

# Social Challenges and Transportation Policy in the Early 2020s in Japan

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## 1. Social Challenges and Transportation Policy in Japan

In this paper, we review three issues concerning transportation policy in Japan from 2020 to 2025: labor shortages, the aging of social infrastructure, and decarbonization—all critical social challenges within the country.

The first issue is labor shortages due to population decline. Figure 1 shows the trend in job openings to applicants ratio in Japan from 1963 to 2024. This figure reveals labor shortages occurred in three distinct periods: the early 1970s, the late 1980s to early 1990s, and the late 2010s onwards. The shortage in the early 1970s occurred during high economic growth and in the late 1980s during the bubble economy period: the main cause of the shortage was increased labor demand driven by economic growth. In contrast, the labor shortage since the late 2010s is partly due to a decline in labor supply caused by a decrease in the working-age population resulting from a declining birthrate and aging society, presenting a different situation than before.

To see the changes in demographics, Figure 2 shows the population changes in G7

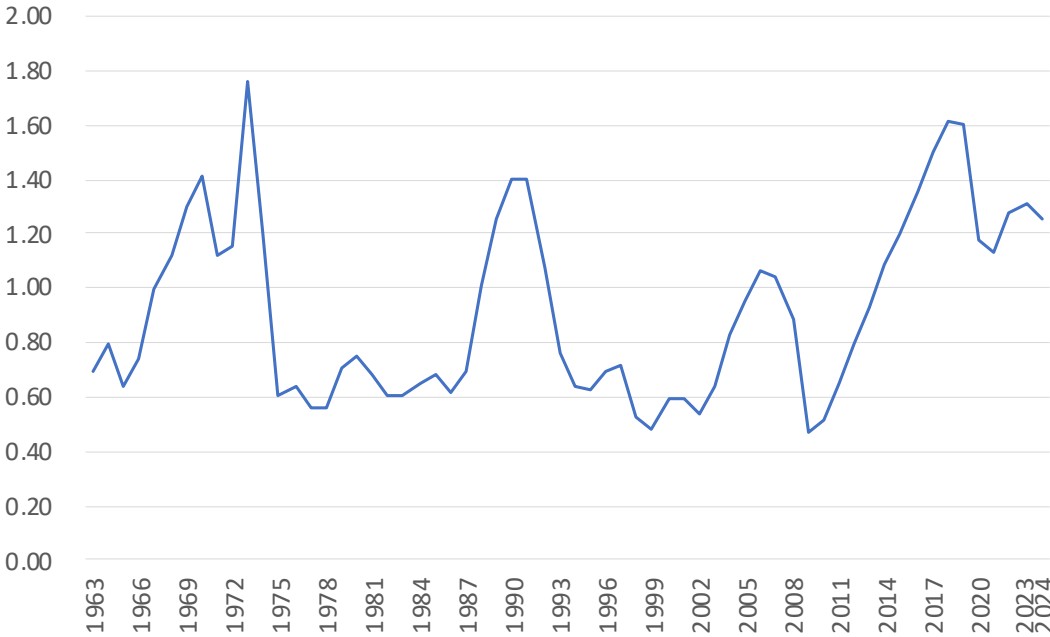


Figure 1. Trends in job-openings-to-applicants ratio in Japan from 1963 to 2024

Source: Annual Report of Local Government Finance Statistics.

