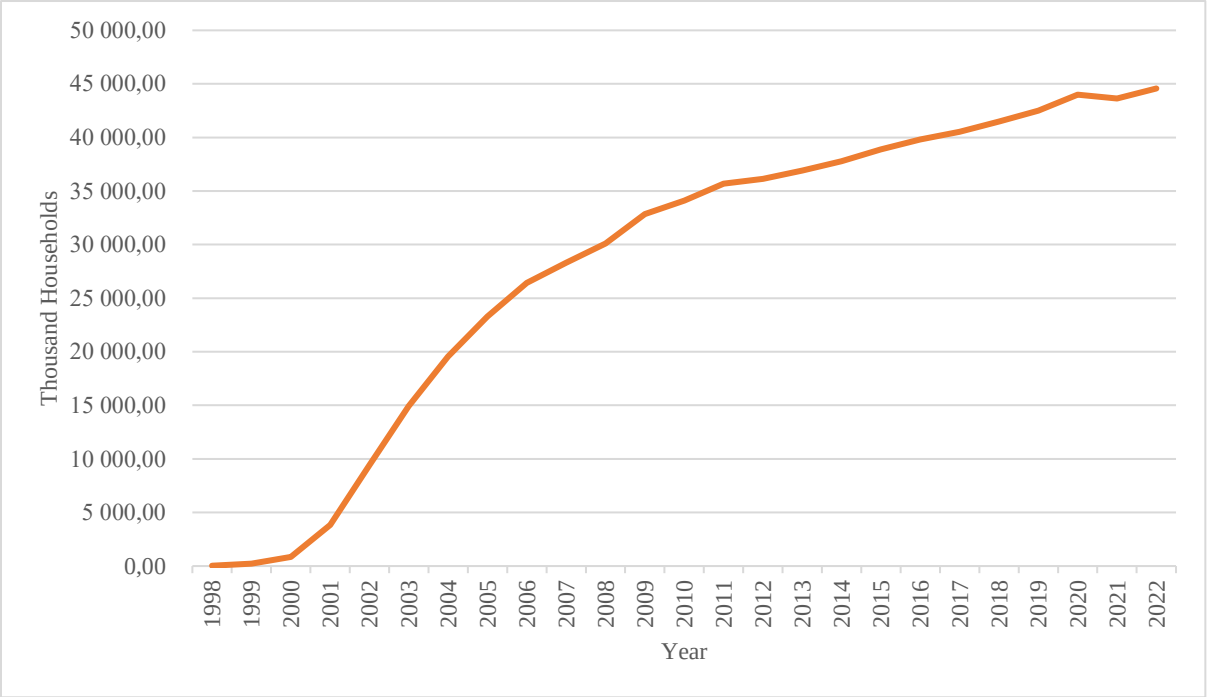

Figure 3: 1988-2022Number of Fixed Broadband Subscribers in Japan

Source: own compilation based on data from the World Bank

The competitiveness and development speed of Japan's digital economy lag behind those of China and the United States, mainly due to factors such as Japanese consumer preferences, corporate culture, and management structures. According to data from the United Nations Conference on Trade and Development (UNCTAD), in 2021, Japan's exports of ICT goods, services trade, and digitally deliverable services trade were $65.2 billion, $10.2 billion, and $122.3 billion, respectively, far below those of China and the United States. In the 2022 IMD World Digital Competitiveness Ranking published by the IMD in Lausanne, Switzerland, Japan ranked 29th, down two places from 2020. During the same period, China and the United States ranked 17th and 2nd, respectively. In terms of the share of ICT goods in merchandise exports, Japan was at 8.6% in 2021, while China and the United States were at 25.5% and 9.1%, respectively. Japan's digitally deliverable services trade was three times that of China in 2005, but has been lower than China since 2017, indicating that Japanese companies have been relatively slow in adopting digital technologies. In 2021, Japan's share of global exports of digitally deliverable services was 3.2%, while China and the United States were at 5.1% and 16.1%, respectively. A McKinsey report shows that Japanese residents' usage rates for online retail and financial services are only in the single digits, and the proportion of public cloud service spending in IT spending is very low. From 1995 to 2020, Japanese companies' ICT investment spending remained largely unchanged, while during the same period, ICT investment spending by companies in the United States and France tripled. The aging of management in Japanese companies is a significant reason for the slowdown in investment.

