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Meeting fiscal challenges in Japan's rapidly ageing society

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Haruki Seitani

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MEETING FISCAL CHALLENGES IN JAPAN'S RAPIDLY AGEING SOCIETY

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By Randall S. Jones and Haruki Seitani

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ABSTRACT/RÉSUMÉ

Meeting fiscal challenges in Japan's rapidly ageing society

Japan's gross government debt of 226% of GDP in 2018 is the highest ever recorded in the OECD area, and places the economy at risk. The government now aims to achieve a primary surplus by FY 2025. Additional fiscal consolidation, based on a detailed plan covering specific spending cuts and tax increases, is necessary to put the government debt ratio on a downward trend in the face of rapid population ageing. This is a very difficult task and a stronger fiscal framework would help keep policy on track to achieve fiscal targets. Controlling social spending requires making better use of healthcare resources, in p art by reducing overinvestment in hospitals and increasing the use of generic drugs. Another priority is ensuring the sustainability of local government spending, in part by reducing costs through the joint provision of local public services and infrastructure across jurisdictions and the development of compact cities in the context of depopulation in many parts of Japan. Increased revenue should come primarily from hikes in the consumption tax rate, which is among the lowest in the OECD. In addition, disincentives to employment in the tax and benefit system should be removed, as sustained economic growth is crucial to ensure fiscal sustainability.

This Working Paper relates to the 2019 *OECD Economic Survey of Japan* (http://www.oecd.org/economy/japan-economic-snapshot/)

JEL classification: H2, H5, H6, H7, I18

Keywords: Abenomics, fiscal policy, public debt, social security, consumption tax, fiscal consolidation, fiscal sustainability, local governments, independent fiscal councils, poverty, inequality, pensions, healthcare, long-term care, EITC, compact cities, unidentified landowners.

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Relever les défis budgétaires alors que la société japonaise vieillit rapidement

La dette publique brute du Japon à 226 % du PIB en 2018 est le plus haut niveau jamais observé dans la zone OCDE et met l'économie en péril. Le gouvernement vise maintenant un excédent primaire pour l'exercice budgétaire de 2025. Un assainissement budgétaire supplémentaire, fondé sur un plan détaillé prévoyant des réductions de dépenses spécifiques et des augmentations d'impôts, est indispensable pour que le ratio de la dette publique soit à la baisse dans un contexte de vieillissement démographique rapide. C'est une tâche très difficile et un cadre budgétaire plus fort aiderait à maintenir la politique en bonne voie pour atteindre les objectifs budgétaires. Contrôler les dépenses sociales nécessite d'utiliser de manière plus efficiente les ressources du système de santé, en partie en réduisant le surinvestissement dans les hôpitaux et en augmentant l'utilisation des médicaments génériques. Une autre priorité est d'assurer la durabilité des dépenses des administrations locales, en partie en réduisant les coûts grâce à la mutualisation des prestations de services d'infrastructure et de services publics locaux entre les juridictions et en favorisant développant une urbanisation compacte dans un contexte de dépopulation dans de nombreuses régions du Japon. L'augmentation des recettes devrait provenir principalement de la hausse du taux de la taxe sur la consommation, qui est une des plus faibles de la zone OCDE. De plus, il faudrait supprimer les caractéristiques du système d'imposition et d'indemnisation prestations qui constituent des obstacles à l'emploi, car une croissance économique soutenue est essentielle pour assurer la viabilité des finances publiques.

Ce Document de travail a trait à *l'Étude économique de l'OCDE du Japon*, 2019 (http://www.oecd.org/fr/economie/nouvelle-zelande-en-un-coup-d-oeil/).

Classification JEL : H2, H5, H6, H7, I18

Mots clés : Abenomics, politique budgétaire, dette publique, sécurité sociale, impôt sur la consommation, assainissement budgétaire, viabilité budgétaire, collectivités locales, conseils budgétaires indépendants, pauvreté, inégalité, retraite, soins de santé, soins de longue durée, crédit d'impôt sur les revenus du travail, urbanisation compacte, propriétaires fonciers non identifiés.

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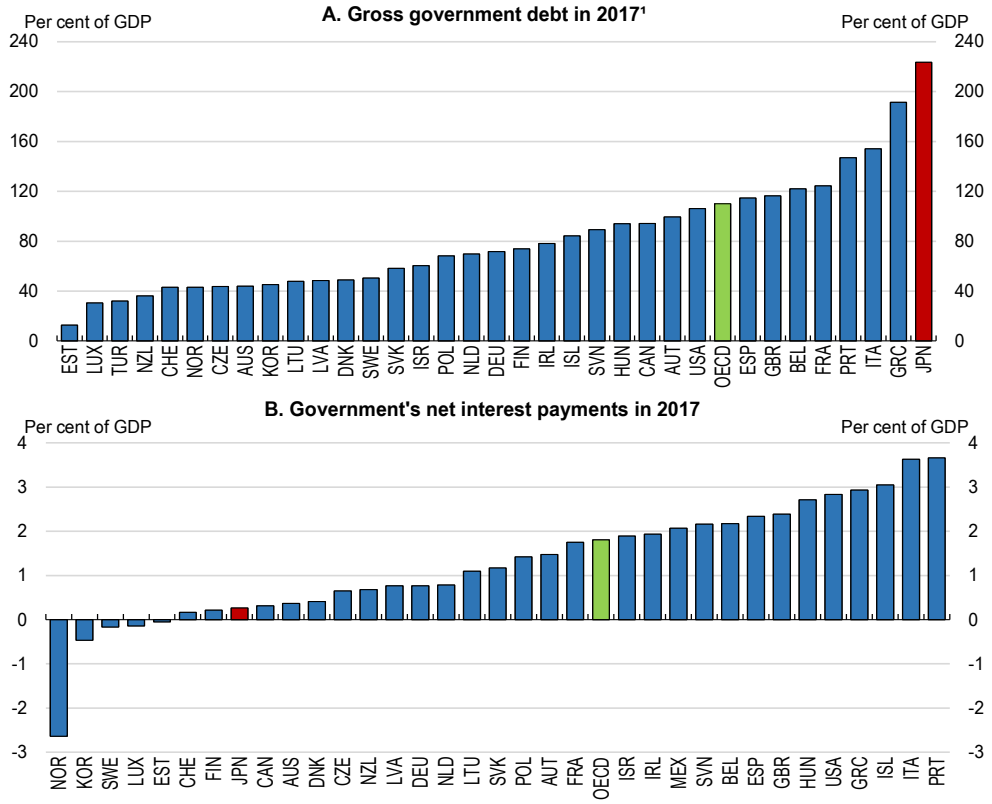
Meeting fiscal challenges in Japan's rapidly ageing society

By Randall S. Jones and Haruki Seitani[1]

Japan's fiscal situation is in uncharted territory. Twenty-seven consecutive years of budget deficits have driven up gross government debt from 70% of GDP in 1992 to an estimated 226% in 2018, the highest ever recorded in the OECD (Figure 1, Panel A). Although the government has a large stock of assets, net debt, at 129% of GDP, is the second highest in the OECD and has also increased rapidly in recent years. Japan reduced its overall budget deficit from nearly 10% of GDP in 2009 to 3.6% in 2015, but progress has stalled since then. Even with the planned hike in the consumption tax rate in 2019, the primary deficit is projected to be around 2% of GDP in 2020.

Figure 1. Japan's government debt ratio is high, but interest payments are low



1. OECD estimate for some countries, including Japan.
Source: OECD Economic Outlook database.

[1]Randall S. Jones is head of the Japan/Korea Desk in the Economics Department of the OECD and Haruki Seitani is an economist on the Desk. The authors would like to thank OECD Economics Department colleagues Robert Ford, Vincent Koen, Isabell Koske, Christine Lewis, Alvaro Pereira, and Jon Pareliussen, as well as Bert Brys (OECD Centre for Tax Policy and Administration), Hervé Boulhol, Tiago Cravo Oliveira Hashiguchi, Tomoko Onoda, and Thomas Rapp (OECD Directorate for Employment, Labour and Social Affairs), and officials in the Japanese government, for valuable comments and/or discussions. Special thanks go to OECD Economics Department colleagues Lutécia Daniel for technical assistance and Sisse Nielsen and Michelle Ortiz for technical preparation.

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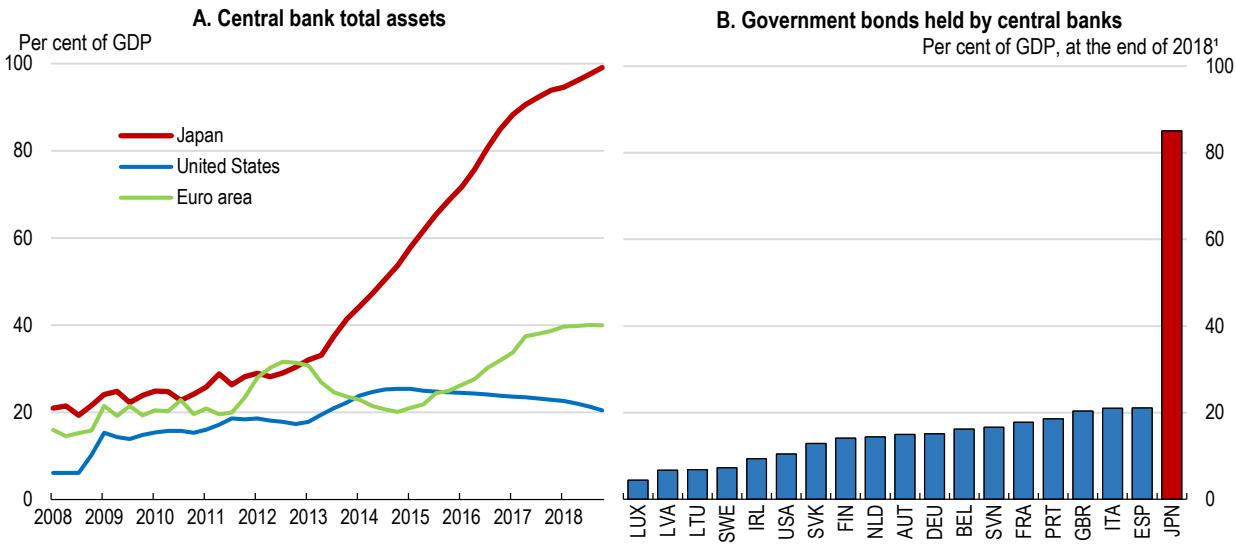
The burden of high debt is limited by the extremely low interest rate environment created by large-scale government bond purchases by the Bank of Japan (BoJ) under its Quantitative and Qualitative Monetary Easing (QQE) policy launched in 2013 to achieve its 2% inflation target (Figure 2). This was complemented by the 2016 Yield Curve Control policy, which has pushed government bond yields below zero for up to 10 years of maturity. As a result of these policies, the BoJ's holdings of government bonds reached 85% of GDP in March 2019 (Panel B). Monetary easing has also helped reduce the net interest payments on government debt from around 2% of GDP in 2010 to only 0.3% in 2017 (Figure 1, Panel B). The central bank's share of outstanding government debt is likely to continue rising, as inflation remains well below the 2% target. However, the outlook for financing government deficits once the BoJ achieves its inflation target and phases out QQE is uncertain.

Figure 2. The run-up in central bank assets has been the largest in Japan



1. March 2019 for Japan, January 2019 for the United States and November 2018 for Sweden.
Source: OECD Economic Outlook database.

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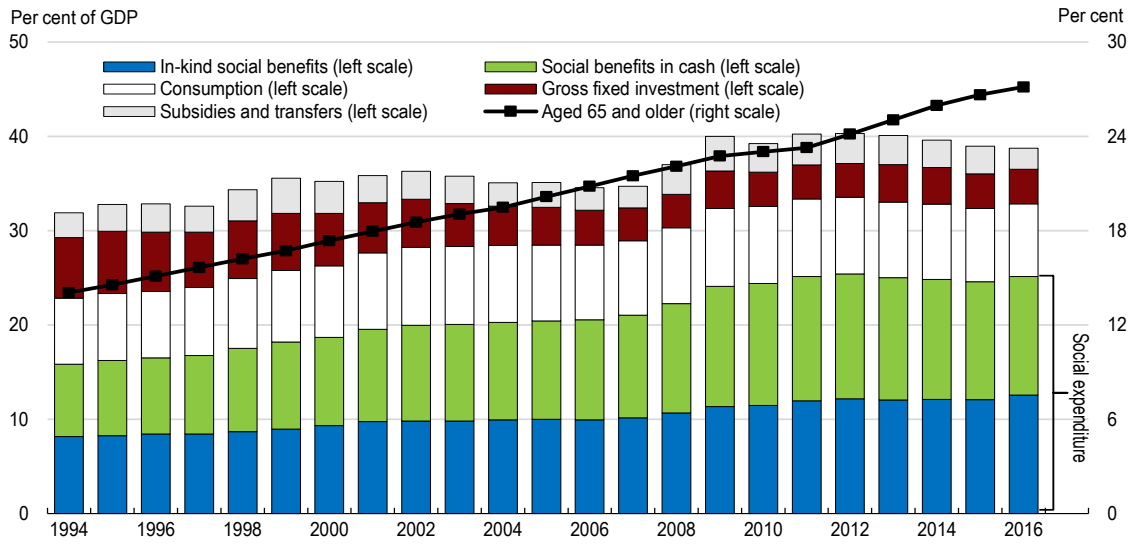
Population ageing creates strong pressure on fiscal sustainability. On the one hand, it tends to slow economic growth by reducing the working-age population, although the evolution of potential growth also depends on capital per worker and innovation (2017 *OECD Economic Survey of Japan*). Thus far, Japan has mitigated the impact of the fall in its working-age population since 1995 by an increase in employment rates, particularly for women. Consequently, the employment to population ratio of 51.5% in 2017 matches that of 1995, helping to support tax revenue. However, the elderly population (age 65 and over) is projected to rise from 50% of the working-age population (aged 20-64) in 2015 to 79% in 2050, remaining the highest in the OECD. Population ageing is expected to substantially shrink the labour force relative to the total population (Jones and Seitani, 2019). The tax and benefit system should be redesigned to reduce its negative labour supply effects, particularly on women and the elderly. Health and long-term care resources should shift toward services that effectively increase the population's healthy life span.

Population ageing has had a strong impact on social spending, which has increased from 16% of GDP to 25% since 1994 (Figure 3). Japan's population is projected to fall by a fifth from 126 million in 2018 to 102 million in 2050, while the share above age 65 increases from 27.8% to 38.1% over that period. Meanwhile, the share above 75, the age when spending on health and long-term care increases sharply in Japan, will nearly double from 13.8% to 25.7%. In addition to increased spending on pensions and health and long-term care, higher income inequality and relative poverty rates among the elderly will necessitate further increases in social spending.

Figure 3. Population ageing has driven the rise in government spending



Source: Cabinet Office, *Annual Report on National Accounts*; and OECD calculations.

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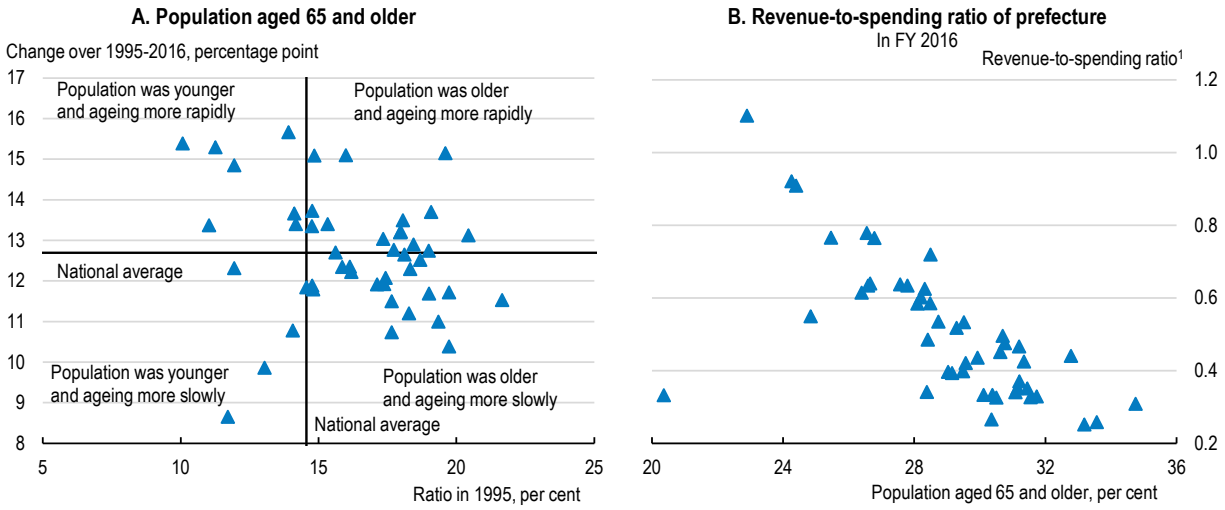
The impact of ageing will vary across regions. Many prefectures with a high share of elderly in 1995 have experienced more rapid ageing than those with a younger population (Figure 4, Panel A). In addition, prefectures with a high share of elderly tend to have weak revenue capacity compared to their spending needs (Panel B). A strategy for fiscal consolidation must explicitly take into account these regional gaps. In particular, the efficiency of social infrastructure and local public services should be enhanced to ensure their sustainability in the face of a falling population.

A distinctive feature of Japanese public finance is the low share of central government spending, at only 3.3% of GDP, even as the central government runs deficits to make transfers to local governments and social security (Figure 5). Social security outlays amount to 19.1% of GDP, while local governments account for another 10.7%, reflecting their primary role in providing health and long-term care, as well as other local services. Consequently, fiscal consolidation needs to focus more on limiting spending by local governments and social security. Indeed, each "Basic Policy on Economic and Fiscal Management and Reform" since 2015 has stated that local governments need to pursue fiscal consolidation in tandem with the central government.