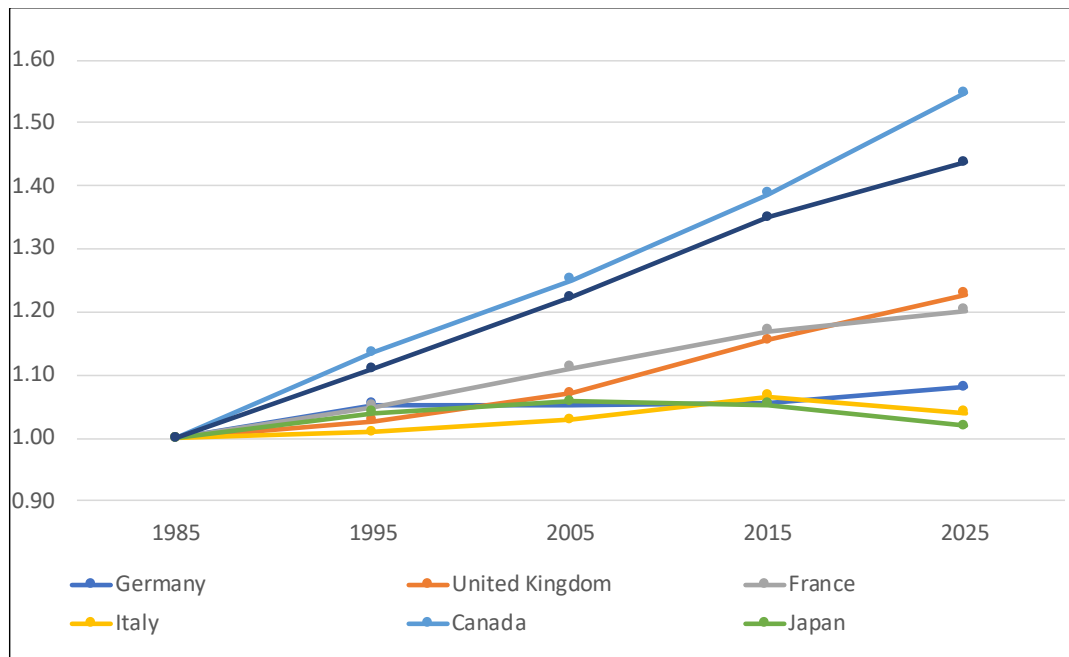


Figure 2. Population trends in G7 countries by decade (1985 = 1)

Source: Created by the author from the United Nations, World Population Prospects 2024.

countries from 1985 to 2025. This figure reveals that population decline is progressing in Italy and Japan. Especially in Japan, since its population peaked in 2008, the population has been rapidly decreasing due to low birth rates and aging. The total fertility rate has fallen to 1.15 (as of 2024) <sup>1</sup>, and the population of those aged 65 and over, which was 17.4% in 2000, has increased to 29.3% in 2024<sup>2</sup>.

The transportation industry is also suffering from a decline in young workers and an aging workforce. For instance, labor shortages are particularly severe in frontline roles such as railway maintenance workers, bus drivers, truck drivers, airport ground handling staff, and security inspectors. As senior workers retire and the influx of young workers further decreases, the shortage is expected to worsen across other occupations as well.

To address these issues, transportation operators are collaborating with other industries, investing to replace labor with capital, and attempting to develop new technologies. For example, in the railway sector, drones are being used for maintenance work to reduce manpower requirements and lessen the workload on workers. Also, road inspections, which previously relied on human skills like visual checks and tapping tests, are now beginning to use drones to collect information and AI to analyze it. In response to the shortage of truck drivers, demonstration tests using autonomous trucks for trunk line transportation have also been conducted. In June 2025, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) formulated its “DX Vision,” describing key areas where the application of DX should be strengthened within national land and transport policies, including transportation and transport infrastructure. It is necessary to introduce cutting-edge technologies across all transportation operations, pursue digital transformation (DX),

<sup>1</sup> Vital Statistics Monthly Report: Annual Total (Provisional)

<sup>2</sup> Annual Report on the Ageing Society

and enhance productivity.

The second issue is the aging of social infrastructure, which became a societal problem following the 2012 ceiling collapse accident in the Sasago Tunnel on the Chuo Expressway. In 2025, an accident occurred in Saitama Prefecture in which a road collapsed due to a burst sewer pipe, causing a truck to fall into the hole. In the United States, the deterioration of infrastructure built during the New Deal era in the 1970s and 1980s became particularly evident, leading to the benchmark of 50 years after construction as an indicator of infrastructure aging. Also in Japan, large amounts of infrastructure were concentrated in the period of high economic growth (late 1950s to mid-1970s), and its deterioration is considered severe. If this situation continues unaddressed, the proportion of social capital facing serious deterioration will increase further.

The third issue is decarbonization. In 2015, the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change was held, where the Paris Agreement was adopted. This agreement established a framework for climate change measures, including greenhouse gas emission reductions after 2020. Following the adoption of this agreement, countries worldwide are working toward decarbonization. In Japan, the Prime Minister declared in his 2020 policy speech the goal of achieving carbon neutrality by 2050. Furthermore, in 2025, Japan stated in its NDC (Nationally Determined Contribution) that it aims to reduce greenhouse gas emissions by 60% compared to 2013 levels by 2035. Against this backdrop, various initiatives are being implemented within domestic transportation policy to achieve decarbonization.