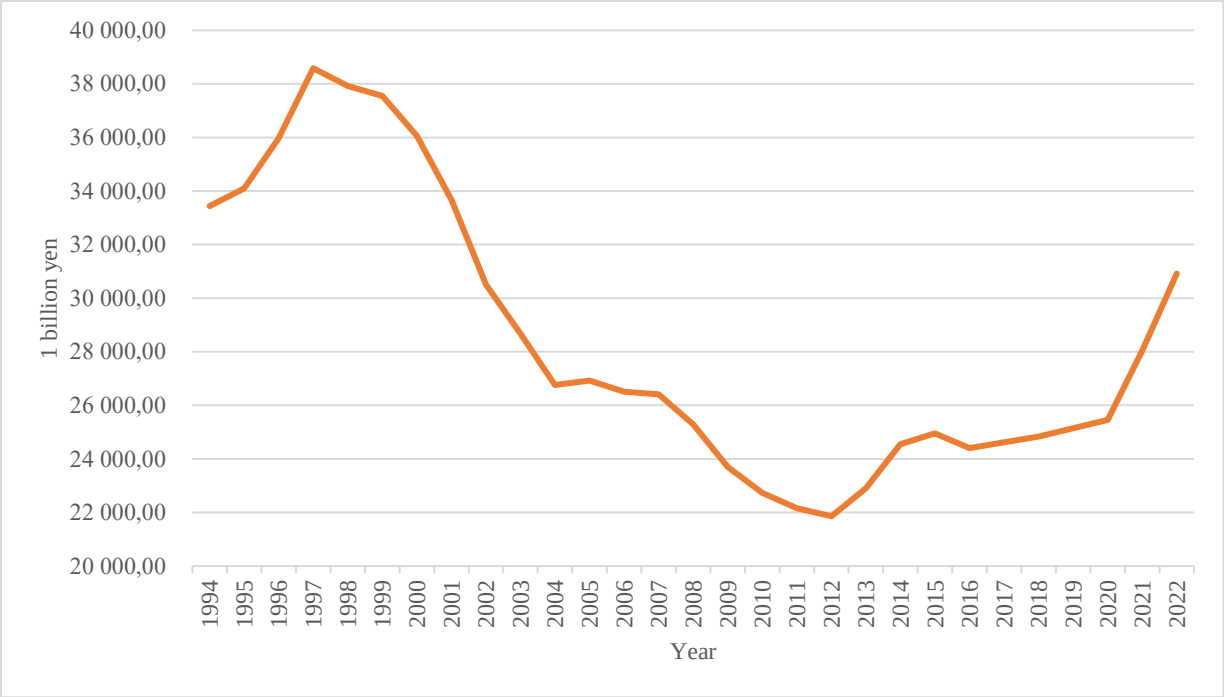

Figure 4: Machinery and ICT Equipment in Japan's National Balance sheet for Non-Financial Productive Fixed Assets 1994-2022

