JAPAN: PROMOTING INCLUSIVE GROWTH FOR AN AGEING SOCIETY



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Foreword

Japan has achieved a comparatively high level of well-being: skill levels are high, unemployment is low and life expectancy at birth is the highest in the OECD. Since its launch in 2013, Abenomics has had a positive effect on the economy, and per capita output growth has picked up to around the OECD average. However, to achieve inclusive growth and greater well-being, Japan needs to address important challenges to foster fiscal sustainability, narrow the productivity gap with leading OECD countries and manage the demographic transition.

A new fiscal plan going beyond achieving a primary surplus should lay out concrete measures to raise revenues and control spending. There is scope for Japan to raise tax revenues by relying on less distortive taxes, such as consumption taxes and environmentally-related taxes. Japan's ageing population will continue to put pressure on public spending on health, which is the sixth-highest among OECD countries, and spending on long-term care, which has risen rapidly in the last decade. In this context, it is paramount for Japan to focus on delivering the benefits more efficiently, while ensuring equity and affordability.

As Japan's elderly population is projected to reach nearly three-quarters of the working-age population by 2050, using all available talent in the labour market is key to overcome labour shortages. This will require creating better work conditions for youth, incentivising employment for the elderly, attracting foreign workers and closing gender gaps in job quality to promote the inclusion of women.

To achieve gender equality, Japan will need to actively work towards closing the 25% gender pay gap, which is the third-widest in the OECD. Reforming the culture of long working hours, encouraging flexible employment and continuing to improve access to high-quality childcare would help Japan to close gender gaps.

Productivity has been stagnant, despite a high level of R&D investment of more than 3% of GDP. To boost productivity, Japan needs to increase returns from R&D, through enhanced co-operation between industry and academia, stronger integration in international research networks and regional innovation. Fully capitalising on the digital economy is also at the heart of raising productivity, as well as boosting the dynamism of small and medium-sized enterprises through regulatory reforms and better access to finance. In addition, reducing barriers to foreign direct investment and trade and promoting greater integration into global value chains have the potential to enhance Japan's productivity, by incorporating global best practices and acquiring new capabilities. Japan's education system is one of the top performers in the OECD, but there is scope to further invest in teachers and schools to reinforce their capacity to implement the revised curriculum.

Finally, further action to foster green growth and environmental quality would require greater deployment of low-carbon energy sources, promoting R&D in innovative low-carbon technologies, encouraging green finance and further improving resource efficiency. Effectively leveraging upcoming international sports events, such as the Rugby World Cup 2019 and the Olympic and Paralympic Games Tokyo 2020, would also boost local development and inclusive growth.

The complementarity of reforms needed to achieve inclusive and sustainable growth in Japan makes a compelling case for a comprehensive approach. The OECD is proud of its long-standing policy dialogue with Japan and looks forward to supporting the Japanese government with its reform agenda to promote and implement better policies for better lives.



Angel Gurría
OECD Secretary-General

Key recommendations

- Create a new medium-term fiscal plan that lays out a detailed and concrete consolidation strategy that goes beyond the goal of a primary surplus to ensure Japan's fiscal sustainability over the long term.
- Gradually raise government revenues as a share of GDP, while shifting the mix away from social security contributions and corporate income taxes towards less distortive revenue sources, in particular consumption taxes and environmentally-related taxes.
- Continue to implement significant reforms of the health and long-term care systems to improve financial sustainability, while carefully monitoring the impact on equity.
- Reform the culture of long working hours, and encourage a shift to flexible employment and a wage system based on ability rather than seniority, while abolishing the right of firms to set a mandatory retirement age.
- Ensure effective implementation of the redesigned curriculum centred on students (i.e. motivating them and recognising their prior knowledge, skills, attitudes and values).
- Strengthen support for lifelong learning and workplace training to ensure that adults have opportunities to improve their skills and participate fully in the digital transformation.
- Foster greater collaboration between industry and academia by focusing on the demand side, including through the use of incentives such as innovation vouchers and public procurement for innovation.
- Reduce barriers to trade and inward FDI, including in key services sectors, particularly those that play an important role in global value chains and digital innovation, with a view to boosting competition and productivity.
- Advance corporate governance reforms, especially with respect to cross-shareholdings and independent directors, and align the remuneration of key executives and the board with the longer-term interests of the company and its shareholders.
- Effectively leverage the Rugby World Cup 2019 and the Olympic and Paralympic Games Tokyo 2020 to create local employment and tourism strategies that result in long-term positive outcomes.
- Establish a strategy towards the long-term climate goal by 2050, and consider steps for radical low-carbon transformation by aligning policies across the government, promoting R&D in innovative low-carbon technologies, including energy efficiency, renewables and nuclear, and disseminating such technologies.