The composition of this paper is as follows. Chapter 2 discusses labor shortages, Chapter 3 describes the aging of social infrastructure, and Chapter 4 focuses on responses to decarbonization.

## 2. Transport and tourism policies to respond to labor shortages

The Japan Chamber of Commerce and Industry (JCCI) released the results of its survey, “Survey on labor shortages and the participation of diverse talent in September 2024”, examining the current state of labor shortages by industry<sup>3</sup>. According to the survey, the percentage of companies reporting labor shortages was high in the transportation and tourism sectors, with 83.8% in transportation and 72.7% in hotel and restaurant industries.

Therefore, we introduce transportation and tourism policies implemented from 2020 to 2025 to address labor shortages and describe the expansion of accepting foreign workers as one countermeasure.

First, we focus on the issue of labor shortages in the tourism industry. In addition to the inherent characteristics of the industry itself—such as few holidays and vacations, and irregular working hours—the severe working conditions involving long hours and low

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<sup>3</sup> The survey period was from July 8 to July 31, 2024. The number of responding companies was 2,392.

wages make it difficult to retain new workers.

In 2023, the Fourth Tourism Nation Promotion Basic Plan was released, setting tourism policy guidelines through 2025. The plan identified three key concepts: “sustainable tourism,” “increase in tourism consumption,” and “promote regional attractions.” Among these, the goal is to achieve sustainable development in tourist destinations to address issues like low wages and long working hours. In other words, by increasing the value-added ratio of the tourism industry, the aim is to improve working conditions for employees, such as raising wages. Since the tourism industry is an industry with a high ratio of intermediate inputs and significantly impacts other regional industries, it is crucial to expand consumption expenditure—the value of services received—and circulate the resulting revenue back into the “tourist destination” as a whole. Also in 2023, the Japan Tourism Agency released guidelines for developing tourism human resources (“Guidelines for Developing Tourism Human Resources in the Post-COVID Era: Toward Creating Sustainable Tourism Regions”).

Also, starting in the early 2020s, the capacity of some Japanese hub airports has been expanding and is scheduled to continue expanding through 2030. The background to this is population decline and aging, and the government has targeted attracting tourists from growing Asian countries as one of its economic revitalization measures. Airports are gateways for visitors to Japan and must reliably accommodate this demand. Consequently, airport development plans entered the implementation phase precisely during the 2020s. For example, construction of Naha Airport's second runway was completed in March 2020. In the same month, new flight paths began operation at Haneda Airport, increasing its international flight capacity by approximately 39,000 departures and arrivals annually. In March 2025, Fukuoka Airport commenced operations of its second runway. In the same month, coinciding with the Kansai/Osaka Expo, Kansai Airport also implemented flight path changes and modified runway operations, increasing its capacity. Furthermore, construction began at Narita Airport on extending the second runway and building a third runway, with the aim of commencing operations in 2029.

Next, we focus on the truck driver shortage. The severity of this shortage stems not only from Japanese demographic shifts but also from the accelerated growth of personal parcel deliveries driven by increased online shopping following the COVID-19 pandemic. Additionally, the introduction of the medium-sized vehicle license in 2007 tightened driver licensing requirements, prolonging driver training. The profession itself is also avoided due to long working hours and low wages.

To address these challenges, the “Inter-Ministerial Council on Innovation of Logistics in Japan,” chaired by the Chief Cabinet Secretary, was established in March 2023. In October of the same year, the government announced the “Emergency Logistics Innovation Package.” This package focuses on three key areas: (1) reviewing business practices, (2) improving logistics efficiency, and (3) changing the behavioral change among shippers and consumers.

(1) Reviewing Business Practices: To reduce truck drivers' total working hours, it includes measures such as coordinating between shippers, logistics operators, and consignees to cut waiting and loading/unloading times, and raising freight rates to increase truck drivers' wages<sup>4</sup>.