Source: own compilation based on data from the Cabinet Office of Japan

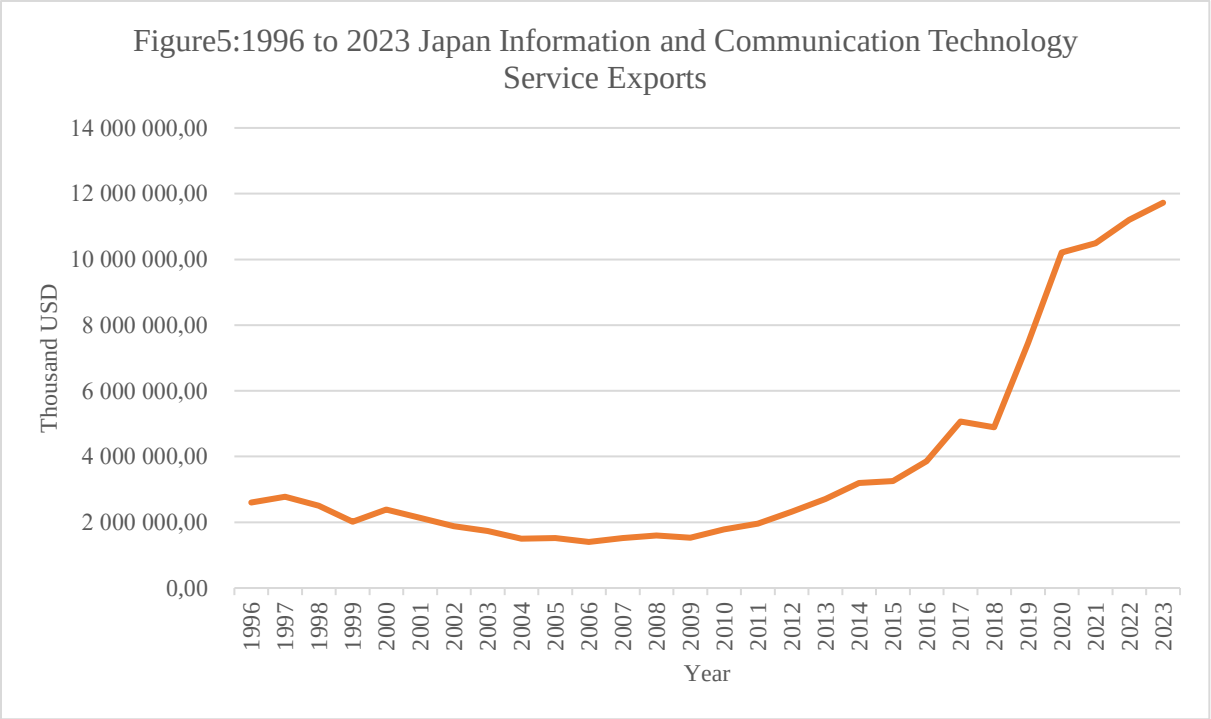

Figure 5: 1966 to 2023 Japan Information and Communication Technology Service Exports

Source: own compilation based on data from the World Bank

The digital transformation of the Japanese government and companies is lagging, and there is a lack of leading digital enterprises. The global COVID-19 pandemic further exposed the shortcomings in the digital transformation of the Japanese government and regulatory mechanisms, such as manual case counting by government departments and heavy reliance on paper documents for administrative procedures. Data shows that during the pandemic, the growth rate of digital services usage in Japan, such as online entertainment at home, food delivery, online meetings, and remote education, was even lower than in India. In terms of leading digital enterprises, Japan lacks digital giants capable of competing with Google's, Apple's, Facebook's, and Amazon's of the US, and Baidu's, Alibaba's, and Tencent's of China. The digital transformation of its traditionally strong industries has been slow. However, Japan's digital trade has enormous potential. A report jointly written by the American Chamber of Commerce in Japan (ACCJ) and McKinsey (2021) pointed out that if the Japanese government is determined to implement comprehensive and robust digital reforms, and promote digital transformation of Japanese companies, it still has the opportunity to leverage digital technology to maintain its inherent advantages and enhance global competitiveness. It is estimated that in 2017, Japan's digital trade-related national economic output was 12 trillion yen (110 billion USD), accounting for approximately 2.2% of Japan's GDP. The impact covers major industries, with channels of influence including productivity improvement, cost reduction, and the creation of new revenue sources. By 2030, the economic impact of Japan's digital trade is expected to increase to 57 trillion yen (506 billion USD). In 2017, Japan's exports of digital-related products and services were approximately 1.9 trillion yen (17 billion USD), accounting for 2.6% of Japan's total exports, equivalent to Japan's ninth-largest export industry. By 2030, exports are expected to grow to 8.8 trillion yen (79 billion USD).

4. Digital transformation

On one hand, the Japanese government has prioritized policies supporting the development of the digital economy as a core aspect of its governance. In September 2021, the Digital Agency was officially established. This new institution is seen as a powerful integrated digital coordination center and a central institution for formulating digital economy strategies. Its functions include formulating basic guidelines for digital strategy, overseeing national information systems, and connecting local public body information systems. The Digital Agency is directly under the Cabinet, with the Prime Minister as its highest leader. This indicates that the Kishida administration has elevated digital economy policies to a strategic level crucial to national development. While continuing to lead the implementation of related digital policies at the central level, the Kishida administration launched the "Digital Garden City Nation Concept" to invigorate local areas and connect the world. It aims to address local economic and social issues such as uneven population distribution and aging through digital

policies. Regular meetings of the "Digital Garden City Nation Concept" and the Digital Temporary Administrative Investigation Committee are held to promote local digital transformation, coordinate digital reform, regulatory reform, and administrative reform, and reduce regional disparities. The Kishida government intends to balance the digital transformation process between the central and local levels, using government policies to guide the widespread adoption of the "digital disruptive effect" throughout society.