Figure 4. Variations across prefectures in the pace of ageing and fiscal capacity are large



1. Measured by the standard local tax revenue and fiscal needs, which are used to calculate local allocation tax grants. Fiscal needs are based on population and adjusted for other factors.
Source: Ministry of Internal Affairs and Communications.

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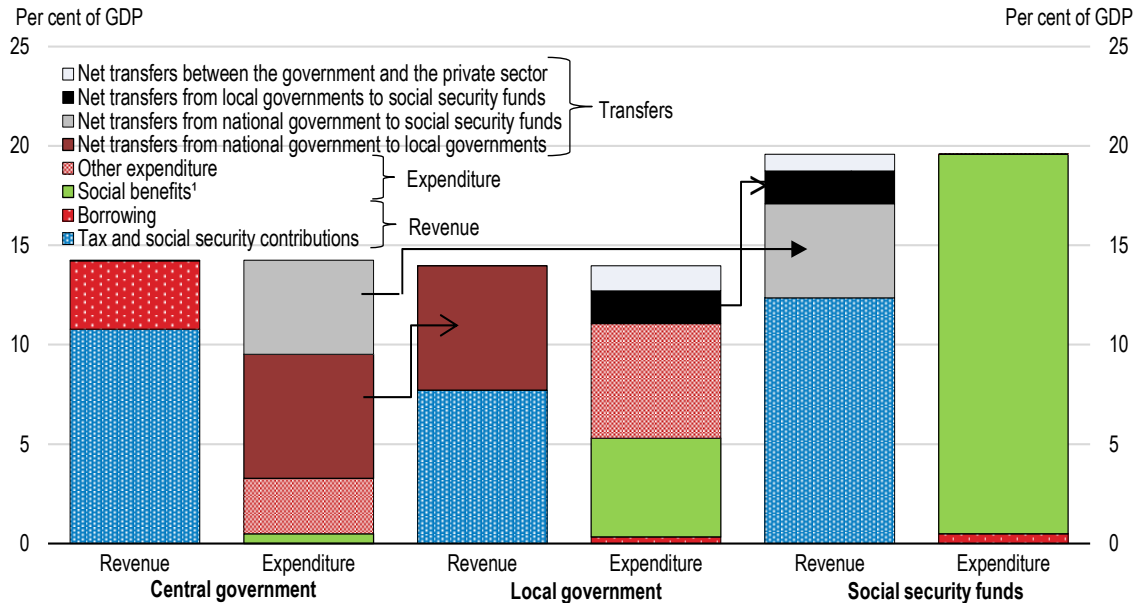
Figure 5. Local governments and social security account for most of government spending



1. In-kind and cash social spending.
Source: Cabinet Office, *Annual Report on National Accounts*; Ministry of Internal Affairs and Communications; and OECD calculations.

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Faced with a rapid demographic transition, Japan needs to transform its fiscal system to ensure sustainability of public services, while removing disincentives to employment. After an overview of the fiscal situation, this paper reviews options to reform health and long-

term care and ensure income security for the elderly. The fourth section focuses on policies to promote greater efficiency at the local government level, including through compact cities and addressing the unidentified landowner problem. Ensuring fiscal sustainability also requires measures to increase revenue while removing obstacles to employment, which is addressed in the final section. Policy recommendations are summarised at the end of the paper.

Ensuring fiscal sustainability in Japan requires significant fiscal consolidation

In 2010, Japan set a target of a primary surplus (for central and local governments) by FY 2020. The hike in the consumption tax rate from 8% to 10% that was planned for 2015 was postponed to 2017 and the government adopted the Plan to Advance Economic and Fiscal Revitalisation. It maintained the target of a primary surplus by FY 2020 and a steady reduction in the government debt to GDP ratio thereafter. The Plan designated the period FY 2016-18 as an "intensive reform period" and introduced budget guidelines for those years. In addition, it set an interim benchmark of reducing the primary deficit in FY 2018 from the 1.7% of GDP projected by the government in 2015 to around 1%.

Although the initial budgets between FY 2016 and FY 2018 strictly followed the spending guidelines aimed at the benchmark of a deficit of around 1% of GDP, the deficit increased to 2.9%. This reflected three factors, according to the interim evaluation by the Committee for Promoting Integrated Economic and Fiscal Reform (2018). *First*, increased spending in a series of supplementary budgets boosted the primary deficit by 0.4 percentage points of GDP, eroding the consolidation efforts in the initial budgets. *Second*, the government postponed the consumption tax hike, which would have improved the primary balance by 0.7 percentage points, a second time to October 2019. *Third*, lower-than-projected economic growth increased the deficit by 0.8 percentage points. The repeated supplementary budgets and the failure to implement the tax hike reflect the weakness of Japan's fiscal framework.

Japan's new fiscal consolidation plan

Given the increase in the primary deficit, the government pushed back the target date for a primary surplus from FY 2020 to FY 2025. The Council on Economic and Fiscal Policy, which is chaired by the Prime Minister and includes five ministers, the central bank governor and four private-sector experts, also proposed three benchmarks for FY 2021 to monitor progress: *i)* halving the primary deficit from its FY 2017 level to around 1.5% of GDP; *ii)* reducing government debt to 180-185% of GDP (by the government's measure, it was 189% in FY 2017); and *iii)* cutting the fiscal deficit of central and local governments to below 3% of GDP.

The authorities estimate that the burden of the consumption tax hike from 8% to 10% in October 2019 on households will amount to around JPY 5.7 trillion (1.0% of GDP). The introduction of multiple consumption tax rates will reduce the burden by 0.2% of GDP (Table 1). The permanent introduction of free early childhood education and measures to enhance the social security system will reduce the burden to 0.4% of GDP. To mitigate the remaining impact of the tax hike, the Basic Policy on Economic and Fiscal Management and Reform 2018 decided that tax and budget measures, including a tax cut for purchases of durables and additional temporary spending, will be introduced. The impact of the tax hike on households will thus be completely offset in the short run. Meeting the FY 2021 benchmark of a primary deficit of 1.5% of GDP will require rolling back the temporary spending measures or raising additional revenue.

Table 1. Expenditure and revenue measures proposed by government to mitigate the impact of the 2019 consumption tax hike

Per cent of GDP on an annual basis

	Short-term	Around 2035
Impact of the 2019 consumption tax hike	1.0	1.0
Increasing the consumption tax rate from 8% to 10%	1.0	1.0
Maintaining the rate at 8% for food and non-alcoholic beverages	-0.2	-0.2
Increasing the cigarette and other taxes to finance the reduced 8% rate	0.1	0.1
Spending for free early childhood education and care and enhancing social security	0.6	0.6
Free early childhood education and care for children aged 3 to 5	0.2	0.2
Benefits for supporting low-income pensioners, etc.	0.4	0.4
Other measures to mitigate the impact of the consumption tax	0.4	
Temporary budget measures, including public investment	0.4	
Tax breaks for purchases of cars and homes (temporary and permanent)	0.1	
Net revenue impact of the 2019 consumption tax hike	0.0	0.4

Source: OECD calculations based on Council on Economic and Fiscal Policy (2018).

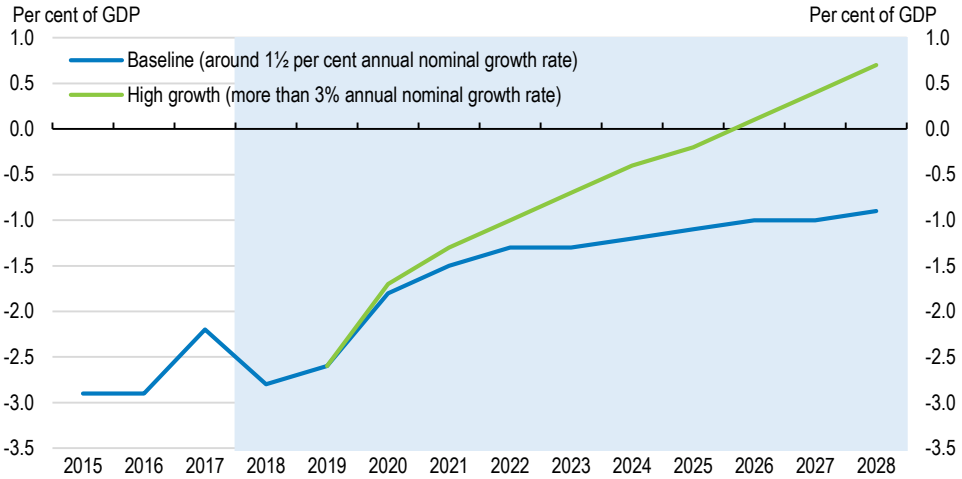
Government projections indicate that, under current policies, a primary surplus for central and local governments will not be achieved by FY 2025 (Figure 6). Depending on the assumptions about economic growth, the deficit is projected to be between 0.2% and 1.1% of GDP in FY 2025. A primary surplus will only be achieved in FY 2026, assuming the high growth scenario (more than 3% nominal growth per year). In the baseline scenario (nominal growth of 1½ per cent per year), the primary deficit would be 1% of GDP in FY 2027. Limiting the size of the special measures planned in the FY 2019-20 budgets so that spending can be normalised in FY 2021 would help Japan meet the FY 2025 target.

A path to fiscal sustainability

The first priority is to achieve the FY 2025 target for a primary surplus, but more is needed. Without further consolidation, government debt would rise to around 560% GDP by 2060, according to OECD simulations (Figure 7, Panel A), which incorporate the government's projection that health and long-term care spending will rise by 4.7% of GDP over 2020-60. The results are similar to those by the Fiscal System Council, which shows the debt ratio rising to 600% of GDP by 2060 if no further fiscal consolidation were undertaken after achieving a primary surplus in FY 2020 (Fiscal System Council, 2015).

Policies over 2026-35 to raise the primary surplus to 5% of GDP would reduce the debt ratio to 150% of GDP by 2060, moving it closer to the 111% ratio for the OECD area in 2018 (Figure 7). To illustrate the scale of such a fiscal consolidation, it would be equivalent to a 10 percentage-point hike in the consumption tax rate. This implies raising the rate gradually to 20%, still below the average EU standard rate of 23%. Such an increase would boost the tax and social security burden from 30.7% of GDP in 2015 to slightly above the 34% OECD average. The simulation also shows that delaying fiscal tightening raises the amount of consolidation necessary to reduce the debt ratio to 150%. If further tightening were delayed to 2036-45, an 8.1% of GDP rise in the primary balance would be necessary (Panel B), implying a hike in the consumption tax rate to 26%.

Figure 6. A primary deficit is projected to continue through FY 2025 under current polices



1. Government projections in January 2019. It assumes that the hike in the consumption tax rate from 8% to 10% is implemented as planned in October 2019. The primary balance is central and local governments on a fiscal year basis.
Source: Cabinet Office (2019).

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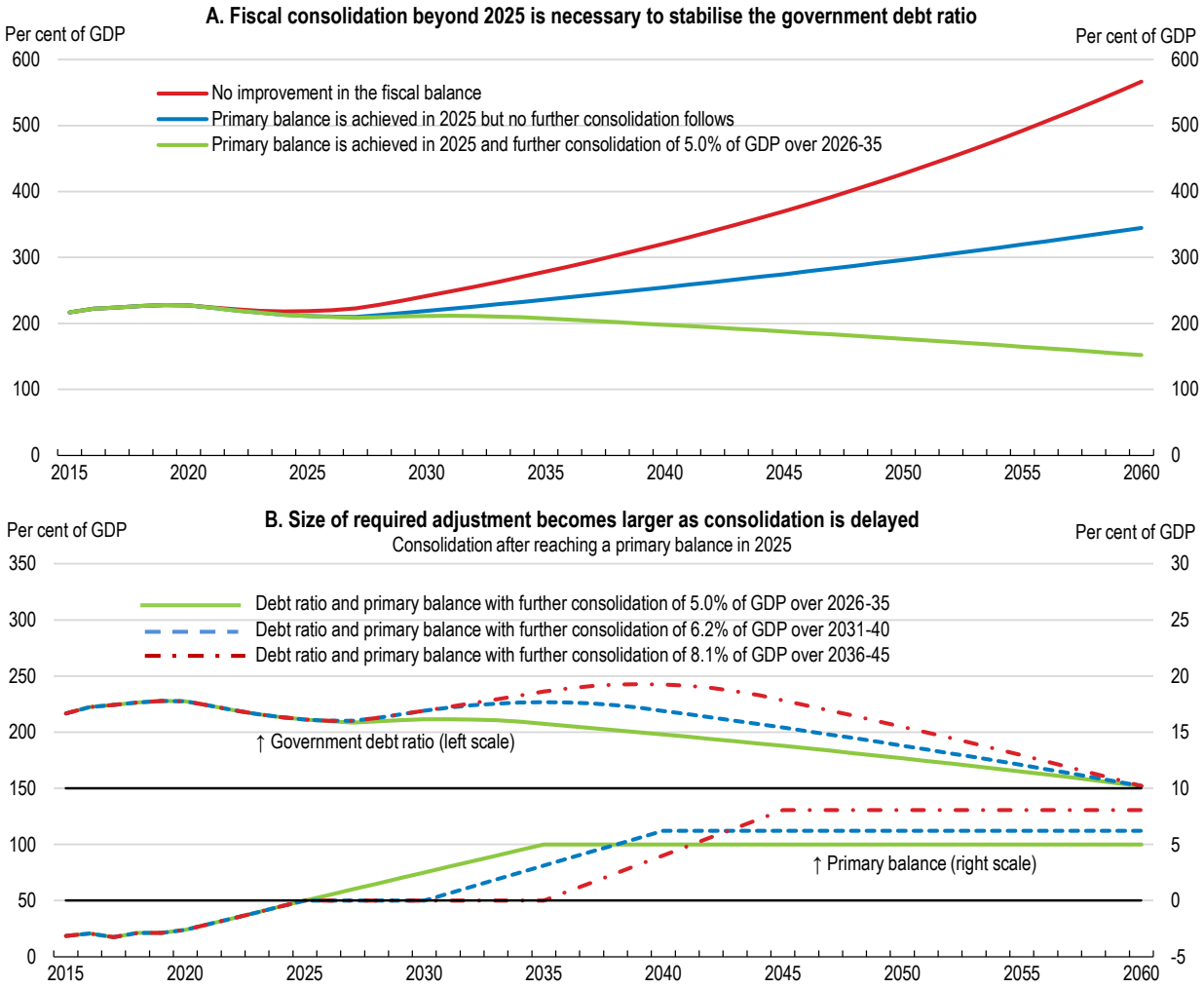
Even though government financial assets amount to nearly 100% of GDP, Japan's net public debt is among the highest in the OECD and its rapid increase is a cause of concern. Moreover, only about a third of government assets are in the form of liquid instruments and a large share, such as pension reserves, are linked to corresponding liabilities. Some observers have interpreted fiscal sustainability as achieving a positive net worth by including tangible fixed assets, such as roads and public buildings. However, such assets are difficult to value and in any case cannot be easily turned into cash. In sum, gross government debt is a better summary measure of the public sector's financial position in Japan (2015 *OECD Economic Survey of Japan*).

These simulations illustrate that stabilising government debt at a level close to the current OECD average requires as many as 15 years of consolidation to achieve a large primary surplus. The amount of the required fiscal consolidation depends on the economic assumptions. The OECD simulation is based on government assumptions of real output growth averaging 1.4% per year and inflation of 2.0%. Less optimistic assumptions imply that even greater consolidation is needed. In sum, fiscal sustainability becomes more difficult, perhaps even impossible, without economic revitalisation and positive inflation.

A key to sustaining 15 years of fiscal consolidation is maintaining confidence in the government bond market (Hoshi and Ito, 2014). Confidence would be supported by a comprehensive and detailed consolidation strategy based on well-articulated fiscal rules and a stronger institutional framework. One major shortfall of Japan's economic and fiscal revitalisation plan is the absence of a clearly defined debt target that can serve as a reference point to set fiscal rules. The current plan aims to reduce the debt to GDP ratio in a stable manner but does not identify a specific target level nor a timeline for reducing debt, apart from the benchmark year of FY 2021. To ensure that fiscal rules are sufficiently flexible to cope with economic uncertainty (Eyraud et al., 2018), they should be consistent with a prudent level of debt (Fall et al., 2015). Following rules consistent with a prudent debt target anchors fiscal policy expectations and allows counter-cyclical policies in the case of negative economic shocks.

Figure 7. Long-run simulation of Japan's fiscal balance and government debt



Source: OECD calculations based on: *OECD Economic Outlook* No. 104 through 2020; Cabinet Office projections through 2027, "Economic Growth Achieved Case", which implies real growth of more than 2% and nominal growth of more than 3% a year in the first half of the 2020s; and government assumptions for growth, spending and interest rates through 2060. Tax and social security contributions remain constant at 34.3% of GDP (see annex).