(2) Logistics Efficiency: Measures include promoting automation and mechanization of logistics facilities for carriers and shippers, advancing modal shifts from trucks to rail and ship transport, and introducing standardized pallet specifications.

(3) “Behavioral Change Among Shippers and Consumers”: Initiatives include efforts to halve redelivery rates for home deliveries and encouraging awareness reform and behavioral change among shippers and consumers through media and government communications.

As a measure to reduce working hours, limits on overtime work for truck drivers will be enforced from April 2024. Penalties have also been set, stipulating that employers violating the overtime cap (960 hours annually) could face up to six months imprisonment or a fine of up to 300,000 yen. Historically, drivers earned higher wages due to long working hours, which attracted some new workers. Increasing wages may therefore become a priority for employers.

Third, we will focus on the shortage of airport ground handling (GH) staff and aviation security inspectors and the measures to address these issues. IATA (2024) revealed that global aviation demand (measured in revenue passenger kilometers) in 2023 recovered to levels nearly similar to those before the COVID-19 pandemic in 2019. Domestic demand, in particular, performed well, exceeding 2019 levels by 3.9%. While global international demand, at 88.6% of 2019 levels, has recovered somewhat slower than domestic demand, it is keeping pace with the overall recovery in air travel demand. Accordingly, the number of international visitors to Japan is also showing a recovery trend.

Since border controls were relaxed in April 2023, the number of visitors to Japan has increased, partly due to the weak yen, reaching a record high of 36.87 million foreign visitors in 2024. The recovery in air travel demand also led to an increase in airport users, resulting in issues such as labor shortages for personnel engaged in airport operations like ground handling (GH) and security inspections. Foreign airlines handle approximately 75% of inbound visitors. However, when foreign airlines operate routes to Japanese airports, ground handling services are almost always contracted to subsidiaries of major Japanese airlines (ANA (All Nippon Airways) or JAL (Japan Airlines)) or specialized ground handling companies. During the pandemic, staff turnover increased, and the rapid recovery in visitor numbers outpaced efforts to hire replacement personnel.

In February 2023, the “Committee on Airport Operations for Sustainable Development” was organized to discuss countermeasures, and the committee’s interim

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<sup>4</sup> The Standard Freight Rate system was introduced in April 2020 as a reference indicator for trucking companies to calculate their appropriate freight rates and use in negotiations with shippers. In 2025, the Freight Transportation Business Act was revised, under which freight rates below “the fair costs”, defined by the government, are restricted and shippers are instructed to pay the rates.

summary was published in June. Six key points were identified as important perspectives for the industry's sustainable development: (1) Work Styles, (2) Responses for Demand Fluctuations, (3) Acceptance of Diverse Workforce, (4) Innovation, (5) Airport-Specific Responses Based on Perspectives 1-4, and (6) Collaboration Among Public and Private Stakeholders. The tasks and direction of efforts for each have been summarized.

In response to this interim summary, the Airport Ground Handling Association was formed as an industry group, and they are working to raise wages and improve working conditions. Results are already emerging, with wage levels showing an increase of about 20% compared to the previous year in a survey conducted at the beginning of fiscal year 2024. Another measure is the standardization of GH qualifications. ANA and JAL subsidiaries or affiliates handling GH operations have each created their own manuals and competed on service quality. GH operators have two GH teams within the same department, one for ANA and one for JAL. However, because their manuals differ, they cannot share personnel, leading to inefficient staffing. Therefore, from April 2024, when a single GH operator is contracted, a system will be introduced where internal qualifications are mutually recognized for certain ramp handling tasks. Standardizing qualifications is expected to shorten training periods, leading to more efficient workforce development.

Among airport staff, the shortage of security inspectors also became a bottleneck for attracting visitors to Japan. Partly due to resignations during the COVID-19 pandemic, the number of security inspectors had fallen to about 80% of pre-pandemic levels by 2023. While recruitment efforts are currently helping to restore staffing levels, securing a stable supply of security inspectors is essential in anticipation of future increases in inbound visitors. To secure sufficient recruitment numbers, efforts are underway to increase investment in recruitment activities. Initiatives include strengthening housing support to attract personnel from other regions. Additionally, improvements to the working environment are being implemented to reduce turnover rates. These include mitigating long working hours through shift pattern adjustments and enhancing employee benefits.