On the other hand, the Japanese government has further increased budgetary support for investments in the digital economy and 5G infrastructure communication equipment. In November 2021, the Kishida administration released documents related to promoting "New Capitalism," proposing a "Science and Technology Nation" strategy, with a 10 trillion-yen investment fund for higher education institution reforms, focusing on digital, green, artificial intelligence, and quantum science fields. The Kishida administration emphasized the need to boldly invest in cutting-edge technology research and development in digital, green, artificial intelligence, and quantum science, and to promote private investment. This indicates that the Kishida administration views investment in the digital economy and related infrastructure as a "catalyst" for Japan's economic recovery, with increasing policy financial support for the digital economy. Based on this, the Kishida administration's investment in digital economy construction is "comprehensive," summarized as a series of digital projects or systematic policy initiatives aimed at improving overall economic efficiency and achieving structural economic changes in Japan, essentially triggering the "digital disruptive effect" in Japan's social and economic sectors. From this perspective, the Japanese government's investment in the digital economy and ICT-related infrastructure is expected to bring significant economic and social "positive spillover returns," and is anticipated to enhance production efficiency across industries and drive structural economic reform throughout society.

To overcome structural barriers in the development of the digital economy, the Japanese government has proposed a range of strategies, including substantial investments in 5G infrastructure and funding for digital technology research. Furthermore, the government has introduced tax incentives to accelerate corporate digital transformation, such as tax reductions for companies adopting cloud computing and artificial intelligence technologies. Additionally, a dedicated fund has been established to support digital skills training for employees, aiming to enhance the overall quality of the workforce. These initiatives are expected to strengthen corporate competitiveness and enable Japan to secure a larger share of the global digital market.

5. Challenges facing Japan's digital economy

Japan has a deeply aging population, with over 29% of its population aged 65 and above as of 2022.This not only increases the difficulty of empowering the elderly workforce

through the digital economy but also limits the labor supply for the digital economy. On one hand, empowering the workforce through the digital economy requires digital literacy and skills. However, as Japan's population continues to age, the elderly workforce often lags in skill and knowledge updates. Due to age limitations and the lack of experience in computer programming and data analysis in traditional occupations, the elderly workforce may have lower acceptance and mastery of new technologies. This makes it difficult for them to meet the demands of the digital economy and take on high-skill positions. Additionally, many of Japan's digital industries lack adequate measures to support aging, and the integration of the elderly into the digital economy faces issues such as the digital divide and slow adaptation. This results in the reemployment of the elderly workforce being insufficient to fill the gaps in Japan's labor market. On the other hand, the deep level of population aging in Japan poses challenges to the labor supply and quantity reserves needed for digital economy development. Population aging leads to structural changes, resulting in a large number of retirees in the labor market, squeezing out skilled elderly workers. Furthermore, Japan's low birth rate leads to insufficient reserves of young talent, exacerbating the shortage of digital talent in companies. According to the 2022 Information and Communications White Paper released by the Ministry of Internal Affairs and Communications, 68% of Japanese companies reported a shortage of digital talent, and over 30% stated a severe shortage of professionals in artificial intelligence and data analysis.