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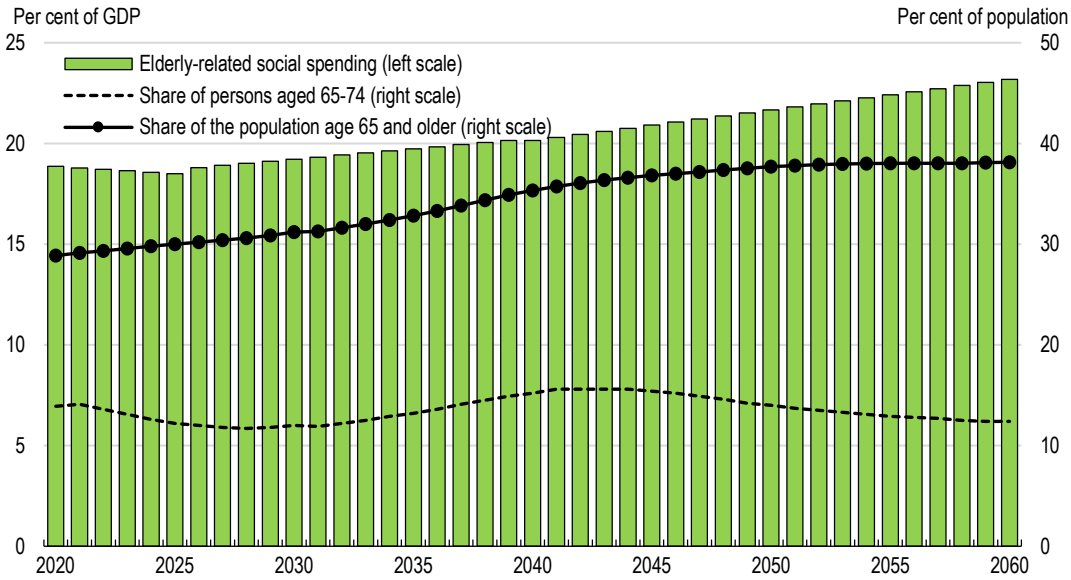
An increasing number of OECD countries are using independent fiscal institutions (IFIs) to achieve fiscal consolidation. The OECD Council (OECD, 2014) stated that IFIs should operate under the core values of independence, non-partisanship, transparency and accountability. Assigning an institution that is outside normative policy-making responsibility to assess macroeconomic and fiscal forecasts and monitor fiscal plans helps counter biases in fiscal policy management towards higher spending and deficits (von Trapp et al., 2016). The failure to achieve the original economic and fiscal revitalisation plan makes a strong case for strengthening Japan's fiscal management framework, including the establishment of an IFI. Some countries, including Australia, Austria, Canada, Greece, Ireland, Italy, Korea, Mexico, and the United States, have established IFIs

in their legislative branches. For example, Korea's National Assembly Budget Office (NABO) was established by the legislature in 2003 to provide projections of economic growth and tax revenue and to analyse national fiscal management, including the annual budget proposed by the president. It also evaluates government spending programmes and estimates the cost of legislation proposed in the National Assembly. Another important task is to estimate the medium and long-term fiscal requirements for government programmes. Thanks to its analytical capabilities, NABO has become a respected and influential institution.

Policies to control social spending while providing quality health and long-term care

Life expectancy at birth in Japan was 84.1 years in 2016, compared to the OECD average of 80.6 years. Universal access to high quality healthcare has contributed to favourable health outcomes (OECD, 2017b). Long life expectancy is also a result of relatively healthy lifestyles: the obesity rate of adults in Japan is 3.7%, the lowest in the OECD area, and alcohol consumption is below the OECD average. The priority is to control social spending related to the elderly, which the government projects will increase from 19.0% of GDP in FY 2018 to 23.2% in FY 2060 under current policies (Figure 8).

Figure 8. Elderly-related social spending is projected to rise further



Source: Cabinet Secretariat et al. (2018); Fiscal System Council (2018); Ministry of Internal Affairs and Communications; and OECD calculations.

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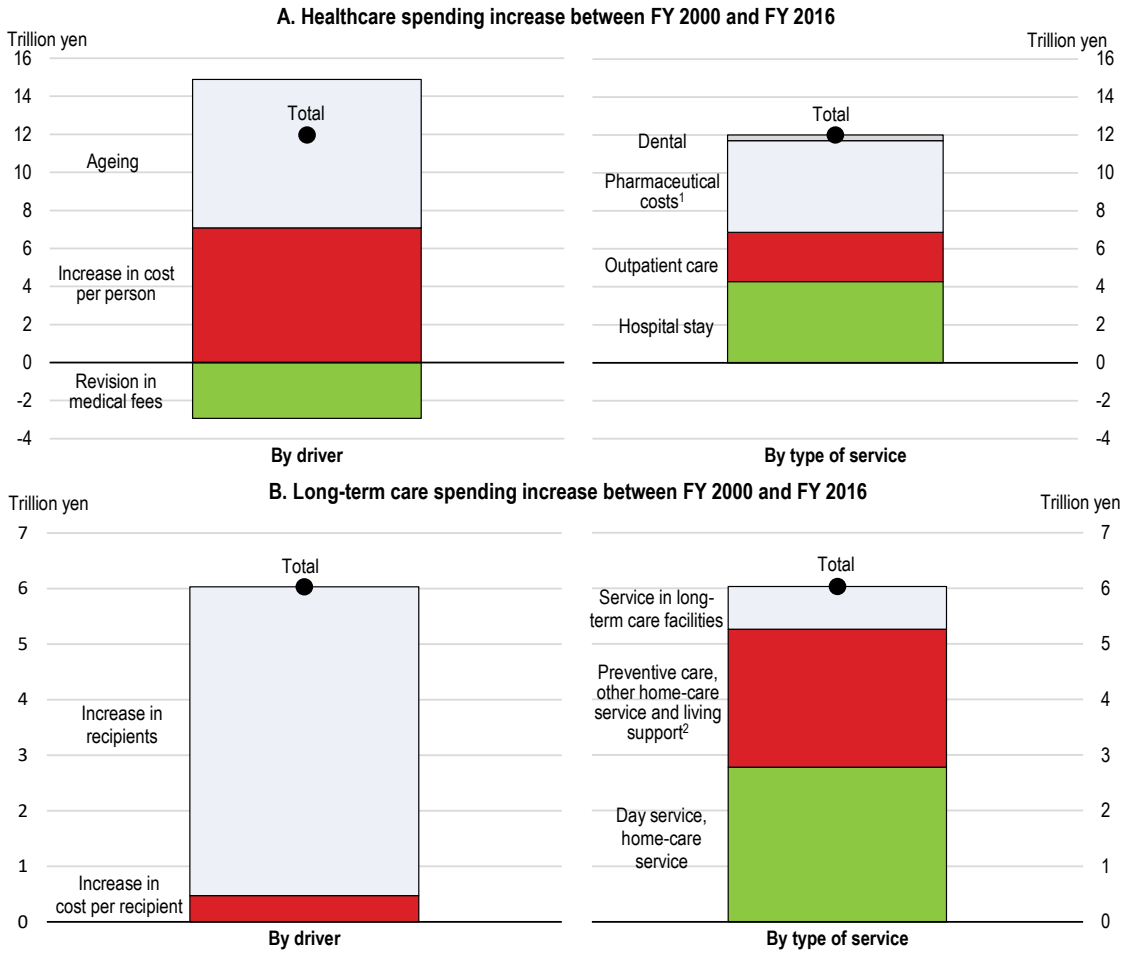
Factors driving health and long-term care spending

The share of the elderly in the population in Japan is the highest in the OECD and is expected to remain so in 2050, putting strong pressure on the healthcare system. Health and long-term care spending (public and private) rose from 7.2% of GDP in 2000, close to the OECD average, to 10.8% in 2016, the sixth highest. Nevertheless, Japan's healthcare spending is relatively low, given its large elderly population. Population ageing is a major factor driving healthcare spending, accounting for nearly 60% of the JPY 12 trillion

(USD 107 billion) increase in healthcare spending over 2000-16 (Figure 9, Panel A). Rising cost per person boosted spending by another JPY 7 trillion, though these factors were partially offset by cuts in medical fees. In contrast, long-term care spending, which increased by 2.7 times over the same period, has been driven primarily by an increasing number of care recipients (Panel B). With further population ageing, the government projects that public health and long-term care spending will rise from 8.9% of GDP in FY 2018 to 11.7-12.0% in FY 2040, assuming the implementation of reforms envisaged in the regional health and long-term care plans (Cabinet Secretariat et al., 2018).

Figure 9. Health spending has increased due to ageing and more intensive care



1. Includes only pharmaceuticals sold at pharmacies. Those sold elsewhere are included in the other categories.
2. Preventive care and other home care include short-stay service, rental of welfare equipment and fees for home repair, etc. Preventive care services started in 2006.
Source: Ministry of Health, Labour and Welfare, *National Health Expenditure and Survey of Actual Condition of Long-term Care Benefits in FY 2000 and FY 2016*; Ministry of Internal Affairs and Communications; and OECD calculations.

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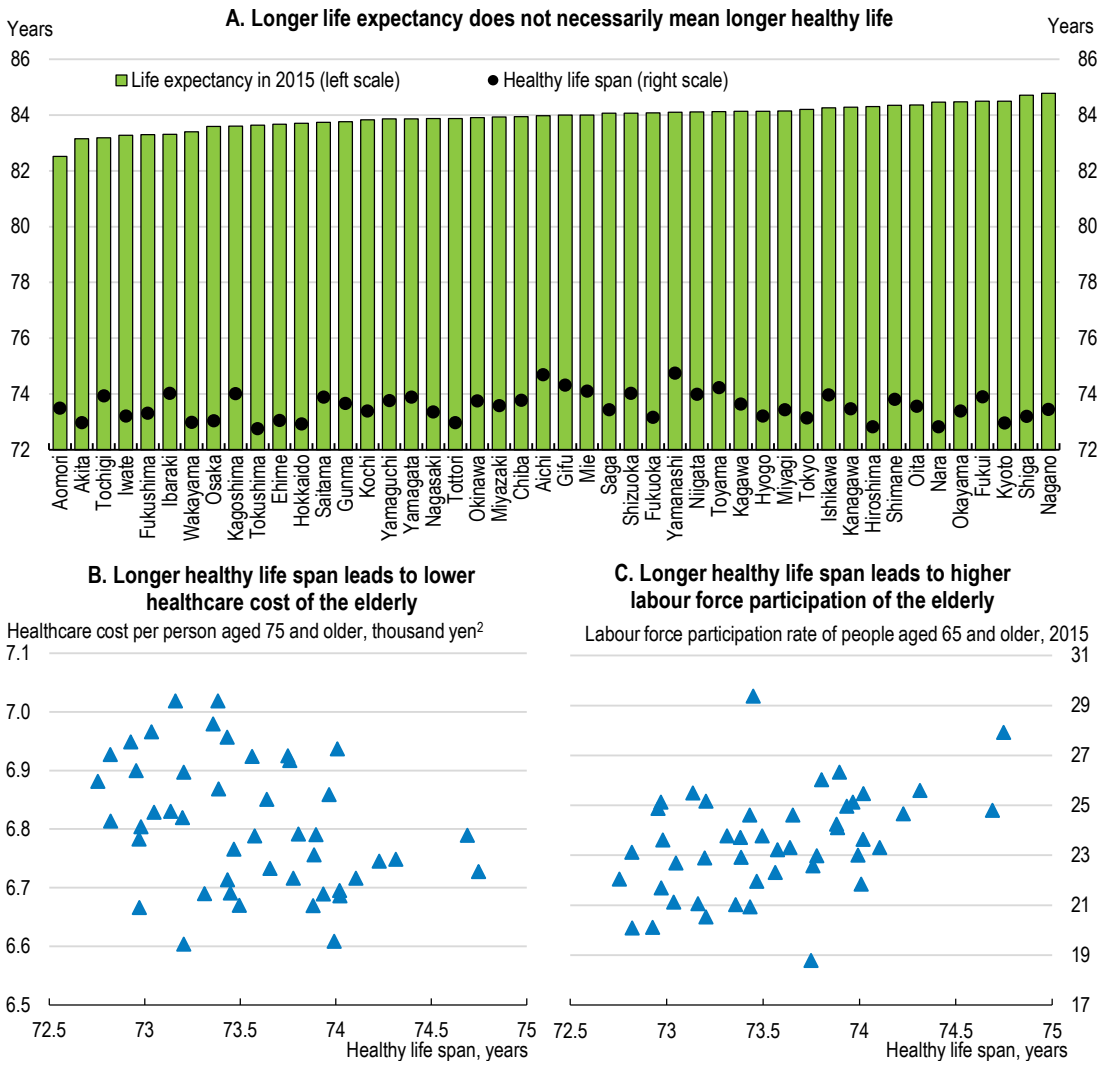
Longer life expectancy does not necessarily imply a longer healthy life span, defined as the number of years that a person can enjoy daily life without constraints due to health problems. The correlation between life expectancy and the healthy life span is low across Japan's 47 prefectures (Figure 10, Panel A). According to government estimates, the

healthy life span was 72.1 years for men and 74.8 years for women in 2016, well below their respective life expectancies of 81.0 and 87.1 years. In other words, elderly men and women experience an average of nine and 12 years, respectively, of unhealthy life. A longer healthy life span is correlated with lower per capita healthcare costs for those aged 75 and older (Panel B). It is also correlated with higher labour force participation rates for those aged 65 and older (Panel C), which may partly reflect a positive effect from employment on the mental health and functional capacity of Japanese elderly (Minami et al., 2015). Lengthening the healthy life span has important implications for both controlling health spending and increasing the productive population to finance the social security system.

Figure 10. Longer healthy life spans curb health costs and increase elderly employment

In 2016[1]



1. Data for the healthy life span in Kumamoto prefecture is not available due to the 2016 Kumamoto earthquake.
2. The vertical axis shows the natural log of a thousand yen, after adjustment for differences between prefectures in age distribution.
Source: Ministry of Health, Labour, and Welfare; Ministry of Internal Affairs and Communications; and OECD calculations.

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In Japan, the leading causes of death are non-communicable diseases (NCDs), such as cancer, cardiac disorder and vascular disease, which are closely related to lifestyle habits. Indeed, the healthy life span has been shown to be closely linked with habits of daily exercise, a healthy diet, and lower consumption of alcohol and tobacco (Murray et al., 2015). Improving lifestyle habits is thus essential to extend healthy life spans.

To tackle the rise in NCDs, the government launched a nation-wide programme in 2008 that requires all public healthcare insurers to conduct "specific health check-ups" and provide "specific health guidance" (SHCSHG) for persons aged 40-74 years. The objective is early detection of risks, notably of diabetes, and promoting changes in the lifestyle habits of individuals facing high risks. There is no consensus on whether the SHCSHG has indeed helped to improve health. The coverage of check-ups in 2016 was 51.4%, well below the government's target of 70% by 2023. In addition, only 18.8% of those examined received specific health guidance, well below the goal of 45%. The discrepancy in the coverage of SHCSHG across health insurers is large, with the rate of check-ups higher among full-time employees. Increasing the effectiveness of health guidance is a prerequisite for raising the take-up rate of check-ups among the entire population (Sakamoto et al., 2018). In the "Data Health Project" promoted by the government, insurers analyse receipt data for healthcare services, which could potentially help improve the effectiveness of SHCSHG. Ensuring a common architecture of electronic receipt data analysis is critically important to track the health status of individuals even as they change insurers due to job changes. Finally, strengthening linkages between health guidance and primary care is another priority (Matsuda, 2015).

More efficient use of healthcare resources

Reducing the number of hospital beds and improving their allocation

The Japanese health system relies heavily on hospitals. On a per capita basis, the total number of hospital beds and acute-care beds is the highest among OECD countries, while the number of beds in long-term care facilities is much lower (Table 2). Given such large investments in hospitals, persons who could be cared for at home or in long-term care facilities tend to stay in hospitals instead. In addition, the average hospital stay in Japan is the longest in the OECD and more than three times the OECD average, increasing costs. The heavy reliance on hospitals is a major source of wasteful spending, as hospital care is much more expensive than home or long-term care. The scope for improving the allocation of healthcare resources is thus large.

Long hospital stays are closely linked to the number of hospital beds (OECD, 2017b). The economic and fiscal revitalisation plan requires prefectures to develop Community Healthcare Visions, which project healthcare demand in 2025, and develop strategies to optimise the regional allocation of medical resources through sharing and co-ordination among healthcare facilities. In the prefectures' visions for 2025, excess hospital beds accounted for 5.7% of the total number of beds in 2016. In addition, there is a significant mismatch in their medical functions, with too many acute and chronic-care beds and a shortage of convalescent-care beds (Table 3). Regions with the highest percentage of excess beds tend to have greater mismatches in their medical functions (Figure 11) and higher per capita hospitalisation costs (Panel B). Costs in the prefecture with the highest percentage of excess beds are more than twice those in the prefecture with the lowest percentage. The central government and prefectures should take all necessary measures to resolve both quantitative and qualitative mismatches of hospital beds by revising and implementing the community visions to optimise the allocation of medical resources.

Table 2. International comparisons show room for healthcare cost savings in Japan

In 2017 or latest year available

	Number of doctor consultations per capita per year	Share of private expenditure on outpatient care (%)	Average total hospital stay[1]	Average hospital stay for acute care[1]	Total number of hospital beds[2]	Number of acute-care beds[2,3]	Number of long-term care beds[2,3]	Number of beds in long-term care facilities[2]
Japan	12.8	16.9	28.5	16.3	13.1	7.8	2.7	6.5
OECD average	7.4	31.7	8.4	6.6	4.9	3.7	0.7	7.6
Highest country	17.0	59.7	28.5	16.3	13.1	7.8	4.8	12.9
Lowest country	2.8	12.4	3.8	4.0	1.5	1.5	0.0	0.7

1. In days.
2. Per 1 000 population.
3. In hospitals.
Source: OECD Health Statistics database.

Table 3. Hospital beds are in excess and there are significant mismatches in their functions

	Highly acute	Acute	Convalescent	Chronic	Total
Benchmark for 2025[1]	130 450	400 628	375 172	284 246	1 190 495
Actual numbers in 2016[2]	169 995	588 712	141 677	358 129	1 258 513
Excess or shortage (%)	30.3	46.9	-62.2	26.0	5.7

1. Sums of the benchmark numbers of beds based on projected medical needs in 2025, which are reported in the Community Healthcare Visions developed by prefectural governments.
2. Hospital beds that are not in use and whose functions are not reported are excluded.
Source: Prefectural governments, *Community Health Care Visions* and *FY 2016 Reports on Medical Functions of Hospital Beds*.