In Japan, except for company-managed airports (Narita Airport, Kansai Airport, and Chubu Airport) and privatized airports, airlines contract with security companies to conduct security inspections. The outsourcing fees are split equally between the government and the airlines, with the government's share covered by security fees. From March 2024, the airport security fee per passenger was raised from 105 yen to 250 yen at government-managed airports, joint-use airports, company-managed airports, privatized airports, and some regionally managed airports. This is expected to facilitate further increases in security inspectors' wages and the introduction of equipment that reduces the labor required.

Finally, we briefly discuss the expansion of accepting foreign workers as one measure to address labor shortages. The revised Immigration Control Act was passed and enacted in 2018, and from 2019, the Specified Skilled Worker Scheme commenced. This scheme aims to accept foreign workers with specific skills in industries where recruiting domestic workers would be difficult.

The acceptance of foreign workers had previously progressed under the Technical Intern Training Program (TITP) introduced in 1989. This program generally permitted stays of only three years and did not allow job changes. However, in recent years, as the need for foreign workers increased further, and incidents such as disappearances due to low wages became frequent, the program was reformed into the Employment for Skill Development and Specified Skilled Worker (SSW) Program, which requires payment of wages equivalent to those of Japanese workers. Applicants for the new program need not possess specific skills at the time of application, provided they have a minimum level of Japanese language ability. The program assumes that participants will acquire specific skills within three years and obtain the specific skills residence status. The TITP is scheduled to be abolished by 2027 and replaced by this new system.

In 2024, the automotive transportation industry (buses, taxis, trucks) was added to the list of designated industries eligible for the SSW program. Over the next five years, approximately 24,500 workers are expected to be accepted into the automotive transportation sector. This projected intake aims to alleviate labor shortages while preventing negative impacts on Japanese workers, such as wage reductions. It is expected to be adjusted based on future labor supply and demand trends. Furthermore, the Automobile Transportation Industry Specified Skills Council was established to assess and analyze this labor shortage situation.

The Specified Skills Assessment Test for the automobile transportation industry began in December 2024. By August 20, 2025, 3,493 individuals had taken the test, with 2,557 passing (a pass rate of 73%). For buses and taxis, new drivers undergo training and begin driving after completing the program, which lasts up to 12 months. For trucks, drivers begin driving after up to 6 months. While the severity of driver shortages varies by region, this system allows for job transfers, necessitating consideration of how to address inter-regional adjustment issues. Examining and coordinating countermeasures to avoid concentration in major metropolitan areas is also included in the activities of the council.

### 3. Transportation Policy Addressing Social Infrastructure Aging

Table 1 shows the percentage of transportation-related social infrastructure that has been in use for over 50 years, based on MLIT data. Generally, infrastructure tends to deteriorate significantly after 50 years of use. Table 1 indicates that the proportion of facilities exceeding 50 years of use will increase rapidly over the next 20 years. Figure 3 shows the results of inspections assessing the condition of bridges managed by local municipalities<sup>5</sup>. This figure shows that since 2018, when the first round of inspections

<sup>5</sup> Inspection results are indicated on a four-tier scale from I to IV. I indicates a healthy state with no impairment to the structure's function; II indicates a state where no impairment exists but measures are desirable from a preventive maintenance perspective; III indicates a state where impairment may occur and early measures are necessary; IV indicates a state where impairment has occurred or is highly likely to occur, requiring urgent measures.

concluded, countermeasures against deterioration have been implemented on bridges classified as Category III or IV, indicating particularly severe deterioration. However, many municipalities are experiencing a decline in civil engineering staff (civil engineers and architectural engineers) due to factors like declining birthrates and an aging population. Consequently, infrastructure deterioration continues to occur even while these countermeasures are being implemented. In the second round of inspections, which began in 2019, some bridges previously rated as Class I or II have now been reclassified as Class III or IV. Consequently, it is estimated that approximately 20 years will be required to complete all aging countermeasures.