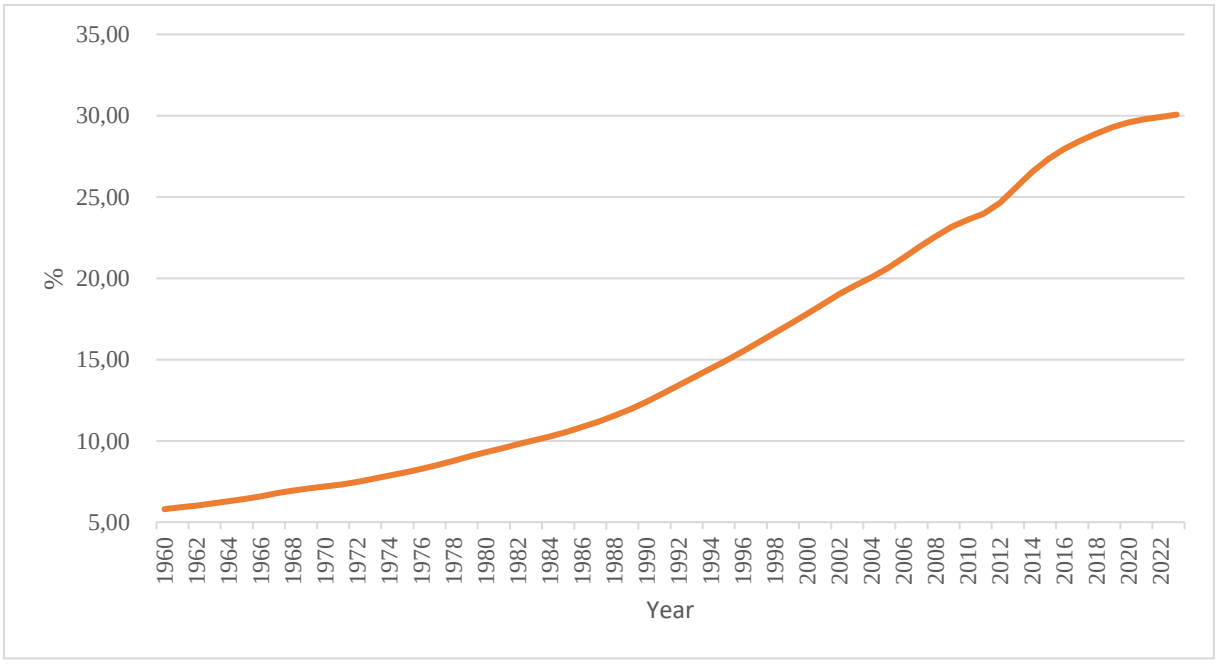

Figure 6: 1960-2022 Proportion of Population Aged 65 and over in Japan

Source: own compilation based on data from the World Bank

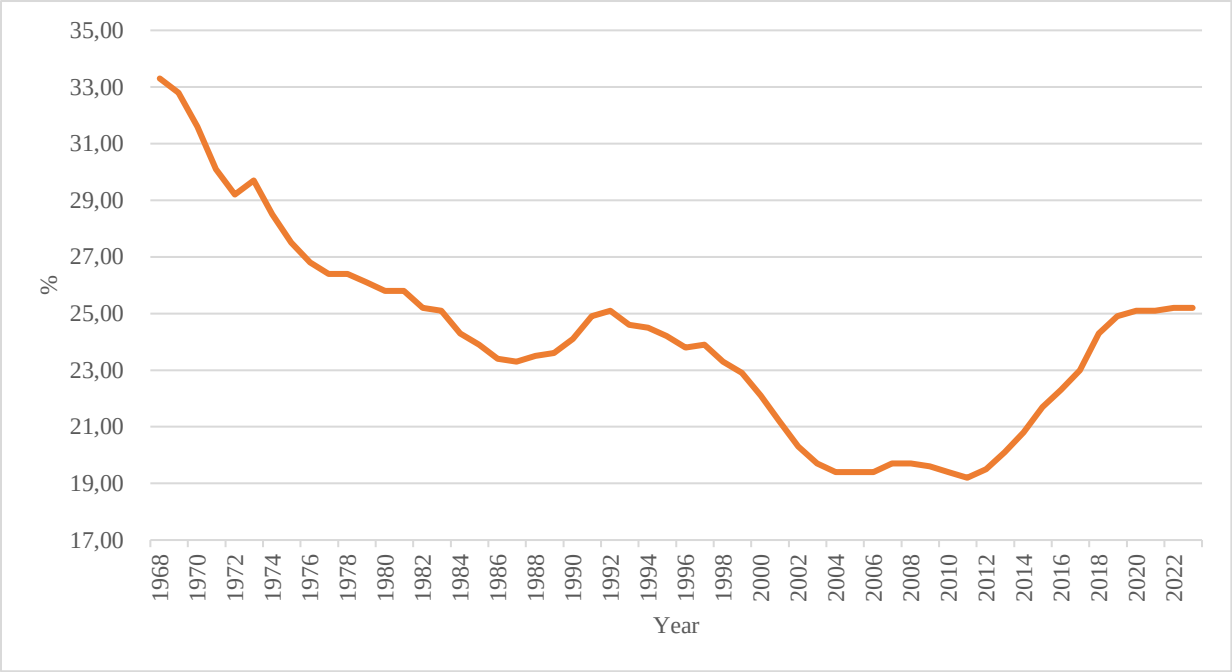

Figure 7: 1968-2022 Employment Rate of Population Aged 65 and over in Japan

Source: own compilation based on data from the Statistics Bureau of Japan

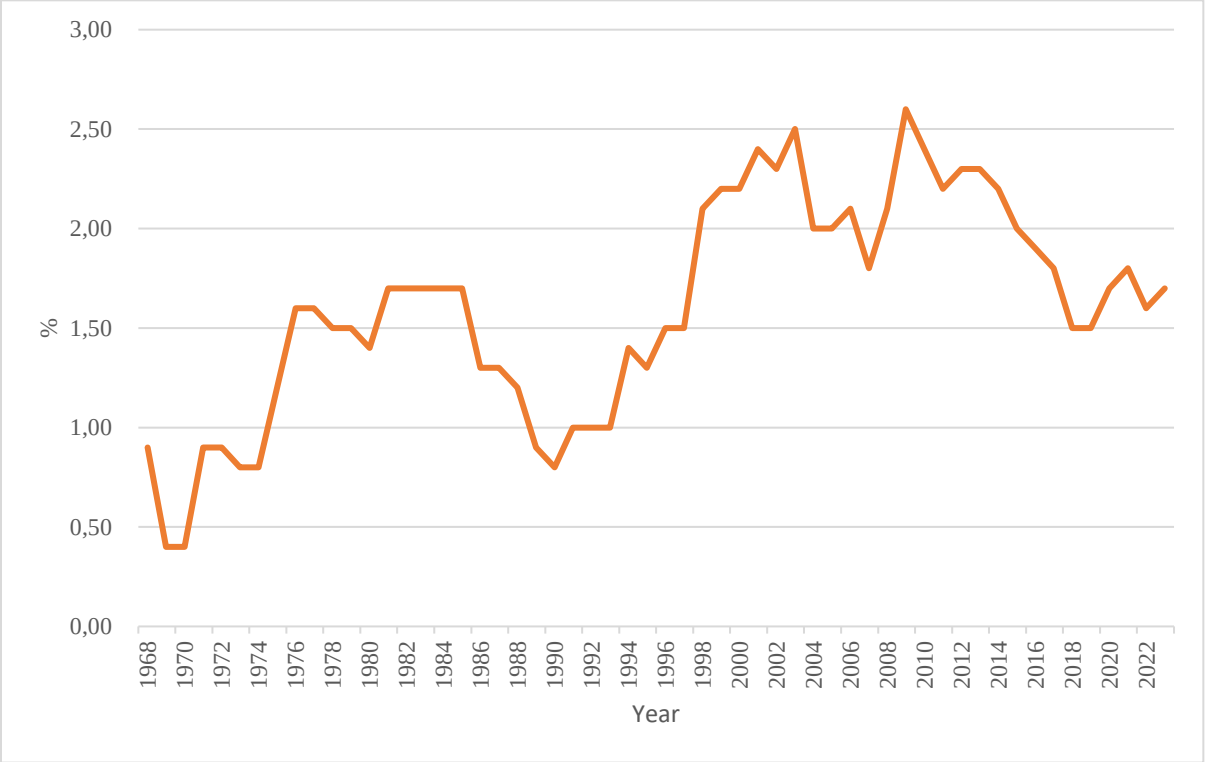

Figure 8: 1968-2022 Unemployment Rate of Population Aged 65 and over in Japan

Source: own compilation based on data from the Statistics Bureau of Japan

The Japanese government's digital economy policies also face uncertainties and challenges. Specifically, the first challenge is that the Kishida administration must sustain long-term governance for its digital economy policies to advance deeply. Second, the Japanese government's numerous large-scale fiscal and monetary stimulus policies during the pandemic may accelerate the "bubble" trend of the Japanese economy, potentially triggering a "stagflation" crisis, which could hinder the development of the real economy and digital industries. Third, uncertainties in the evolution of the international landscape and the geopolitical dilemmas in East Asia may also have more negative impacts on the development of Japan's digital economy. In summary, the Japanese government's governance cycle, domestic economic development trends, and international and regional geopolitical security issues could become obstacles to the deep advancement of Japan's digital economy policies. According to estimates by the Japan Center for Economic Research, Japan's nominal GDP per capita will be surpassed by South Korea in 2027, due to the slow pace of digitalization and stagnant labor productivity growth. The Japan Center for Economic Research believes that digital transformation is crucial for labor productivity growth, highlighting the urgency and necessity for the Japanese government to accelerate reforms in the digital economy and enhance policy support capabilities.