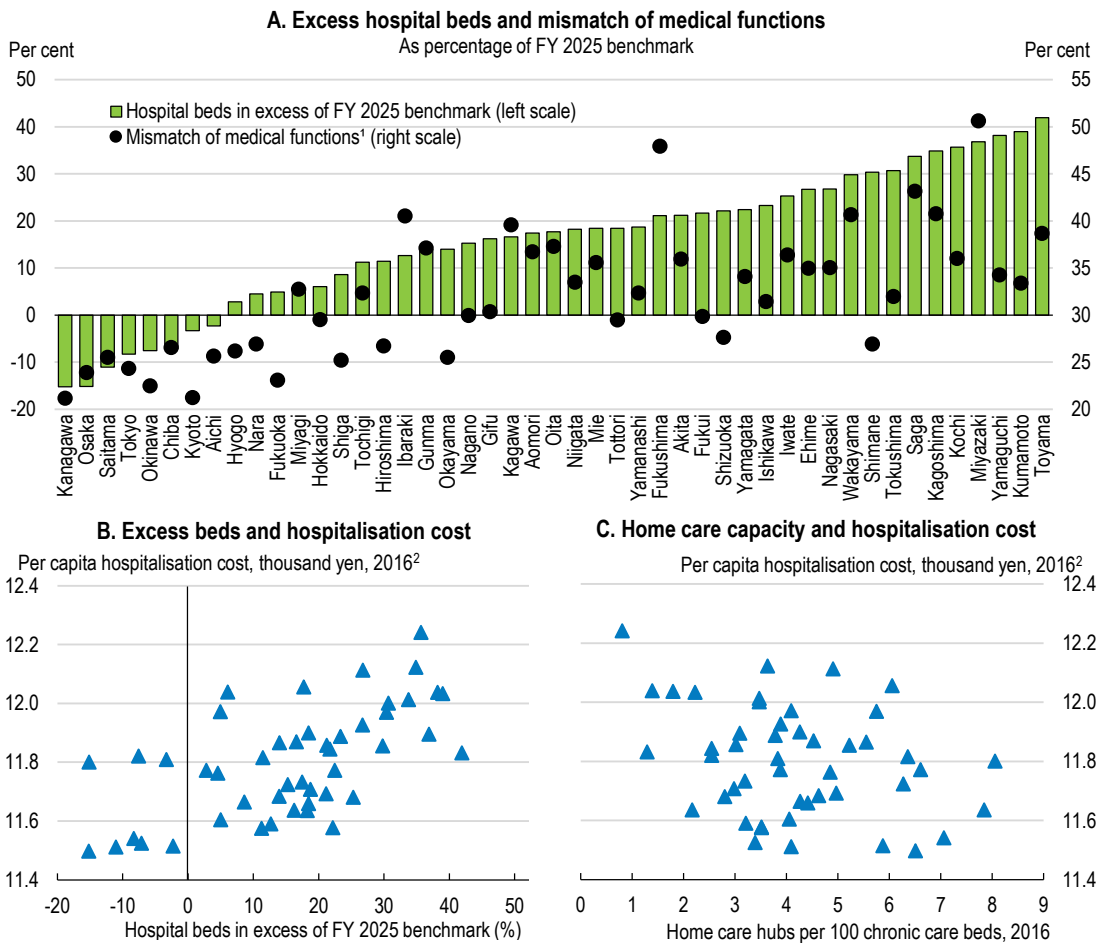
Providing incentives to shift medical resources into home-care service is another priority. Per capita hospitalisation costs tend to be lower in regions with a sufficient number of home-care support hospitals and clinics (so-called hub institutions) relative to chronic care beds (Figure 11, Panel C). Hub institutions maintain 24-hour contact with patients at home and provide doctor and nursing visits. Expanding home-care capacity would also enhance the quality of life of patients. According to a government survey, 47% of people prefer to be treated at home rather than in a hospital or a long-term care facility in cases of terminal cancer. Although only 29.3% and 14.8% prefer home-care in the case of serious cardiac illness or dementia, a majority of people want to receive end-of-life treatment at home irrespective of the type of terminal illness (75.7%, 82.5% and 89.6% in cases of terminal cancer, cardiac illness, and dementia, respectively) (Ministry of Health, Labour and Welfare, 2017).

Reducing the high level of spending on pharmaceuticals

Pharmaceuticals accounted for 40% of the rise in health spending over FY 2000-16 (Figure 9). Japan's per capita consumption of pharmaceuticals is the third highest in the OECD, driven by population ageing and the low use of generic drugs. In 2016, the government introduced a Health Technology Assessment to adjust the price at which pharmaceuticals are reimbursed by insurance. This system should be extended to a wider range of pharmaceuticals. In addition, some countries, such as Italy, New Zealand, Poland, Spain, Sweden and the United Kingdom, base the decision on whether to include a

medicine in national health insurance coverage on its impact on patients' quality-adjusted life years. Japan's Health Technology Assessment initiative should perform a similar role.

Figure 11. Excess beds tend to lead to greater hospitalisation costs



1. Defined as the distance of the actual numbers of beds for each function from the FY 2025 benchmarks relative to the FY 2025 benchmark for total beds.
2. The vertical axis shows the natural log of a thousand yen. A gap of one unit corresponds to 100% difference.
Source: Ministry of Health, Labour, and Welfare, *National Health Expenditure*; Ministry of Internal Affairs and Communications; Prefectural governments, *Community Health Care Visions*, *FY 2016 Reports on Medical Functions of Hospital Beds*; and OECD calculations.

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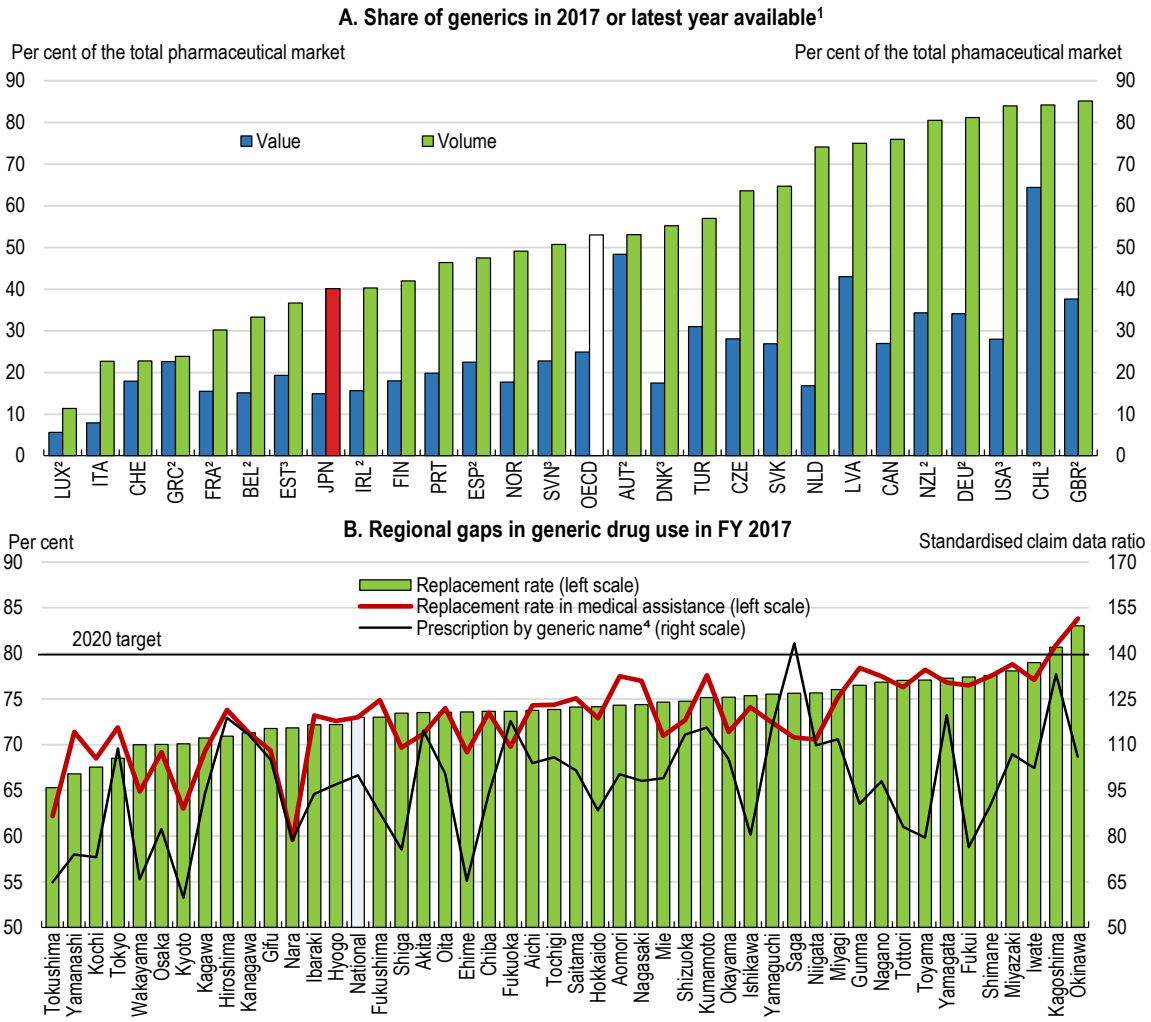
Increased use of generics is essential to control spending on pharmaceuticals. The government set a target to replace 80% of brand-name drugs for which generics are available by generics by 2020. It has also taken measures, such as paying fees to pharmacists whose prescriptions of generics surpass certain thresholds. Consequently, the share of generics in the pharmaceutical market in volume terms increased from 34% in 2015 to 40% in 2017 − though it remains below the 53% OECD average (Figure 12, Panel A). The replacement rate of brand-name drugs, as measured by the government, reached 73% in FY 2017, but there are large regional variations stemming from differences in medical practices as well as public policy. For example, the replacement rates are higher in prefectures where a larger share of drugs are prescribed by their generic name rather than

the brand name and where medical assistance in the Basic Livelihood Protection Programme promotes greater use of generics (Panel B). The FY 2018 medical fee schedule revision strengthened the preferential treatment for generics, including additional fees paid to doctors who give prescriptions using the generic name and penalties for pharmacies with a replacement rate below 20%. In addition, the government proposed using generics in medical assistance. Increasing the share of generics beyond the 2020 target would require further efforts to narrow the regional gaps and make generics the standard for reimbursement for every prescription.

Figure 12. The use of generic drugs is low in Japan



1. Including medical non-durables.
2. Reimbursed pharmaceutical market.
3. Community pharmacy market.
4. Based on prescription and medical bill data in FY 2015. The numbers are expressed in the standardised claim data ratio, which compares the actual number of receipts in each prefecture with the national average normalised as 100.

Source: OECD Health Statistics database; Ministry of Health, Labour, and Welfare; and Cabinet Office, *Visualisation Database*.

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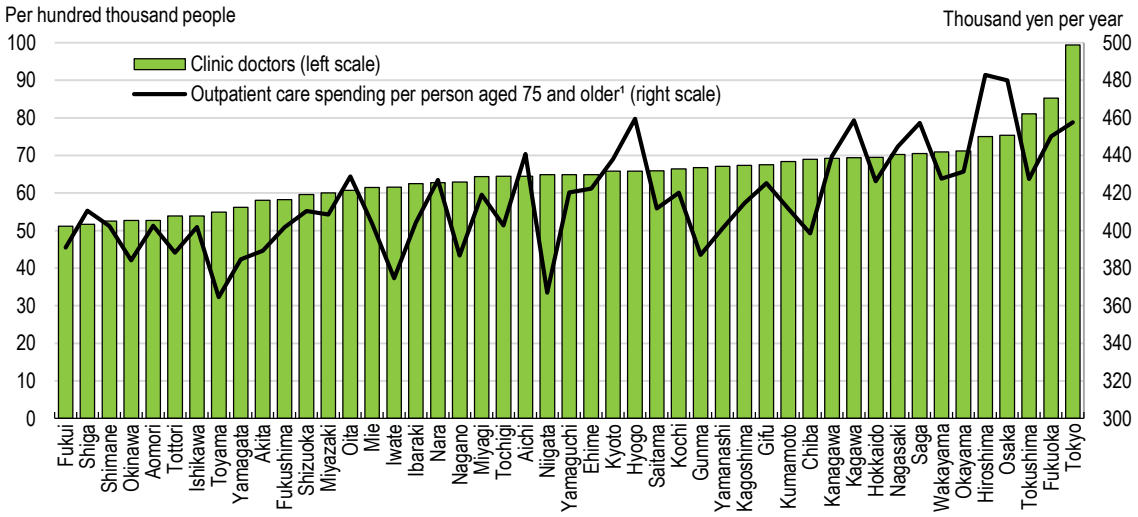
Limiting spending on outpatient care

Outpatient care accounted for 22% of the rise in health spending over FY 2000-16 (Figure 9). Japan stands out for exceptionally frequent medical consultations, which averaged 12.8 times per year per person, well above the OECD average of 7.4 (Table 2), reflecting a high number of visits by the elderly. The frequent use of outpatient care may be partly supply-induced, as suggested by the correlation between the number of clinic doctors in a prefecture and age-adjusted outpatient spending of persons aged 75 and older, although other factors, such as the share of elderly in a region, play a role (Figure 13). Shifting from a fee-for-service to a pay-for-performance system, which offers financial incentives to providers that meet performance standards, would help contain outpatient spending.

Figure 13. More clinic doctors is associated with more intensive outpatient care

In 2016



1. After adjustment for difference in age distributions between prefectures.
Source: Ministry of Health, Labour, and Welfare.

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Low out-of-pocket payments are another factor driving the high number of medical consultations. Private expenditures cover only 16.9% of the cost of consultations in Japan compared to the OECD average of 31.7% (Table 2), reflecting the wide coverage of health insurance. While the working-age population pays the standard 30% rate, the co-payment rate is reduced to 20% for persons aged 70 to 74 and 10% for those aged 75 and older, subject to a means test. A married couple with an income over JPY 5.2 million (USD 46 400), which is well above the average income of JPY 4.2 million, pays the 30% rate. In addition, co-payments for outpatient care are limited to a ceiling of 18 000 (USD 161) per month for most persons aged 70 and older.

As population ageing advances, maintaining such preferential treatment for the elderly will impose increasingly heavy burdens on the working-age population. Given that persons in the 70-74 age group have been paying a 20% co-payment since 2014, when a special measure to reduce their co-payments to 10% expired, the 20% rate could be continued at age 75 and older. There is also scope for increasing the share of elderly who pay the 30% co-payment rate by lowering the annual income criterion. The income ceilings on co-

payments for the elderly should be in line with those for the working-age population. Ultimately, the principle of ability to pay should be based on financial assets held by the elderly as well as their income. The Social Security and Tax Number System ("My Number") has been linked to bank deposits since 2018, though it is voluntary at present and can only be used for limited purposes such as tax inspection. A system to judge co-payment capacity based on financial assets should be introduced when the government reviews the My Number system in 2021 and eventually real assets should be taken into account as well. Finally, introducing a small flat-rate fee on outpatient care for all groups would boost the low share of out-of-pocket payments.

The Act on Assurance of Medical Care for Elderly People allows application of different medical service fees in certain prefectures as a last resort as part of a Health Expense Adjustment Plan. Given considerable variations in per capita income and health conditions across prefectures, different fees can be justified. While this option has never been used, the economic and fiscal revitalisation plan requires defining the conditions under which this option is applicable. The government should take necessary steps so that this provision can be used when necessary.

Long-term care insurance

The 2.7-times rise in long-term care spending following the introduction of long-term care insurance in 2000 is the highest among social security programmes. This is primarily a result of the expanding number of care recipients, reflecting the increasing number of elderly and the rising share of them that are eligible for long-term care benefits under the insurance programme. The number of care recipients rose by 2.5 times over 2000-16, reaching 18% of the elderly population. To finance the increase in spending, the long-term care insurance premium, which must be paid by everyone aged 40 and over, increased by 2.8 times on average for persons aged 40-64 over FY 2000-18 and by 2.0 times for those over 65. For those unable to pay the premium, it is covered by social welfare. The government projects that the pace of increase in long-term care spending will continue to be the fastest among social insurance programmes.

Given the projected surge in the elderly population, shifting the focus to effective care services is essential to reduce the eligibility rate by improving the health status of the elderly and thereby control long-term care spending. Long-term care insurance provides benefits for those who are certified as needing care, with the amount and scope of services classified into five care levels (Table 4). In addition, long-term care insurance has provided preventive care since FY 2006 for those who are certified as needing assistance. The eligibility rates by prefecture for higher levels of care needs are correlated with the share of persons aged 75 and older. However, the share of those receiving assistance does not show a correlation with age, resulting in wider regional variations. This suggests significant scope for better targeting preventive care on those with the greatest needs.

The 2017 amendment of the Long-Term Care Insurance Act calls for introducing the payment of additional fees to care providers whose preventive care and rehabilitation programmes reduce the care needs of the recipients. Several local governments had been operating these so-called pay-for-performance (P4P) programmes but the empirical evidence about their effects is mixed. Some studies argue that the apparent success of the programme in some local jurisdictions is the result of the selective referral of recipients with higher potential for reducing care needs by the care managers affiliated with care providers (Iizuka et al., 2017). A nation-wide P4P programme should be introduced with a

careful incentive design, including a review of vertical integration of service providers and care managers and the introduction of risk adjustment for performance measures.