Table 1. Percentage of transportation-related social infrastructure that has been in use for over 50 years

	March 2023	March 2030	March 2040
Road bridges: Approximately 730,000 bridges (with a length of 2 meters or more)	approx. 37%	approx. 54%	approx. 75%
Tunnels: Approximately 12,000 tunnels	approx. 25%	approx. 35%	approx. 52%
Port facilities: Approximately 62,000 facilities	approx. 27%	approx. 44%	approx. 68%

Note: The percentage of facilities over 50 years since construction excludes facilities with unknown construction years.  
 Source: MLIT Infrastructure Maintenance Information “Current Status and Future Projections of Social Capital”.

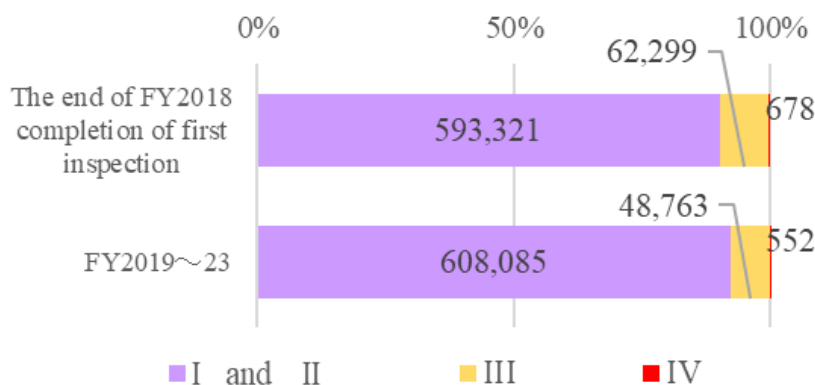


Figure 3. Inspection Results for Bridges Managed by Local Governments

Source: MLIT Infrastructure Maintenance Information.

Meanwhile, within Japan, budgets related to public works have been declining, with expenditures in 2024 projected to be approximately 54% of the 1998 level. Figure 4 shows the trend in public works-related budgets across G7 countries. While other nations have seen increases in such budgets since 1996, Japan has experienced a decrease. The 1990s followed the collapse of the bubble economy and saw accumulated public works investment as an economic stimulus measure. However, since the 2000s, fiscal conditions have worsened due to rising social security costs from an aging population and declining tax revenues from economic stagnation. This led to spending reviews and reductions in public works investment. Not only at the national level, but also in local governments, civil

engineering expenditures for public works have decreased. By 2023, civil engineering expenditures in municipalities had fallen to approximately 56.4% of their 1993 levels. Therefore, to advance measures against infrastructure aging within fiscal constraints, it is crucial to pursue maintenance efficiently.