To address the challenges of an aging population and declining birth rates, the Japanese government introduced a series of policies in 2024, including increased childcare subsidies, extended paid parental leave, and the launch of the "Family Support and Work-Life Balance Initiative." These measures aim to alleviate the financial and logistical burdens of child-rearing, encouraging young individuals to marry and have children. Simultaneously, the government has sought to enhance childcare services and promote flexible employment models to enable greater workforce participation in the digital economy. The implementation of these policies is expected to expand Japan's labor supply in the future and inject renewed vitality into the country's digital economy.

Conclusion

Japan is the world's fourth-largest digital economy. According to estimates by the China Academy of Information and Communications Technology, from 2018 to 2020, Japan's digital economy exceeded $2 trillion and continued to grow, with the digital economy accounting for nearly 50% of GDP. Despite the long-term sluggishness of the Japanese economy, the digital economy has performed remarkably, becoming a significant driver of GDP growth. In terms of industrial digitalization, Japan relies on its highly developed industrial manufacturing sector, continuously deepening the integration and mutual promotion of digital technology and manufacturing, with industrial digitalization accounting for over 80%. In the area of 5G commercialization, Japan started the development and construction of 5G relatively late but

has been continuously strengthening policy support and increasing financial investment to accelerate its progress.

Japan's digital reform began in 2000, evolving from initially focusing on digital infrastructure construction to emphasizing information and communication technology applications, and now to the current stage of digital applications. Japan's economic digital reform has progressed from focusing on digital infrastructure reforms to a comprehensive digital reform strategy under the Kishida administration. The planning and implementation of Japan's digital reform in terms of digital technology innovation and digital economy development began during former Prime Minister Shinzo Abe's tenure. However, Abe's economic policy, "Abenomics," focused more on enhancing and revitalizing the economy through increased fiscal spending and eased financial regulations. The implementation of "Abenomics" did lead to economic growth and increased employment at one stage, but the "IT New Reform Strategy" and other digital technology innovation strategies mentioned in the "growth strategy" were not effectively promoted and implemented. This lack of thorough execution led to a slowdown in Japan's digital economy development after 2010, widening the gap with other countries in digital economic growth. The Kishida administration has fully recognized the importance and necessity of advancing digital reform in Japan. It is actively implementing digital economic reform measures across various fields, aiming for comprehensive planning, accelerated development, and thorough implementation of digital reforms. The goal is to narrow the digital gap with other countries, achieve world-leading digital capabilities, and enhance digital competitiveness.

Japan faces the challenges of declining birth rates, an aging population, and economic stagnation, while also contending with a shortage of digital technology human resources and intensified global competition for digital talent. Consequently, Japan's digital technology policies and digital economy strategies, including measures to develop digital infrastructure, have become crucial drivers of digital construction and transformation. According to the Ministry of Internal Affairs and Communications' "Survey on the Latest Trends in R&D and Digital Application of Information and Communication Technologies at Home and Abroad" (2022), 67.60% of respondents cited a lack of talent as a major challenge in promoting digital applications, a figure significantly higher than that of the United States, China, and Germany. This indicates a significant shortage of digital talent in Japan, necessitating measures such as training, recruitment, and updates to enhance the talent pool. Japan faces the challenges of declining birth rates, an aging population, and economic stagnation, while also contending with a shortage of digital technology human resources and intensified global competition for digital talent. Consequently, Japan's digital technology policies and digital economy strategies, including measures to develop digital infrastructure, have become crucial drivers of digital construction and transformation. According to the Ministry of Internal Affairs and

Communications' "Survey on the Latest Trends in R&D and Digital Application of Information and Communication Technologies at Home and Abroad" (2022), 67.60% of respondents cited a lack of talent as a major challenge in promoting digital applications, a figure significantly higher than that of the United States, China, and Germany. This indicates a significant shortage of digital talent in Japan, necessitating measures such as training, recruitment, and updates to enhance the talent pool.