Table 4. Long-term care eligibility rate for persons aged 65 and older

In 2016

	Need for assistance[1]		Need for care[2]				
	Level 1	Level 2	Level 1	Level 2	Level 3	Level 4	Level 5
Spending share (%)	1.7	3.3	14.2	18.4	20.8	22.2	19.3
Eligibility rate							
National average (%)	2.5	2.5	3.6	3.1	2.4	2.2	1.7
Highest prefecture (%)	4.1	3.4	4.7	3.9	3.1	3.4	2.3
Lowest prefecture (%)	0.7	1.5	2.6	2.5	2.0	1.8	1.3
Standard deviation	0.70	0.46	0.49	0.33	0.26	0.30	0.28
Correlation with the share of age 75 and older	0.02	0.15	0.54	0.47	0.60	0.72	0.75

1. A level 2 need for assistance is higher than level 1. Preventive care is available for those who are certified.
2. Level 5 is the highest level of need for long-term care and level 1 is the lowest.
Source: Ministry of Health, Labour and Welfare.

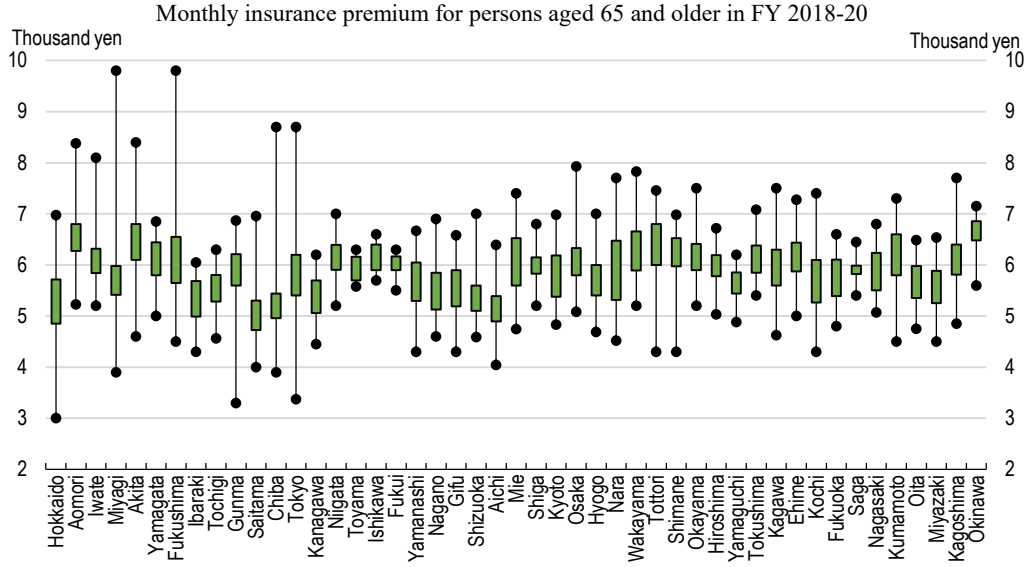
Coverage of long-term care insurance should be reviewed to exclude unnecessary services for those with less severe needs. Preventive care, other home-care service and living support accounted for 41.2% of the rise in long-term care costs over FY 2000-16. In particular, it is necessary to limit assistance, including living support (housecleaning, shopping, cooking, etc.), for which demand tends to be induced by providers (2017 *OECD Economic Survey of Japan*), while giving priority to care needs. Day care services could be reduced as well. In addition, the scope for combining care not covered by insurance with that which is covered (so-called "double billing") should be expanded.

Increasing co-payments is another priority to limit the projected rise in long-term care costs. Private expenditure covered 8.4% of long-term care spending in 2016, much lower than the 15.9% for total health spending. In 2015, the government increased the co-payment rate from 10% to 20% for those with annual income (including pension benefits) greater than JPY 2.8 million (USD 25 000). The co-payment rate was further raised to 30% in 2018 for those with income above JPY 3.4 million. While the reform is in the right direction, the 30% rate applies to less than 3% of the recipients. Further increasing the coverage of higher co-payment rates should be considered. In addition, co-payments should be based on assets as well, as discussed above for healthcare insurance.

The surge of the insurance premium has been accompanied by widening gaps between insurers, which are municipalities or their associations. On a nationwide basis, the monthly premiums for persons aged 65 and older range between JPY 3 000 (USD 26.8) and JPY 9 800 in FY 2018-20. There are significant differences between the highest and the lowest premiums even within a prefecture: the gap exceeds JPY 5 000 (USD 44.6) per month in several prefectures (Figure 14). The wide gaps reflect in part differences in service quality and in scale. While municipalities are deemed to be the appropriate unit to provide care in a community, they are less effective as insurers, especially in small towns and villages. It would be better to move the responsibility for long-term care insurance from municipalities to the prefectural level, as was done for National Health Insurance in 2018. This would also lower premiums through risk pooling.

Figure 14. Long-term care premiums significantly vary across municipalities

Monthly insurance premium for persons aged 65 and older in FY 2018-20



Note: The bars represent insurance premiums between the 25 and 75 percentiles in each prefecture. Upper and lower ends of the solid lines show the highest and the lowest premiums in each prefecture.
Source: Ministry of Health, Labour and Welfare.

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Ensuring adequate income for the elderly

Pension reform

Japan's public pension system includes the National Pension, which is mandatory in principle for the self-employed, students, part-time workers who are not eligible to join the Employees' Pension Insurance (EPI) and full-time homemakers whose spouses are not covered by the EPI. The EPI includes a flat-rate portion, which equals the full benefit under the National Pension, and an income-related portion. The failure to set the income-related benefits in line with indexation plans in place has resulted in overpayment of benefits since FY 2000:

- Price indexation of benefits was not fully applied over 2000-14 in the context of deflation.
- In 2004, the government decided to adjust pension benefits in line with wage growth when it is less than CPI inflation (as long as both were positive). Under the 2016 reform, which aims to make pension benefits secure for future generations, benefits will be based on wage growth when it is negative and less than CPI inflation beginning in FY 2021. If the 2016 reform had been implemented earlier, pension benefits would have been lower.
- In 2004, the government introduced "macroeconomic indexation", which adjusts pension benefits based on changes in the number of contributors and life expectancy. However, it has not been fully applied (OECD, 2017b).

These overpayments contributed to a fall in the reserve fund of the Employees' Pension Insurance, which declined on a book value basis from JPY 136.8 trillion (26% of GDP) in FY 2000 to JPY 111.9 trillion in FY 2017, despite the rise in the pension contribution rate from 13.6% in FY 2004 to 18.3% in FY 2017. The carryover system introduced in FY 2018,

which will incorporate cancelled benefit revisions in years of negative inflation to later years, will improve the effectiveness of macroeconomic indexation. In addition, a rule to base benefits on wage growth when it is less than CPI inflation is to be enforced from FY 2021. However, the rule that prohibits a negative revision to pension benefits from macroeconomic indexation is still in place. This will lead to the overpayment of benefits, which will need to be corrected sometime in the future under the carryover system. To avoid this, macroeconomic and price indexation should be allowed to operate fully, even under deflation or low inflation of around 1% or less.

While applying macroeconomic indexation would ensure the long-term financial balance of the pension system, it does not guarantee income security for the retired. To provide adequate income for the elderly and reduce their high relative poverty rate, the pension eligibility age should be further increased. It is set to reach age 65 for men in 2025 and in 2030 for women, but many OECD countries have raised pension eligibility beyond that age. Moreover, some countries, including Denmark and the Netherlands, have linked future increases in the pension eligibility age to life expectancy. Increasing the eligibility age beyond 65 would substantially raise the replacement rate, increase employment of the elderly, improve intergenerational equity and lift output growth (Jones and Seitani, 2019).

Strengthening the financial basis of the Basic Pension, which includes the National Pension and the flat-rate portion of the EPI, is another key to reinforce income security for the elderly. The share of the population contributing to the National Pension bottomed out at 58.6% (excluding those covered by EPI) in FY 2011. Despite rising for six consecutive years since then, it was still low at 66.3% in FY 2017. If persons exempted from paying contributions are excluded, the actual contribution rate was only 40.3%. With fewer people eligible to receive the full Basic Pension benefit, which was JPY 64 941 (USD 580) a month in 2018, the number of elderly relying on social welfare will rise significantly (see below). The contribution rate is lower among youth, suggesting that they have less confidence in the public pension system. Raising the eligibility age would allow an increase in Basic Pension benefits, thus helping to strengthen confidence in the programme.

Another measure to ensure adequate income for the elderly is to break down labour market dualism and reduce the number of non-regular workers, thereby increasing the coverage of the EPI. Moreover, deduction of pension insurance premiums at source under the EPI would also increase the low contribution rate of non-regular workers to the mandatory Basic Pension. A 2016 reform expanded the coverage of the EPI to include part-time workers in firms with more than 500 employees. While part-timers in smaller firms have been entitled to join the EPI based on an agreement between management and labour since 2017, mandatory coverage should be expanded further, which would also help increase pensions. At the same time, the government should strengthen measures to reduce the number of firms that fail to pay the employers' share of pension contributions.

Promoting private pensions to complement public pensions would also help promote adequate retirement income for the elderly. A 2015 government survey reported that 28.8% of respondents had joined individual private pensions (Ministry of Health, Labour and Welfare, 2015). In 2017, the Defined Contribution Pension Act was amended to entitle the self-employed, full-time homemakers, and government employees to join defined contribution pension plans for individuals (called "iDeCo"), which receive income deductions for contributions and tax exemptions for investment returns. In addition, in 2018, an annual capital income tax exemption scheme called Dollar-Cost Averaging NISA (Nippon Individual Savings Account) was established. It has a longer tax-exempted holding period (20 years) than that of a standard NISA (five years) for eligible assets up to

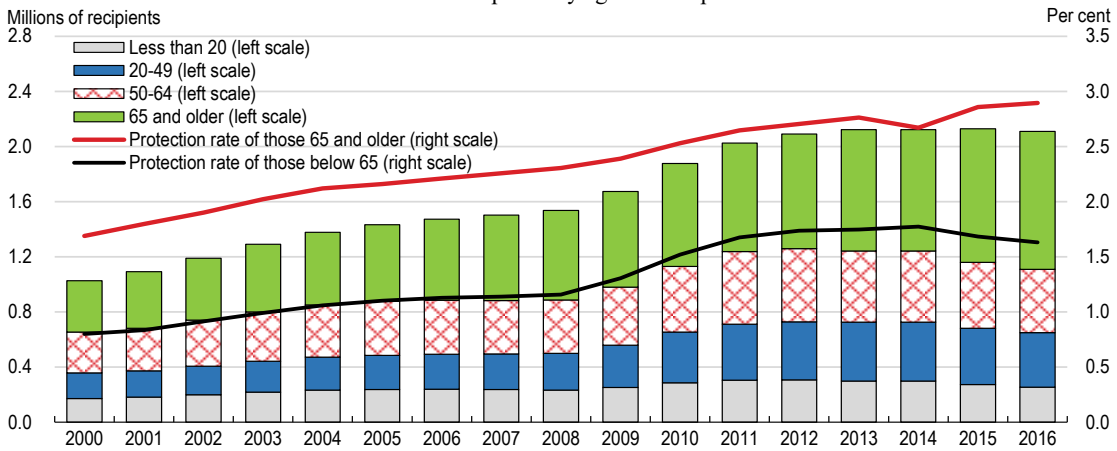
JPY 400 000 (USD 3 571) per year that meet certain requirements This is an important first step to promote private pension plans and long-term, regular and diversified personal investment. The government should consider measures, including those that are not limited to tax incentives and exemptions, to encourage greater use of private pension plans.

Minimum income security in the rapidly ageing society

Population ageing in Japan is rapidly greying social welfare programmes. The Basic Livelihood Protection Programme (BLPP) assists those of all ages with an income below the minimum standard of living who meet the eligibility criteria, which take into account their assets and the ability of family members to provide help. Among recipients of the BLPP, the share age 65 and older rose from 36.3% to 47.4% over 2000-16 (Figure 15). The share of the elderly receiving the BLPP (the so-called "protection rate") rose from 1.7% to 2.9% over that period, raising the gap with the under-65 age group from 1.1 to 1.7 percentage points. The rise in the elderly's protection rate seems to have been driven primarily by further ageing of the elderly, which reduces opportunities to work. Moreover, the BLPP helps overcome weaknesses in the Basic Pension system. Given the projected rise of the share of the population above age 75, the protection rate of the elderly is likely to rise even faster, while the number of working-age recipients has fallen, reflecting the long economic expansion.

Figure 15. A rising share of social assistance recipients are elderly

Number of BLPP recipients by age and the protection rate



Source: Ministry of Health, Labour and Welfare; Ministry of Internal Affairs and Communications; and OECD calculations.

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In addition, the average duration of benefits for aged households was 9.7 years in 2016 compared to 5.3 years for working-age households without disabilities or sickness (Table 5). In 2016, death was the major reason (60.9%) for ending BLPP payments to the elderly, while only 2.4% left the programme because of an increase of employment income. In contrast, 30% of working-age households (excluding those with disabilities or illness) left the programme thanks to increased employment income. Population ageing is thus putting serious fiscal pressure on the tax-financed BLPP, which shows the importance of a strong public pension system. In the medium to long run, increased spending for the rising number of old-age recipients could crowd out BLPP assistance for low-income households of working age. In addition, some elderly are excluded from the BLPP by the criterion that

prohibits support to those with the possibility of family support. The effectiveness of the contribution-financed Basic Pension in reducing elderly poverty is limited by its small monthly benefit of JPY 64 941 (USD 576), which is below the minimum living standard set by the BLPP (JPY 80 000 for a single person in Tokyo), excluding housing and medical assistance and other benefits. It would be preferable to create a social insurance system under the Basic Pension for the current working-age population to provide minimum-income security when they are elderly (Oshio, 2018). This would also require raising participation in the Basic Pension, as noted above, to entitle everyone to receive a full pension.

The BLPP has a number of problems in addition to population ageing. The top priority is to reduce the high effective tax rates on persons who leave the BLPP to accept full-time employment. Raising the lump-sum benefit for recipients leaving the BLPP, which is based on the amount they earned while receiving public assistance, should be the first step. In addition, it is important to improve training and job support for working-age BLPP recipients with weak skills. Regional gaps in the participation rate in the programme as well as its outcomes are significant. The government should identify best practices and disseminate them to other regions. Moreover, Japan should introduce an earned income tax credit (EITC), an in-work benefit for low-income earners that encourages work (2017 *OECD Economic Survey of Japan*).

Table 5. Elderly BLPP recipients face difficulty in becoming self-sufficient

In 2016

	Elderly households[1]	Single-mother households	Households with disabilities or sickness	Other households
Average duration of protection (years)	9.7	5.3	7.3	5.3
Reason for end of protection (%)				
Increase of employment income	2.4	32.2	14.4	36.3
Death	60.9	1.1	24.0	4.8
Disappearance	3.4	1.2	9.5	17.0
Other	33.2	65.6	52.2	41.9

1. Households that consist of persons aged 65 and older only, or with persons aged below 18.
Source: Ministry of Health, Labour and Welfare; and OECD calculations.

Policies to ensure sustainability of local government services

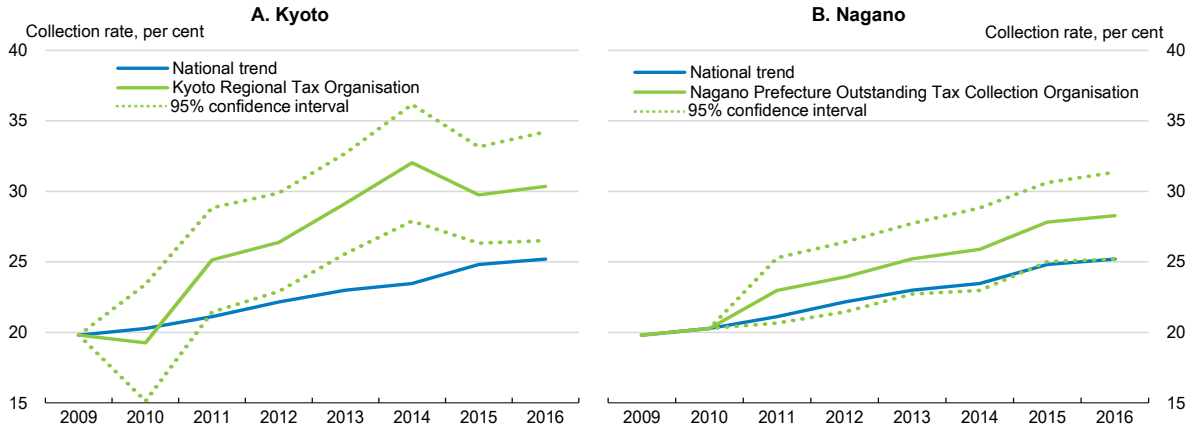
Improving the efficiency of local government administration

Japan has 47 prefectures with 1 741 municipalities (23 Tokyo special wards, 792 cities, 743 towns and 183 villages). Local government spending accounts for 35% of primary public spending and 45% of their primary revenues are transfers from the national government. Containing spending at the local level is therefore a priority for fiscal consolidation (Figure 5). While each Basic Policy on Economic and Fiscal Management and Reform since 2015 has called for local governments to pursue fiscal consolidation in tandem with the central government, many face severe demographic challenges. Indeed, population is shrinking more rapidly in regions where it is ageing faster, which drives up per capita public spending due to fewer economies of scale as well as higher age-related health and long-term care spending. At the same time, a shrinking and ageing population reduces taxable income. Achieving fiscal consolidation at the local government level therefore requires a strategy that explicitly takes into account differences in regional population trends.