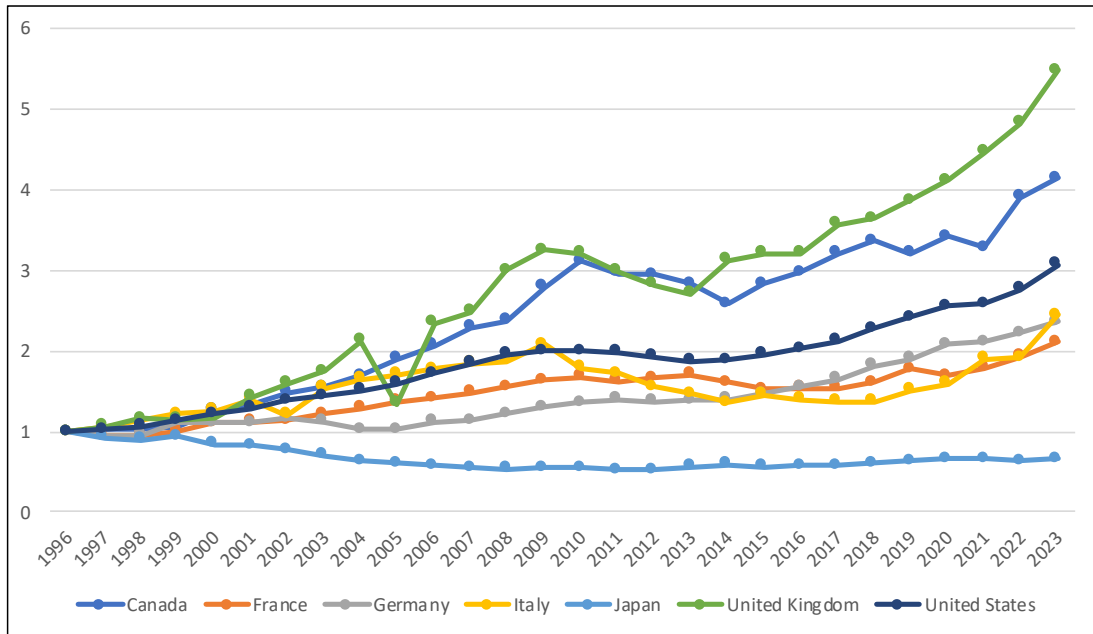


Figure 4. Trends of general government gross capital formation in G7 countries (1996 = 1)  
Source: Created by the author from OECD Data Explorer.

In December 2020, the “Five-Year Acceleration Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience” was approved by the Cabinet. It stated that measures to address the aging of infrastructure should be a key priority, as well as promoting digitalization to counter frequent large-scale disasters and enhance national resilience. Specifically, it clearly stated the goal of shifting from reactive maintenance—where major repairs are undertaken only after damage becomes severe—to preventive maintenance, where repairs are performed before functional or performance issues arise in facilities. This shift to preventive maintenance enables reductions in maintenance costs and is expected to curb fiscal expenditures. In June 2021, MLIT formulated the “Second Infrastructure Longevity Plan (Action Plan)” covering the period from 2021 to 2025. The plan outlines efforts to enhance maintenance efficiency through the introduction of new technologies and to advance the shift towards preventive maintenance.

Furthermore, the Fifth Priority Plan for Social Infrastructure Development, covering the period from 2021 to 2025, identifies “sustainable infrastructure maintenance” as one of its key objectives. It also positions the consolidation and reorganization of infrastructure—including the decommissioning or functional conversion of infrastructure where regional needs or necessity have diminished—as one of its measures.

The issue of maintenance costs also impacts the toll system for expressways. Expressway tolls are based on the “repayment principle,” where toll revenues are used to

repay debts incurred during construction, with tolls becoming free once repayment is complete. When the Japan Highway Public Corporation was privatized in 2005, expressway tolls were scheduled to become free starting in 2050, after the debts were fully repaid. However, following the 2012 ceiling collapse accident in the Sasago Tunnel on the Chuo Expressway, more substantial renewal measures for aging infrastructure became necessary. Consequently, in 2014, the toll collection period was extended by 15 years to recover the costs of these aging countermeasures (Figure 5).

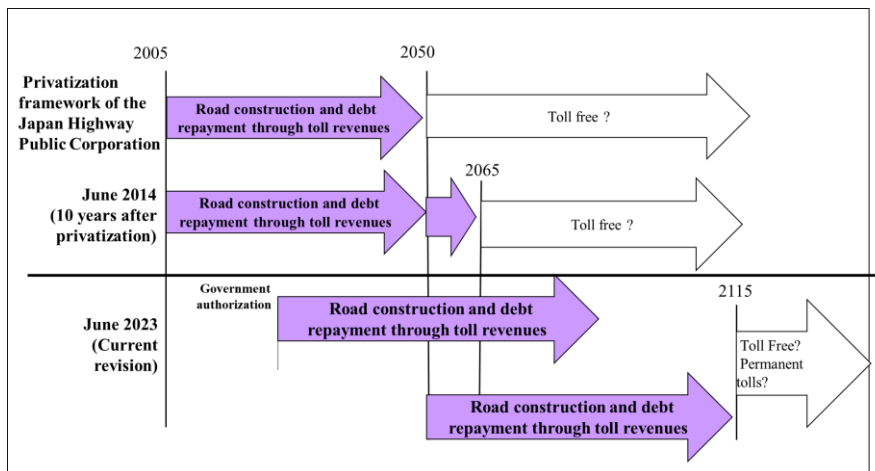


Figure 5. Image of extended toll collection period on highways.

Recently, as a result of enhanced inspections of road infrastructure, numerous new sections requiring renewal have been identified. To secure the necessary funds for these renewals, the toll collection period was further extended in 2023. This decision enables the extension of the repayment period for projects deemed essential for the renewal and advancement of expressways. Considering the certainty of debt repayment, the repayment period is capped at 50 years from the date of application for permission to the Minister of Land, Infrastructure, Transport and Tourism. Consequently, the toll collection period for expressways will be extended until at least 2115. Nevertheless, securing future maintenance funding remains a problem, and discussions regarding expressway toll collection beyond 2115 will continue to be important.