Japan has formulated a comprehensive training plan for nurturing domestic digital talent. This plan starts with basic education in primary and secondary schools, introducing courses on programming and development to identify and further educate young students with digital talents. The plan includes improving ICT education environments, introducing digital remote courses, and offering various digital knowledge classes to ensure nationwide basic digital education, thereby laying a solid foundation for digital talent. At the university and graduate levels, various digital courses are introduced, and special scholarships are established to encourage in-depth research and exploration in the digital field. For young researchers, PhD students, and postdoctoral fellows, special research funds and living allowances are provided, along with post-graduation employment guidance to alleviate their concerns during their research. For working professionals, continuous learning courses are offered to help them enhance their skills even after employment. The plan promotes industry-academia-research collaboration, digital academic exchange activities, and the establishment of digital competitions. This comprehensive talent development plan covers all stages from basic education to university education and employment education, creating a fertile environment and providing more professional and effective stage-specific education for talent development.

References

American Chamber of Commerce in Japan & McKinsey & Company. *Japan Digital Agenda 2030*. Tokyo: McKinsey & Company, 2021. [Accessed: 2025-01-22]. Available at: https://www.accj.or.jp/japan-digital-agenda-2030

Cabinet Office of Japan.Annual Report on the Japanese Economy and Public Finance 2024: Toward a Vibrant New Economic Stage. Tokyo: Government of Japan, 2024. [Accessed: 2025-01-22]. Available at: https://www5.cao.go.jp/keizai3/whitepaper-e.html

IMD. World Digital Competitiveness Ranking 2022. Lausanne: International Institute for Management Development, 2022. [Accessed: 2025-01-22]. Available at: https://www.imd.org/centers/world-competitiveness-center/rankings/world-digital-competitiveness/

Japan Center for Economic Research.Japan's GDP and Digital Economy Analysis. Tokyo: JCER, 2021. [Accessed: 2025-01-22]. Available at: https://www.jcer.or.jp/english/japans-gdp-and-digital-economy-analysis

McKinsey Global Institute.*The Challenge of Digital Transformation in an Aging Society*. New York: McKinsey & Company, 2020. [Accessed: 2025-01-22]. Available at: https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/how-japan-can-make-digital-big-moves-to-drive-growth-and-productivity

Ministry of Internal Affairs and Communications of Japan. 2022. *White Paper on Information and Communications in Japan.* Tokyo: Ministry of Internal Affairs and Communications, 2022. [Accessed: 2025-01-22]. Available at: https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2022_outline.pdf

MIO, K., & KANG, J., 2022. Evolution of Japan's Digital Economy. *Asian Economic Journal*, vol. 36, no. 3, pp. 127–145. ISSN 1467-8381.

NAKANO, M., 2021. "The Role of ICT in Japan's Economic Development." *Journal of Technology and Society*, vol. 29, no. 1, pp. 58–70. ISSN 0973-0796.

OECD. *Japan's Digital Economy: Progress and Challenges*. Paris: Organisation for Economic Co-operation and Development, 2019. [Accessed: 2025-01-22]. Available at: https://www.oecd.org/digital/japan-digital-economy-progress-and-challenges.htm

Statistics Bureau of Japan. *Digital Economy and Labor Market Report*. Tokyo: Statistics Bureau of Japan, 2022. [Accessed: 2025-01-22]. Available at: https://www.stat.go.jp/english/data/report.html

UNCTAD. *Digital Economy Report 2021: Japan's Position in Global Digital Trade*. Geneva: United Nations Conference on Trade and Development, 2021. [Accessed: 2025-01-22]. Available at: https://unctad.org/webflyer/digital-economy-report-2021

World Bank. *ICT Investment and Digital Transformation in Japan*. Washington, D.C.: The World Bank, 2022. [Accessed: 2025-01-22]. Available at: https://data.worldbank.org/country/japan

World Bank. *Japan Data*. Washington, D.C.: The World Bank, 2022. [Accessed: 2025-01-22]. Available at: https://data.worldbank.org/country/japan

Contact address

Jiandong Shi, PhD
Researcher, Center for International Economy
Mathias Corvinus Collegium
3-7 Tas Vezer Street, Budapest, 1113, Hungary
E-mail: shijiandonge37upb@gmail.com