A promising way to cope with the different pace of population ageing is to promote joint operation of local public administration among neighbouring municipalities to achieve economies of scale. The Local Autonomy Act allows municipalities to form an association specialised in a specific area of public administration. It also permits the creation of inter-jurisdictional associations between prefectures and municipalities to integrate administration across a wider area. Such cooperative efforts have begun in a wide range of local services, including collection and disposal of garbage, fire and disaster management, healthcare for persons aged 75 and older and long-term care. Joint initiatives have also been launched for the collection of outstanding tax bills. In particular, associations covering all municipalities in a prefecture were launched in Shizuoka, Kyoto (excluding Kyoto City) and Nagano. While other types of cooperation helped increase the nationwide collection rate of outstanding taxes from 20% in FY 2009 to 25% in FY 2016, the prefecture-wide cooperation approach outperformed the nationwide average by around 3-5 percentage points (Figure 16).

Figure 16. Cooperation within a prefecture improves the efficiency of municipal tax collection

Impact of wide-area associations within a prefecture on municipal coercive tax collection,[1] in 2009-16



1. Based on an ordinary least square regression of the coercive tax collection rates of 1 740 municipalities on common year dummies, individual municipality dummies and dummy variables for municipalities that joined the associations in Kyoto and Nagano prefectures. Dotted lines show 95% confidence intervals of the estimates.
Source: Ministry of Internal Affairs and Communications; and OECD calculations.

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Enhancing the efficiency of public services is essential to control local government spending. In FY 2016, the government launched the "Top Runner" programme, which made the most efficient local governments the basis for calculating local allocation tax grants (the key transfer from central to local governments). The grants are based on the unit costs achieved in local governments that carried out administrative reform in 16 services (out of a total of 23). The programme added two additional services in FY 2017. Large cities have advantages in reducing costs, for example by outsourcing and making greater use of cloud computing. Indeed, towns and villages with an average population of 30 000 did not introduce any outsourcing of back-office activities (services such as record maintenance, accounting, and counter services) while cities with a population of 500 000 or more did so for four to six activities. In jurisdictions with no outsourcing, average per capita administrative costs were 4.5 times higher (Table 6, Panel A). Even after controlling for a number of other relevant factors, outsourcing significantly reduces per capita

administration cost, but the effect is smaller for municipalities with smaller populations (Panel B). The impact of cost reduction is estimated to reach a maximum of 5.3% in jurisdictions with a population of around 400 000.

Table 6. Larger cities achieved lower administrative costs through administrative reform

A. Number of outsourcings and per capita administration costs of 1 731 municipalities[1] in FY 2015

Number of outsourced back-office activities[2]	Number of municipalities	Average per capita administrative cost for back-office activities (thousand yen)	Average population (thousand persons)
0	958	1 643	30 000
1	456	1 004	65 000
2	216	984	142 000
3	63	639	275 000
4	20	514	542 000
5	16	583	497 000
6	2	363	781 000

B. Estimated impact of outsourcing on per capita administration cost[3]

Periods included = FY 2000, FY 2005, FY 2010, FY 2015: cross-sections included = 1 731

Variables[4]	Estimate	t-ratio[5]	
Constant	2.242	12.39	***
Number of outsourced tasks	**0.692**	**3.16**	***
Number of outsourced tasks * population	**-0.116**	**-2.97**	***
Number of outsourced tasks * squared population	**0.004**	**2.62**	***
Population	-4.136	-11.18	***
Squared population	0.145	7.94	***
Population density	0.286	2.16	**
Population ratio of age 75 and older	-0.277	-0.62	
Population ratio of below age 15	-1.288	-2.32	**
Per capita taxable income	0.384	3.40	***
Adjusted R^2	0.855		

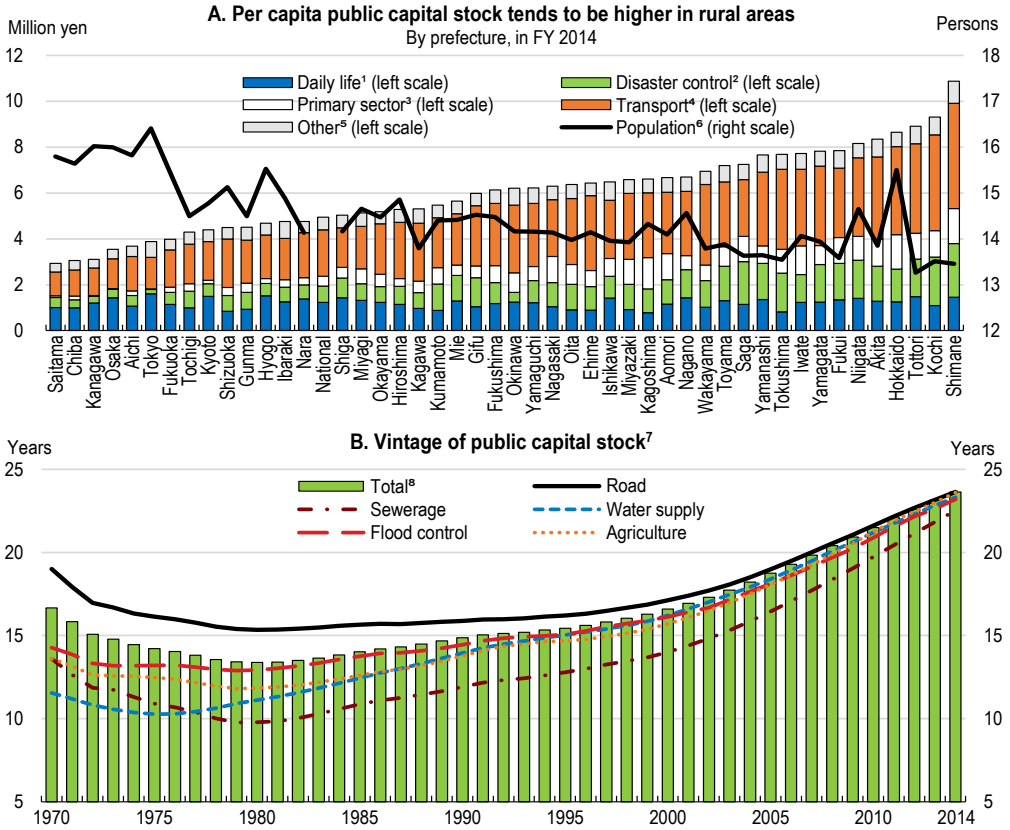
1. Municipalities whose per capita administrative costs for general affairs exceeded JPY 2.5 million are excluded as outliers. Most of them are in the area affected by the Great East Japan Earthquake of 2011.
2. In 2014. Number of fully or partly outsourced tasks of processing payrolls, travel expense, welfare packages for officers, accounting service, and counter service.
3. Estimated by a panel ordinary least squares regression with fixed individual and time effects.
4. Per capita administrative cost of back-office activities, population, population density and per capita taxable income are in logarithmic scales. Considering that outsourcing of back-office activities through tendering became possible in 2006, the number of outsourced tasks takes values only in FY 2010 and FY 2015.
5. ** and *** indicate that the estimates are statistically significant at 5% and 1% levels of significance, respectively.
Source: Ministry of Internal Affairs and Communications; Cabinet Office, *Visualization Database*; and OECD calculations.

Small municipalities face disadvantages in outsourcing because their small scale of operation impedes economies of scale while making it costly to split tasks into elements that can be outsourced and those that must be reserved for themselves as part of their exercise of public authority. While the Top Runner programme was supposed to cover all 23 types of tasks in three to five years, no new tasks were added in FY 2018, leaving five tasks outside of the programme. Further expansion of the Top Runner programme is essential to help small municipalities benefit from administrative reform. Facilitating joint implementation of reforms among municipalities would be a promising option.

Ensuring sustainability of infrastructure investment and maintenance

Achieving economies of scale is crucially important for infrastructure investment and maintenance. Public infrastructure in Japan was intensively developed until the 1990s, boosting the net public capital stock to 125% of GDP in FY 2014, by far the largest in the OECD area (Fournier, 2016). Public investment has been unevenly distributed across regions. Consequently, the public capital stock, on a per capita basis, is higher in less developed rural areas, notably in transport, disaster control and primary sectors (Figure 17, Panel A). In the face of increased social spending in the context of population ageing, gross public investment fell from 6.0% of GDP to 3.5% over FY 2000-07. While there has been some increase in the wake of the 2011 Great East Japan Earthquake, it has remained below 4% of GDP (Figure 3). Consequently, public infrastructure in Japan has aged considerably since the early 2000s (Figure 17, Panel B).

Figure 17. Public capital stock is unevenly distributed by region and is rapidly ageing



1. Public housing, sewerage, water supply and waste disposal.
2. Flood control, forest conservation and shore protection.
3. Agriculture, forestry and fisheries.
4. Road, port, airports, railroad and subway lines.
5. Urban parks, schools, cultural facilities, postal services, national forests and government offices.
6. Natural log of a thousand persons.
7. Estimated under an assumption that capital stock in each sector is disposed following a Weibull distribution. Parameter values of the Weibull distributions follow Cabinet Office (2017). The initial vintage in 1953 is calculated by assuming that the same amount of capital was invested between 1885 and 1952.
8. A weighted average of all 18 sectors.

Source: Cabinet Office (2017); Ministry of Internal Affairs and Communications; and OECD calculations.

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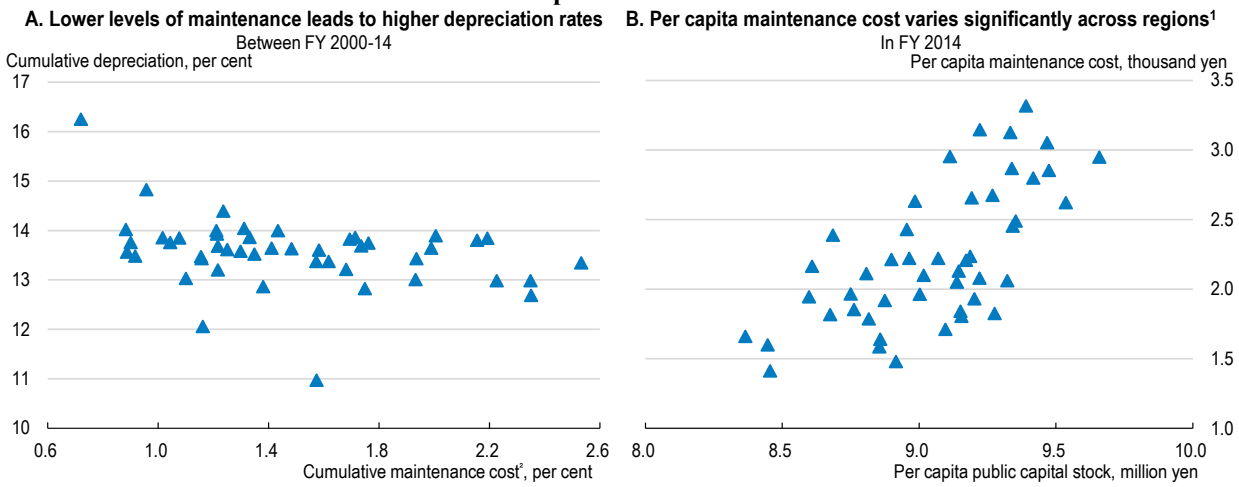
Maintenance is essential to preserve the value of public capital, as indicated by a negative correlation between maintenance spending and the depreciation rate (Figure 18, Panel A). Large stocks of public capital in depopulated regions intensify the fiscal burden on residents, as they bear heavier maintenance costs due to larger per capita stocks (Panel B). Per capita maintenance cost in the highest-cost prefecture is 6.7 times that in the lowest-cost prefecture, suggesting that depopulated regions cannot afford to maintain existing levels of public capital. In addition, a falling population lowers the efficiency of infrastructure operations. For example, the average unit cost of water supply is the highest for enterprises that supply less than 10 000 persons, reflecting low capacity utilisation rates and high non-revenue water ratio (water that has been produced, but is "lost" before it reaches the customer) (Table 7). Many small enterprises cannot cover the cost with higher prices, as local governments generally operate water supply services and municipal assemblies set the prices. Consequently, they depend on transfers from local governments. While the majority of water supply businesses service populations of less than 50 000, operational efficiency rises until population exceeds 500 000. There is thus scope for optimising operating scales through consolidation of public infrastructure.

Greater use of private finance initiatives (PFI) and public-private partnership (PPP) could contribute to increasing efficiency of infrastructure investment and maintenance in areas, such as water supply. The government launched the PFI/PPP Action Plan in 2016, which envisaged projects of JPY 21 trillion (3.8% of 2018 GDP) over FY 2013-22. Projects have met their goals in most targeted areas. The 2018 amendments of the Act on Promotion of Private Finance Initiative gave local governments incentives to introduce concessions for water supply and sewerage. In addition, the 2016 Plan encourages all prefectures and cities with populations greater than 200 000 to adopt a decree to consider introducing PPP and PFI on a priority basis. By FY 2017, 80% of them had done so and the 2018 Action Plan aims to extend this to smaller cities. The government should take account of the financial risks and contingent liabilities in pursuing PPP and PFI.

Figure 18. Infrastructure maintenance costs per capita are higher in less populated prefectures



1. Natural log of a thousand yen.
2. Sum of expenditures for maintenance and repair of each prefecture and municipalities in the prefecture. Converted into real terms based on the deflator for public capital stock. Natural log of a thousand yen.
Source: Cabinet Office (2017); Ministry of Internal Affairs and Communications; and OECD calculations.

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Table 7. Public infrastructure has an optimal scale of operation

Water supply[1] in FY 2016

Supplied population	Number of enterprises	Cost per cubic meter (JPY)	Fare/Cost per cubic meter (%)	Capacity utilisation rate (%)	Non-revenue water ratio[2] (%)
Less than 10 000	229	211.2	91.9	48.0	21.1
Between 10 000 - 50 000	590	171.2	101.2	56.8	16.1
Between 50 000 - 100 000	210	162.2	106.0	59.3	12.1
Between 100 000 - 250 000	152	155.2	106.8	62.6	9.9
Between 250 000 - 500 000	74	148.3	111.2	62.0	8.7
More than 500 000	25	166.8	105.5	59.9	6.8
Total	1 280	162.4	105.8	59.9	9.7

1. Water supply businesses subject to the Local Public Enterprise Act. Simplified water supply businesses for supplied populations of 5 000 or less are not subject to the law and excluded here.
2. Water that has been produced, but is "lost" before it reaches the customer. Losses can be real losses (through leaks), theft or metering inaccuracies.
Source: Ministry of Internal Affairs and Communications; and OECD calculations.

Promoting compact cities to achieve economic, environmental and social benefits

As noted above, the 2014 amendment of the Local Autonomy Act introduced a new framework of inter-municipal cooperation that allows a core city and neighbouring small municipalities to jointly provide public services and create compact cities. Compact cities can deliver a number of economic, environmental and social benefits: *i)* lower energy consumption thanks to shorter intra-urban distances and less reliance on cars; *ii)* higher productivity due to knowledge diffusion stimulated by the high density and diversity of urban areas; *iii)* easier access to local services and jobs; and *iv)* greater efficiency of infrastructure investment and maintenance (OECD, 2012), which is particularly important in the context of an ageing society. Less reliance on cars can contribute to better health by encouraging daily exercise, as suggested by a positive correlation of walking distance per day with urban agglomeration and passenger traffic on public transport (Figure 19). Compact cities can better adapt to changes in public service needs and people's lifestyles in an ageing society, while expanding resources to deliver services.

The economic and fiscal revitalisation plan set a goal by FY 2020 to develop 300 master plans for compact cities, known as "location optimisation plans". While as many as 420 cities had developed plans by 2018, actual changes in population concentration are yet to happen in most cases. Realisation of the measures laid out in the plans would require inter-municipal cooperation in urban planning, notably local public transport networks. Utilisation of the new framework in the Local Autonomy Act would help in this regard.

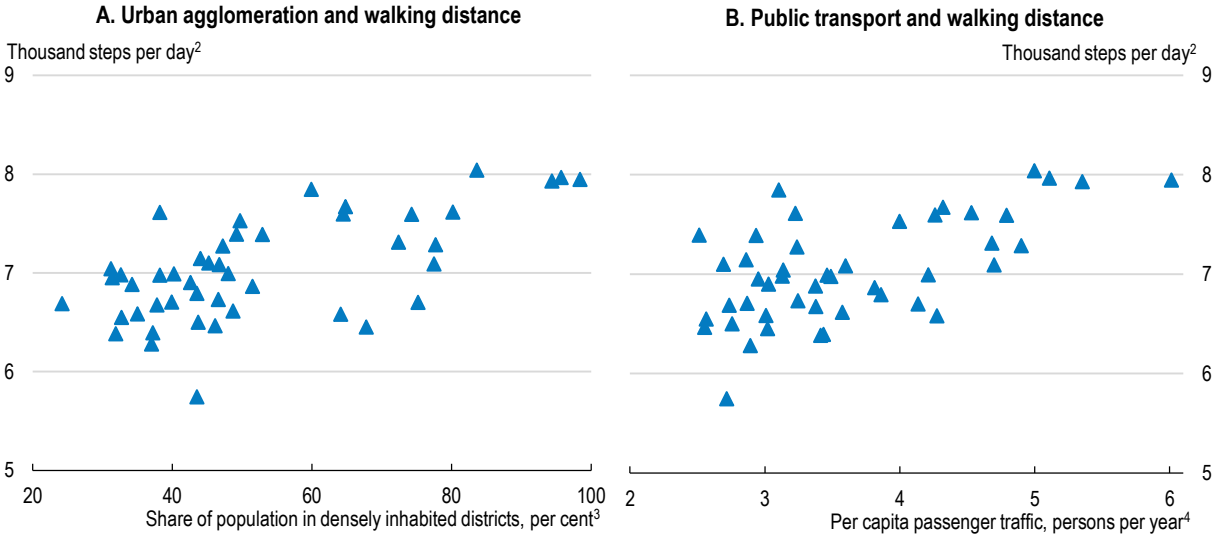
Reinforcing the institutional framework for local land-use

Promotion of compact cities requires redesigning local land-use, which is a problem due to the unidentified landowner problem. Under the Civil Code, inheritance registration of real estate is not mandatory because it is not a requirement for transferring ownership. Consequently, many land ownership transfers associated with inheritance are unregistered, making it difficult to identify the current landowners and resulting in geographical fragmentation. The government estimated that it is difficult to locate owners for 20% of Japan's land, based on a sample of 100 locations (National Land Development Council, 2017). Moreover, the ownership of 19.8% of land was registered more than 50 years ago

and 26.3% more than 30 years ago, so the problem of unidentified owners could become even more serious in coming decades.