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1 Introduction

Since the launch of Abenomics in 2013, output growth on a per capita basis has accelerated to a rate close to that of the OECD area, but per capita output remains nearly 20% below the top half of OECD countries. Policies to promote inclusive growth are needed to narrow the gap and improve well-being. Productivity, 26% below the top half of OECD countries, needs to be increased through a wide range of structural reforms. To achieve inclusive growth, it will be necessary to narrow the productivity and wage gaps between sectors and regions and between large firms and small and medium-sized enterprises (SMEs). Given Japan's unprecedented demographic transition, it will also be essential to implement measures to increase labour force participation by underutilised segments of its population, especially women. Population ageing is also aggravating Japan's fiscal situation. With the general government debt-to-GDP ratio reaching the highest level ever seen in the OECD area, policy steps to enhance inclusive growth also need to be accompanied by fiscal consolidation, including measures to boost revenues and limit the growth of spending, to ensure fiscal sustainability over the long term. While Abenomics has had a positive economic effect, the reform process needs to continue to cope with the challenges of ageing, fiscal sustainability and regional well-being.

How's life in Japan? A mixed picture

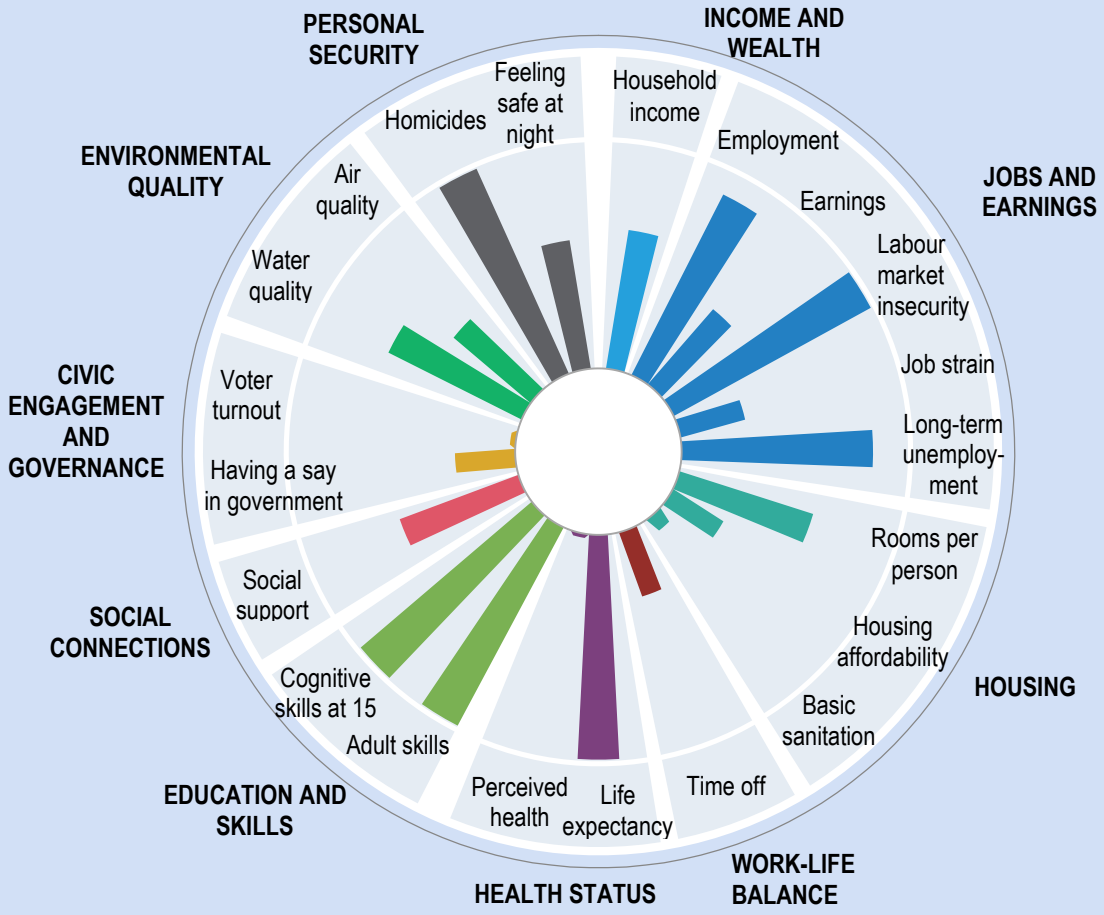
Japan's performance across different dimensions of well-being is mixed (Figure 1.1). The skills of both adults and students are among the best in the OECD. The employment rate is relatively high, and long-term unemployment is very low. However, job strain is a concern, and both earnings and household income are below the OECD average. While household financial wealth ranks near the top, housing conditions are relatively poor.

Despite the highest life expectancy at birth in the OECD, only 35% of Japanese people perceive their health to be "good" or "very good", less than half of the OECD average. Exposure to air pollution has declined, but there remains scope to improve environmental quality, which is currently close to the OECD average. Overall, life satisfaction in Japan has declined over the past decade, to a level below the OECD average.