Funds obtained through the 2023 extension will be utilized for purposes beyond merely renewing aging road infrastructure. For example, funds are planned for lane widening and the installation of electric vehicle charging infrastructure. Lane widening is particularly effective for reducing accident risks on two-lane sections, common in rural areas, where the risk of fatal accidents due to vehicles crossing into oncoming lanes is high. Furthermore, with the recent increase in electric vehicles, enhancing rapid charging facilities at service areas and parking areas to prevent power shortages during long-distance travel has also become a key point.

## 4. Transportation Policies for Achieving Decarbonization

In response to growing social demands regarding environmental issues in recent years, the transportation sector has been actively pursuing decarbonization efforts. This is driven by the fact that the transportation sector accounts for approximately 19.2% of total CO<sub>2</sub> emissions in Japan (989 million tons) as of 2023. This section therefore describes specific decarbonization initiatives within the transportation sector.

In the railway sector, the final report of the “Committee for Accelerating Carbon Neutrality in the Railway Sector” was published in May 2023. The report identified three key objectives: (1) Decarbonizing railway operations themselves, (2) Decarbonization utilizing railway assets, and (3) Decarbonization through promoting environmentally advantageous railway use. It includes initiatives such as replacing rolling stock on non-electrified sections with battery-powered or diesel-hybrid vehicles to achieve substantial electrification, and installing renewable energy generation facilities at station buildings, rolling stock depots, and railway right-of-way land.

In the road sector, an interim summary of the “Strategy for Promoting Carbon Neutrality on Roads” was released in September 2023 with the aim of achieving carbon neutrality by 2050. In December 2024, “Decarbonization Policy Collection for the Road Sector Ver. 1.0” was released. The four basic policy pillars are: (1) creating road space that supports greener road transportation, (2) shifting to low-carbon passenger and freight transportation, (3) optimizing road traffic, and (4) reducing carbon emissions throughout the entire road life cycle. It also introduced examples of “Collaborative 2030 Priority Projects,” such as the introduction of LED road lighting, the use of renewable energy, and the promotion of low-carbon materials and also introduced decarbonization targets for the road sector for fiscal 2030.

In the port sector, actions are in progress toward establishing Carbon Neutral Ports (CNP). In November 2023, the “CNP Certification (Container Terminal)” was trialed, and in March 2025, this certification was formally established. The certification targets container terminals at domestic ports and employs a multi-tiered evaluation system ranging from the lowest Level 1 to the highest Level 5. Furthermore, international cooperation toward the formation of carbon neutral ports is also being strengthened. In October 2023, MLIT co-hosted the “Symposium on Port Decarbonization and Green Shipping Corridors” with the California State Transportation Agency in Los Angeles. In December, MLIT and Singapore's Ministry of Transport signed a memorandum of agreement on cooperation for green and digital shipping corridors.

In the airport sector, actions are ongoing to enhance energy efficiency in airport facilities and vehicles, establish airports as hubs for renewable energy, utilize the Airport Decarbonization Promotion Council, foster collaboration with local communities, and promote understanding of these initiatives among aircraft and airport users. Among these, the introduction of Sustainable Aviation Fuel (SAF), where Europe and the US are leading,

is urgently needed as it impacts the international competitiveness of airlines. To advance efforts, the “Public-Private Council for Promoting SAF Introduction” was established in April 2022, preceding legislation, to discuss technical and economic challenges and solutions with both public and private sectors. In the aviation and airport sector, efforts are actively advancing, including the certification of Aviation Transport Business Decarbonization Promotion Plans and Airport Decarbonization Promotion Plans based on the Aviation Act and related laws. Regarding the Aviation Transport Business Decarbonization Promotion Plans, the plans submitted by the ANA Group (All Nippon Airways and three other companies) and the JAL Group (Japan Airlines and seven other companies) were certified in January 2024, marking the first certifications under the newly established system. For Airport Decarbonization Promotion Plans, Narita, Chubu, Kansai, and Osaka (Itami) airports were certified in December 2023, followed by Nagoya Airport in March 2024.

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