Figure 19. Compact cities can build exercise into daily life

In 2016 for 46 prefectures[1]



1. Excluding Kumamoto because data on steps per day is not available due to the 2016 Kumamoto earthquake.
2. Average of men and women aged 20-64, weighted by population.
3. Based on the 2015 National Census.
4. Sum of passengers of routine-run trains and transit buses, using the natural log of a thousand steps.
Source: Ministry of Health, Labour and Welfare; Ministry of Land, Infrastructure, Transportation and Tourism; Ministry of Internal Affairs and Communications; and OECD calculations.

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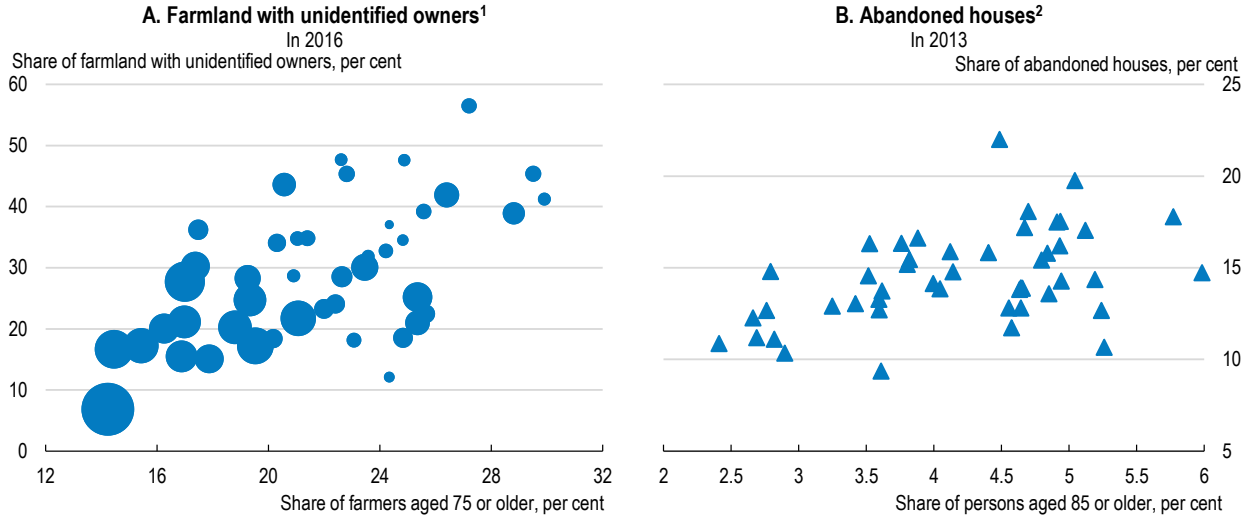
The difficulty of locating landowners poses obstacles to changing land use in both rural and urban areas. For example, it impedes the consolidation of farmland in rural areas, which is essential to strengthen the competitiveness of the agricultural sector, as it is dominated by many small-sized plots that are farmed by part-time farmers (OECD, 2013). According to a government survey, 20.9% of farmland was confirmed or thought to be unregistered in 2016 (Ministry of Agriculture, Forestry and Fisheries, 2016). Leasing those farmlands to full-time farmers is costly, notably in the case of communal farmlands, as the Civil Code requires a majority agreement of co-owners for a five-year lease. The share of unclaimed farmland is higher in regions with older farmers, and such regions lag behind in farmland consolidation (Figure 20, Panel A).

In urban areas, unclaimed land and an increasing number of abandoned houses hinder redevelopment, since municipal governments cannot dispose of houses without their owners' permission. Moreover, abandoned houses expose their neighbours to a risk of collapse. The share of abandoned houses is higher in prefectures with older populations, suggesting that the issue could become more serious as population ageing advances further (Figure 20, Panel B). In addition, many municipalities encounter troubles even in fundamental administrative tasks such as taxation (Box 1).

Figure 20. Landowners are more difficult to locate in more aged regions



1. Farmland whose owners are recorded in the registration book, but are confirmed to be dead or impossible to locate because they have moved. Each bubble represents one of Japan's 47 prefectures and its size represents the share of farmland that is intensively used by large-scale, full-time family farmers and corporate farmers.
2. Each triangle represents one of Japan's 47 prefectures.
Source: Ministry of Agriculture, Forestry and Fisheries; Ministry of Internal Affairs and Communications; and OECD calculations.

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Japan has taken measures to cope with these problems. For example, the 2014 Act on Special Measures Concerning Unoccupied Houses gives municipal governments a subrogation right to dispose of abandoned houses through a summary procedure without intermediate applications or delays. In addition, the 2018 amendment of the Act on Promotion of Improvement of Agricultural Management Foundation facilitates leasing of communal farmland when some owners are difficult to locate by allowing a twenty-year lease based on a majority agreement, instead of a five-year lease under the Civil Code. A 2018 law allows prefectural governors to expropriate unutilised lands for public works and to create land-use rights for public purposes when landowners are difficult to locate.

In addition, the government launched the Basic Policy to Promote Countermeasures to the Unidentified Landowners Problem in 2018. *First*, it requires legislative action by 2019 to strengthen registrars' authority to correct registrations that lack precise records of landowners' names and addresses. *Second*, it calls for drastic reform of the land ownership framework by 2020, including the legal responsibility of landowners, improvement of the inheritance registration system, perhaps by making it mandatory, and the creation of a procedure to waive land ownership. *Third*, it also calls for measures to facilitate cadastral surveys and the reconciliation of information in the land ownership registry book and residence registration records, which are collected separately by the national and municipal authorities. Integrated management of land ownership records is critically important (Yoshihara, 2018). The government should move promptly to implement all of these measures, focusing on the procedure for waiving land ownership and establishing clearly defined custodianship of abandoned lands, which the existing Civil Code does not provide.

Box 1. The scope of Japan's unidentified landowner problem

According to a survey conducted by a non-profit research institution, many municipalities face serious problems associated with locating landowners (Tokyo Foundation, 2016). An anonymous questionnaire was sent in 2016 and received responses from slightly more than half of the property tax authorities in 1 718 cities, towns and villages in Japan, plus the Tokyo Metropolitan Government. Their answers show how widespread the problems are:

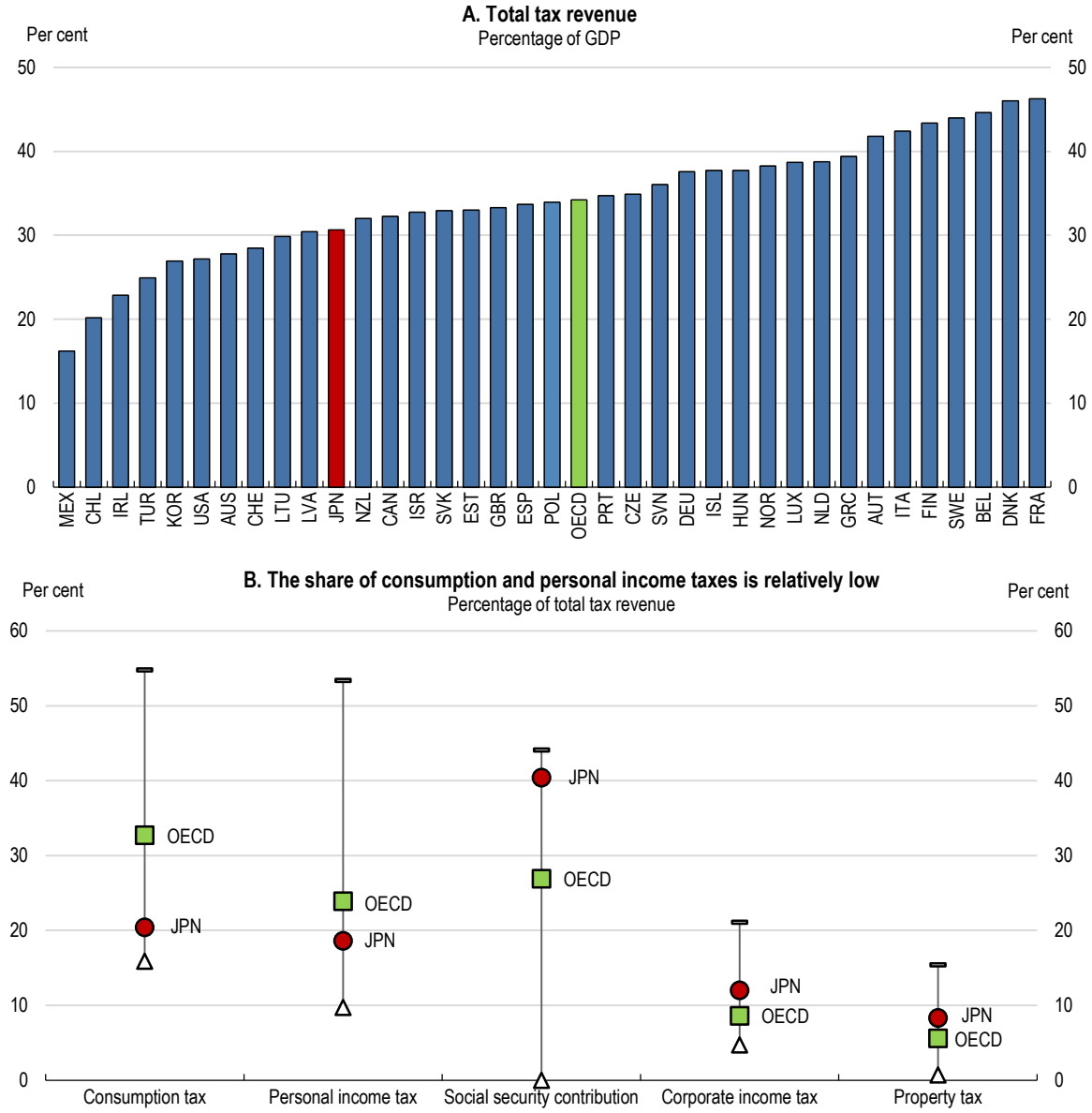
- 62.7% of municipalities had encountered problems related to difficulties in locating landowners.
  - 54.7% faced troubles in taxation of immobile properties.
  - 28.5% found dangers posed by abandoned houses.
  - 26.8% found damage to land.
  - 15.1% faced impediments to public works.
- 82.8% of municipalities were uncertain about how many deceased residents are still subject to taxation. Family members of the deceased often pay the tax, even though they are not the registered owners.
  - Less than 1% confirmed that they do not follow such a practice.
  - 16.4% reported that such practices exist. According to their answers, 6.5% of those subject to taxation are already dead.
- 86.7% of municipalities expected that taxation on deceased residents would increase in the future for two reasons:
  - 45.2% cited an increase in unregistered inheritance.
  - 18.1% cited the difficulty in recognising deaths of landowners who live in other municipalities.
- 22.5% of municipalities had experienced a suspension of taxation. In 77.2% of those cases, the difficulty was locating landowners.

Raising revenue and removing disincentives to employment

Boosting government revenue from its relatively low level should be an essential element of a strategy to achieve fiscal sustainability, particularly as demographic pressures will make it difficult to reduce the level of spending. Social insurance contributions and taxes rose from 25.8% of GDP in 2000 to 30.6% in 2017 but remained below the OECD average of 34.0% (Figure 21, Panel A). The lower share reflects smaller contributions from taxes on consumption and personal income (Panel B). In contrast, the shares of social security contributions, corporate income tax and property tax in total tax revenue are above the OECD average. Measures to raise revenue should take account of the rising share of elderly, who are projected to exceed 38% of the population by 2050. It is essential to increase the share of economically active persons to help finance social security by eliminating distortions in the tax system that discourage employment, while enhancing its redistributive function to achieve an optimal tax mix.

Figure 21. Japan's tax and social security burden is relatively low

In 2017 or latest year available



Source: OECD Revenue Statistics database.

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Further hikes in the consumption tax are needed

A greater role for the consumption tax would improve intergenerational equity, as the elderly would bear more of the tax burden. Indeed, a person born in 1940 receives 16.4% of lifetime earnings in net transfers, while one born in 2010 pays 12% (OECD, 2017b). In addition, the consumption tax is a relatively stable revenue source and is less harmful for economic growth, as it imposes fewer distortions on employment and investment. As noted above, a fiscal consolidation of between 5% and 8% of GDP after achieving a primary balance is necessary to reduce the government debt ratio. Achieving this through

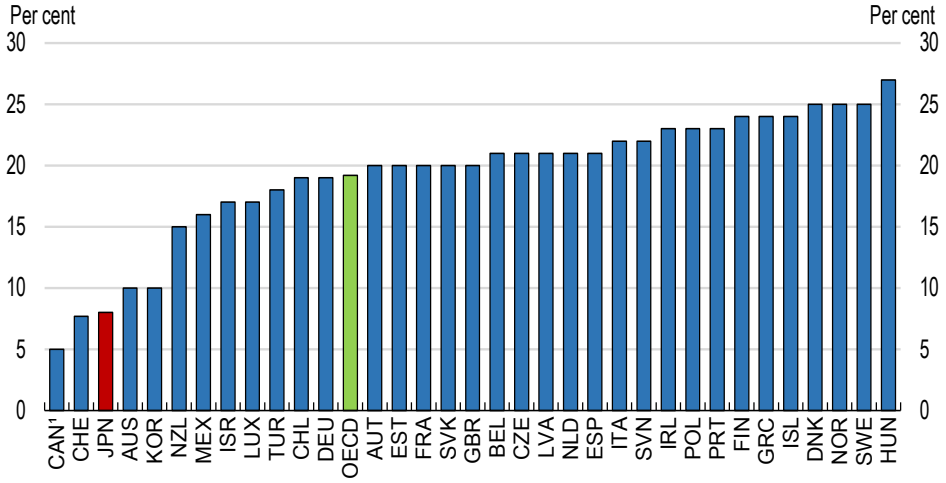
consumption tax hikes alone would require boosting the rate by 10 to 16 percentage points. Consequently, the rate would have to rise from 10%, which would be the third lowest in the OECD, to between 20% and 26%, exceeding the OECD average of 19% (Figure 22). In any case, hikes in the consumption tax rate should be gradual to limit their economic impact. In sum, a VAT is the most appropriate tax for raising revenue in Japan. In addition, raising excise duties on alcohol and cigarettes, which also helps enhance health and reduce healthcare spending, would be a good source of additional revenue.

Japan's single consumption tax rate has been effective in raising revenue. However, an increase in the consumption tax rate above the OECD average would require policies to prevent low-income households from falling into poverty. With the planned increase in the rate to 10% in 2019, the government intends to introduce multiple rates in an effort to soften the regressive impact. However, multiple tax rates are not an effective approach as most of the benefits go to high-income households (OECD, 2018e). The revenue foregone by introducing a lower rate for food and beverages, excluding alcoholic beverages and restaurants, would be better used for a cash transfer programme that compensates low-income households for the consumption tax they have paid. For example, an earned income tax credit (EITC) better targets government assistance on those in need, as well as encouraging their labour force participation.

In addition to failing to promote income equality, a multiple-rate consumption tax limits revenue gains, thus requiring an even higher standard rate. An 8% rate for food and beverages would reduce tax revenue by JPY 1.1 trillion (0.2% of GDP), requiring a standard rate of 10.4% to offset it. Introducing multiple VAT rates has additional drawbacks. *First*, it would entail higher administrative and compliance costs, especially for SMEs. *Second*, it would provide opportunities for fraud through the misclassification of items. *Third*, it would reduce the neutrality of the VAT, thus distorting consumption decisions and decreasing welfare (2017 *OECD Economic Survey of Japan*). In sum, a stronger welfare system targeted at those in need is better than introducing a consumption tax system with multiple rates.

Figure 22. Japan's consumption tax rate is relatively low

Standard VAT rates in 2018



1. In Canada, provinces can levy a consumption tax on top of the federal tax, making it higher than Japan's 8%.
Source: OECD (2018a).

StatLink http://dx.doi.org/10.1787/888933954855

Broadening the personal income tax base and reducing labour supply distortions

Personal income tax revenue in Japan is low as more than half of personal income is exempted by a range of deductions applicable to both married and single households (Table 8). Reducing the wage income deduction, the largest deduction at 30.4% of gross personal income before taxes, is a key to broadening the tax base. The generous deduction for employees is intended to equalise the tax burden on employees and the self-employed, who tend to avoid a significant share of their tax liability (OECD, 2017b). As the Social Security and Tax Number System ("My Number"), which was introduced in 2016, increases transparency of the self-employed, the rationale for the deduction weakens. However, the take-up rate of the My Number cards was only 11.5% of the population as of July 2018. A survey found that the major reasons for not getting an identification card are: *i)* do not see the need (58%); *ii)* have other personal identification documents (42%); and *iii)* worry about leaks of personal information (27%) (Cabinet Office, 2018). Further steps to make the My Number cards more convenient and useful would help increase their use.

Table 8. Japan's personal income tax deductions are more generous than in other countries

Per cent of gross income before taxes in 2017

A. Married household with two children with one worker earning the average wage

	Basic deduction	Spouse deduction	Child-rearing deduction	Deduction for social security contributions and income taxes	Wage income deduction	Other	Total deduction
Japan	7.3	7.3	0.0	14.4	30.4	0.0	59.4
OECD	6.0	1.7	4.9	7.0	1.9	1.7	23.2

B. Single household earning the average wage

	Basic deduction	Spouse deduction	Child-raring deduction	Deduction for social security contributions and income taxes	Wage income deduction	Other	Total deduction
Japan	7.3	0.0	0.0	14.4	30.4	0.0	52.1
OECD	4.6	0.0	0.0	7.0	1.9	1.3	14.7

Source: OECD (2018d).

Moreover, the wage-income deduction will tend to bias workers' choices toward salaried jobs against other work options. In 2020, Japan will address this issue by cutting the deduction by JPY 100 000 (USD 890) for all salaried workers and lowering its maximum amount to JPY 1.95 million (USD 17 355). Meanwhile, the basic deduction that applies to all taxpayers rises from JPY 380 000 to JPY 480 000. In the longer term, the wage-income deduction should be reduced further and turned into a tax deduction whose value is independent of a taxpayer's income.

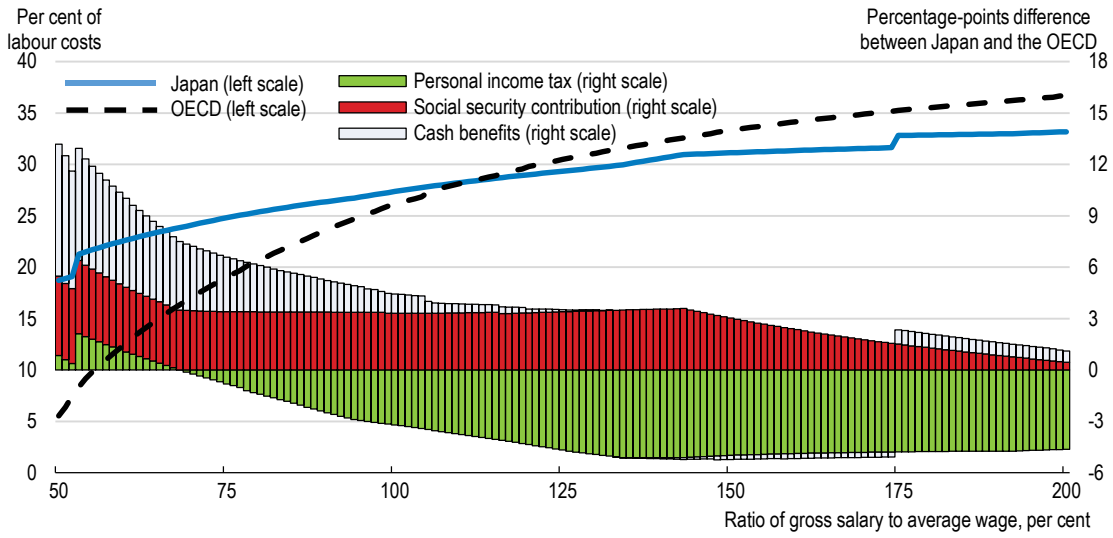
Another important deduction is for spouses, which exempts JPY 380 000 (USD 3 382) from the main earner's taxable income if the second earner's income is below a ceiling. This deduction has encouraged second earners, primarily married women, to reduce working time to keep their income below the threshold (2019 *OECD Economic Survey of Japan*). Moreover, the deduction primarily benefits higher-income households. In 2018, the government raised the ceiling from JPY 1.03 million to JPY 1.5 million (USD 13 350)

and the deduction is no longer available to households in which the primary earner has an income of more than JPY 12.2 million (USD 108 580).

Reforming deductions beneficial to high-income households would help restore the redistributive function of the personal income tax. Under the current tax system, the tax wedge in Japan is relatively flat across the income distribution and significantly higher than the OECD average for low-income families with children (Figure 23). Social security contributions, which are higher than the OECD average for low-income families, contributes to the high tax wedge. Another factor is cash benefits, which are less focused on low-income families than in the OECD area. Japan's personal income tax system is most generous for households with earnings 1.4 times higher than average. From 2020, the basic deduction is subject to an income restriction, The system could be made more progressive by replacing the deductions focused on high-income households with a tax credit targeting lower-income households, which would slightly increase the tax burden on the upper half (2015 *OECD Economic Survey of Japan*). In addition, the focus of cash benefit programmes should shift toward lower-income households.

Figure 23. Japan's tax wedge is high for low-income households

The tax wedge[1] is shown by the lines and the bars show its components relative to the OECD average in 2017



1. For a one-earner married couple with two children, calculated as the difference between labour costs and the sum of personal income tax, employee and employer social security contributions minus cash benefits received by the employee. The positive bar for cash benefits for lower-income households means that cash benefits are less generous than the OECD average, contributing to a higher effective tax rate than the OECD average.
Source: OECD Taxing Wages database.

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Another factor limiting the redistributive impact of Japan's tax system is the public pension deduction, which covers nearly half of pension benefits. Japan will reduce the deduction by JPY 100 000 (USD 890) across the board from 2020, with a deduction cap for pension income exceeding JPY 10 million and a further reduction of the deduction for pensioners who have other income exceeding JPY 10 million. With the rise in the basic deduction by the same amount, the universal reduction of the pension deduction will improve neutrality of the personal income tax system with regard to the elderly's decision to work. On the other hand, only 3 000 pensioners will be subject to the deduction cap, while 200 000

exceed the cap on other income. There appears to be further scope to limit the pension deduction in order to strengthen the redistributive function of the tax system.

Corporate income and capital taxation to promote inclusive growth

Japan reduced its combined (national and local government) corporate income tax rate from 37% in FY 2013, the second highest in the OECD, to 29.74% in FY 2018. The rate is still higher than the OECD average of 23.7%. The FY 2018 tax reform included measures to encourage wage hikes and promote investment to boost output growth. Given the complexity of corporate income taxes, which vary with company size, there is scope to further simplify them to promote investment and growth (OECD, 2018b).

Raising taxes on capital gains and dividends at the personal shareholder level would boost revenue and enhance the progressivity of the tax system. The effective personal income tax rate peaks at slightly below 30% for those with an income between JPY 50 million and 100 million (USD 890 000), and then falls to 17%. This decline reflects the lower tax rate on capital gains, which are concentrated among the highest-income earners. Raising the tax rate for capital gains and dividends from 20% to 25% would boost revenue by about 0.1% of GDP, while improving income redistribution.

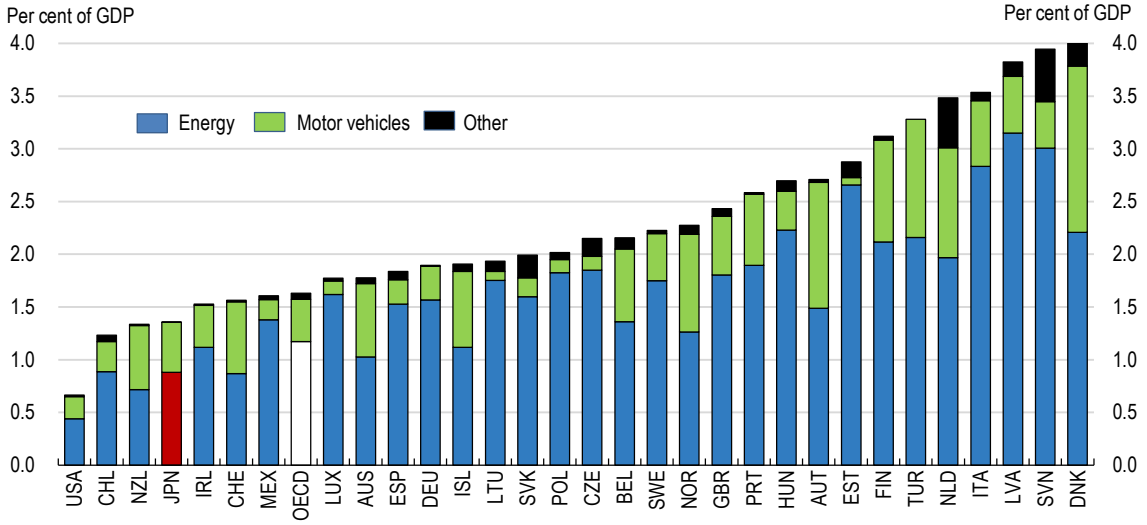
To reduce wealth inequality, a capital income tax is most effective when accompanied by well-designed wealth taxes, such as those on property and inheritances. As it is levied on an accrual basis, a wealth tax can capture deferred or unrealised capital gains, which are difficult to tax under realisation-based income taxation. Of the forms of wealth taxation, an inheritance tax has advantages over a recurrent tax on net wealth. Inherited wealth is taxed only once and when it is in the hands of the recipient rather than the donor. Moreover, an inheritance tax has lower administrative costs (OECD, 2018f). Japan strengthened the inheritance tax in 2015 by reducing the deduction and enhancing the progressivity of tax rates. The number of donors whose bequests were taxed nearly doubled from 56 000 in 2014 to 106 000 in 2016, which accounts for 8% of the deceased. Further broadening this tax base would contribute to equality as well as increasing revenue.

Increasing the use of environmental taxation

The closure of the nuclear power plants following the 2011 Great East Japan Earthquake resulted in a rise in the carbon intensity of Japan's energy mix. Japan's intended Nationally Determined Contribution aims to cut the country's emissions by 26% from 2013 levels by 2030 through a comprehensive approach that promotes energy efficiency and greater use of low-carbon energy sources, such as nuclear and renewable energy. Raising environmentally-related taxes would boost revenue while helping to reduce GHG emissions and achieve other environmental objectives, such as improving air quality. While Japan has taken steps by introducing a CO_2 tax on selected energy products in 2012, environmentally-related taxes were only 1.4% of GDP, the fourth lowest in the OECD in 2016 (Figure 24).

Figure 24. Environmentally-related taxes are low in Japan

Per cent of GDP in 2016



Source: OECD (2018c).

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Main policy recommendations to meet fiscal challenges in a rapidly ageing society

Key recommendations

- Develop a comprehensive fiscal consolidation plan covering specific spending cuts and tax increases, including a further gradual rise of the consumption tax, to ensure fiscal sustainability.
- Take long-term care out of hospitals and shift its focus to home-based care.
- Promote greater use of generic drugs by making them the standard for reimbursement by health insurance.
- Raise the co-payment rate of the elderly for health and long-term care services by establishing the ability-to-pay principle through an effective system for assessing income and assets.
- Step up the promotion of the joint provision of local public services and infrastructure across jurisdictions and the development of compact cities.
- Remove distortions in tax and social benefit systems, such as the spouse deduction, that discourage labour force participation, while increasing the coverage of firm-based social insurance.
- Gradually raise the pension eligibility age above 65 to maintain a sufficiently high replacement rate while taking measures to expand senior employment.

Further recommendations

- Improve the fiscal framework, including taking measures to insulate assessment of macroeconomic and fiscal forecasts and the monitoring of fiscal plans from normative policy-making responsibility.
- Shift the tax mix by reducing the share of social security contributions and increase the share of taxes on consumption and personal income.

- Reduce long-term care insurance coverage by focusing preventive care on effective programmes and removing unnecessary services for those with less severe care needs.
- Improve the effectiveness of health check-ups and health guidance to lengthen the healthy life span.
- Develop measures to balance healthcare supply and demand at local levels, including through the application of different medical service fees by prefecture.
- Enhance the Basic Pension's role of providing income security for the elderly, while focusing the Basic Livelihood Protection Programme on the working-age population and introducing an earned income tax credit.
- Promote greater use of private pension plans to complement public pension programmes.
- Make the inheritance registration system mandatory and integrate management of land ownership records to improve the institutional framework for land-use and address the problems of unidentified owners and abandoned houses.
- Raise taxes on personal capital income to increase the effective tax rate on high-income earners, accompanied by a further broadening of the inheritance tax.
- Increase the coverage of firm-based social insurance and ensure better compliance with the public pension schemes.

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Annex A. Long-term debt sustainability analysis

The evolution of gross debt as a share of GDP (d) depends on the primary balance as a share of GDP (pb) and on the difference between the nominal interest rate and the growth rate of nominal GDP (g) (assuming no sales or purchases of assets):

$$d_t = -pb_t + \frac{1 + r_t}{1 + g_t} d_{t-1} \,.$$

The baseline case in Figure A.1 below (and in Figure 7 in the main text) illustrates the debt dynamics implied by the government's economic and fiscal projections, assuming no fiscal consolidation measures are taken over 2021-60. The debt ratio is calculated under the following assumptions, which are summarised in Table A.1:

- Economic growth, long-term interest rates and public spending through 2020 follow *OECD Economic Outlook,* No. 104. The gap between the nominal interest rate and the growth rate of nominal GDP is 1.6 percentage points, close to the historical average of 1.5 points over 1970-2017.
- The assumptions of economic growth and the long-term interest rate for 2021-27 are based on the "Economic Growth Achieved Case" in the Cabinet Office's *Economic and Fiscal Projections for Medium to Long Term Analysis* (Cabinet Office, 2019). Those for 2028-60 are based on "Case A" in the Ministry of Health, Labour and Welfare's *Actuarial Valuation of Employees' Pension Insurance and the National Pension in FY 2014*, which assumes that total factor productivity growth reaches 1.8% and a rise in labour force participation moderates a decline in hours of labour input to 0.3%, while inflation stays at 2.0%. Case A is compatible with the "Economic Revitalization Case" in the Cabinet Office projections (Cabinet Office, 2014) (Table A.1, Panel A).
- Spending on public pensions, healthcare and other social spending through 2040 is based on the projected spending as shares of GDP in the *Outlook of Social Security Toward 2040: A Reference for Discussion* by the Cabinet Secretariat and other agencies (Cabinet Secretariat et al. 2018). For the period 2041-60, the assumptions are based on the Fiscal System Council's *Long-term Estimations of Japanese Finance* by the Fiscal System Council, 2018 (Table A.1, Panel B).
- Other public spending and revenue are assumed to remain constant as a share of GDP over 2020-60.

In the baseline simulation, the debt ratio reaches 560% of GDP in 2060. The underlying government healthcare spending projections are based on current per capita benefit levels by age, taking changes in the demographic structure into account. This approach is in line with those of the European Commission and the OECD. To gauge the impact of population ageing, a "no ageing-pressure" scenario assumes that healthcare benefits and other social security benefit as shares of GDP are fixed at their 2020 levels. In this scenario, gross debt rises to 455% of GDP in 2060.

To see the impact of recent reforms, a "cost-pressure" scenario assumes that healthcare spending through 2060 linearly increases toward the level projected in 2013, assuming no stepped-up policy action to curb spending pressure (de la Maisonneuve and Oliveira Martins, 2013). The debt ratio then rises to 603% by 2060 (Figure A.1).

Table A.1. Assumptions underlying the long-term debt simulations

A. Macroeconomic assumptions

Average over the period, per cent

	Nominal economic growth rate	Real economic growth rate	Inflation rate	Nominal interest rate
2021-27	3.4	2.0	1.4	1.8
2028-60	3.4	1.4	2.0	5.0

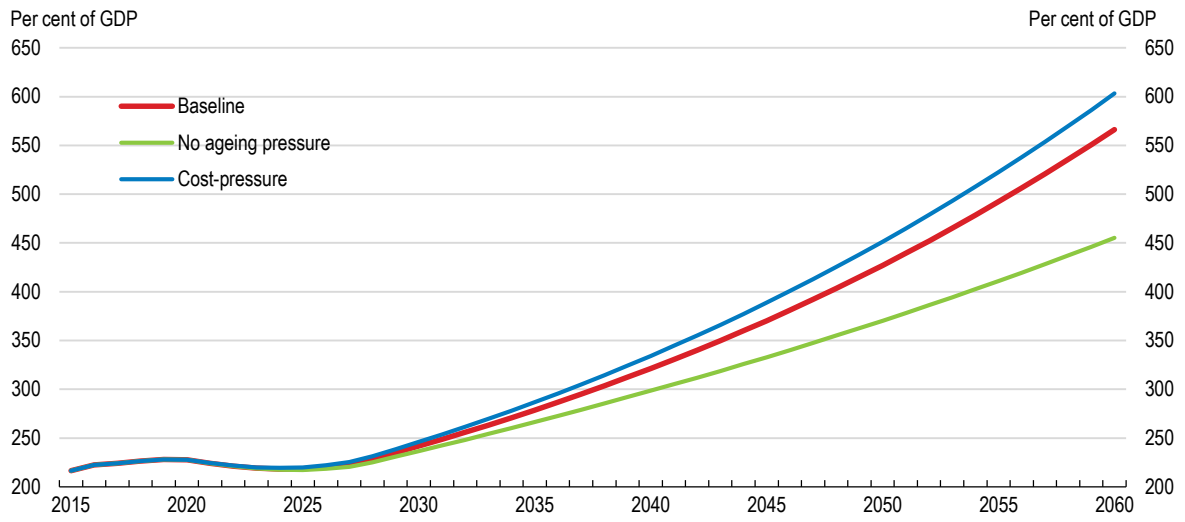
B. Spending and revenue assumptions

Per cent of GDP

	Public pension benefit	Healthcare spending		Other social security benefits	Other public spending	Tax and social security contributions
		Baseline scenario	Cost-pressure scenario			
2020	9.8	9.0	9.2	2.6	15.5	34.3
2025	9.1	9.4	9.8	2.7	15.5	34.3
2040	9.2	11.0	11.8	2.8	15.5	34.3
2060	9.5	13.7	14.5	2.8	15.5	34.3

Source: Cabinet Secretariat, Cabinet Office, Ministry of Finance, and Ministry of Health, Labour and Welfare (2018) ; Fiscal System Council (2018); Cabinet Office (2019); Ministry of Health, Labour and Welfare (2014); de la Maisonneuve and Oliveira Martins (2013); OECD Economic Outlook database; and OECD calculations.

Figure A.1. Long-term gross government debt simulations



Source: OECD calculations.

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