FIGURE 1.1. JAPAN'S WELL-BEING RECORD IS MIXED

OECD Better Life Index, with longer (shorter) lines showing areas of relative strength (weakness)



Source: OECD (2017a), How's Life? 2017: Measuring Well-being, OECD Publishing, Paris, http://dx.doi.org/10.1787/how_life-2017-en.

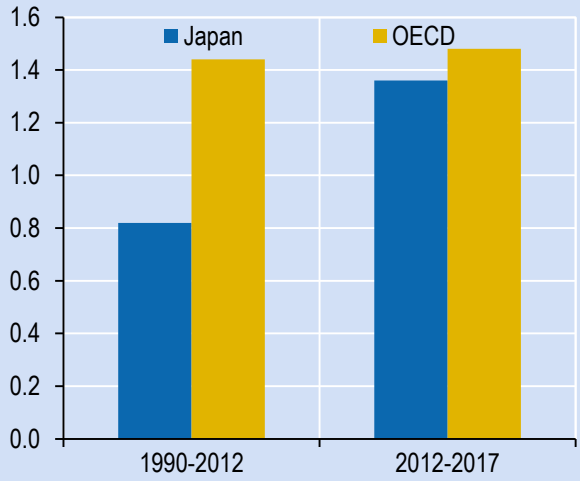
Well-being outcomes reveal a high degree of inequality in a number of dimensions. Although the skills gap between the top and the bottom of the population is low compared to other OECD countries, income is unevenly distributed. Indeed, the income of the top 20% of households is six times higher than that of the bottom 20%, placing Japan among the most unequal third of OECD countries. The relative poverty rate is the sixth highest in the OECD area. Regional inequality is significant, with low-performing regions less well positioned than the OECD average in most dimensions of well-being (OECD, 2016a). In addition, the gender wage gap in Japan is more pronounced than the OECD average. Women earn on average 25% less than men, the third-largest gap in the OECD, and they are three times more likely to be in low-paid jobs, reflecting the concentration of women in non-regular employment. Compared to those with tertiary education, people with only secondary education experience significant disadvantages in perceived health, having a say in government and feeling safe. Furthermore, their children score 10% lower on tests of cognitive skills at age 15 than the children of those with tertiary education. Reducing inequality in well-being outcomes is an essential element of promoting inclusive growth.

Japan's per capita output growth averaged 0.8% per year over 1990-2012, well below the 1.4% rate for the OECD area (Figure 1.2). Consequently, per capita output in Japan, which was 8% below the top half of OECD countries in 1990, declined in relative terms during two decades of weak growth (Figure 1.3). In 2013, Japan launched Abenomics with three arrows to revitalise the economy: a bold monetary policy, flexible fiscal policy and a growth strategy.

Abenomics had an immediate positive effect. Per capita output growth accelerated to 1.4% per year over 2012-17, close to the rate for the OECD area (Figure 1.2). However, total output growth has failed to meet the government's target of 2% per year. Japan's per capita output in 2016 was 19% below the top half of OECD countries (Figure 1.3).

FIGURE 1.2. JAPAN'S PER CAPITA OUTPUT GROWTH HAS PICKED UP

Per capita output growth (%), Japan and OECD average



Source: OECD Economic Outlook database.

Challenges to improving well-being and achieving inclusive growth

The deterioration in Japan's income level relative to the top half of OECD countries since 1990 reflects a significant decline in labour inputs (in the context of a shrinking working-age population) and stagnant growth in labour productivity. Indeed, output per hour of work has flatlined since 1990, and it was 26% below the top half of OECD countries in 2016 (Figure 1.3), despite Japan's strengths in education and skills and the fourth-highest level of R&D investment (as a share of GDP) in the OECD. Improving well-being and promoting inclusive growth thus requires policies to narrow the productivity gap and cope with demographic ageing.



Stagnant labour productivity growth

In December 2017, the government launched the New Economic Policy Package, which aims to double labour productivity growth from 0.9% per year to 2.0% by 2020. The Package incorporates fiscal and regulatory measures to boost the labour force and investment to raise productivity, including: 1) a reduction in educational costs borne by families, including free childcare for children age 3-5; 2) financial support for investments in Information and Communication Technologies (ICT) by SMEs, as well as tax measures to facilitate business successions when owners retire; 3) tax incentives for wage and investment increases; 4) further reform in corporate governance; and 5) regulatory reform, including the creation of regulatory sandboxes and development of digital infrastructures for the fourth industrial revolution. In short, the Package should enhance inclusive growth.

FIGURE 1.3. PER CAPITA OUTPUT AND LABOUR PRODUCTIVITY REMAIN WELL BELOW THE TOP HALF OF OECD COUNTRIES

Per capita income, labour productivity and labour inputs relative to top half of OECD (=100)



Note: Compared to the weighted average using population weights of the 17 OECD countries with highest GDP per capita in 2016, based on 2016 purchasing power parities (PPPs). The sum of the percentage difference in labour resource utilisation and labour productivity do not add up exactly to the GDP per capita difference, since the decomposition is multiplicative.

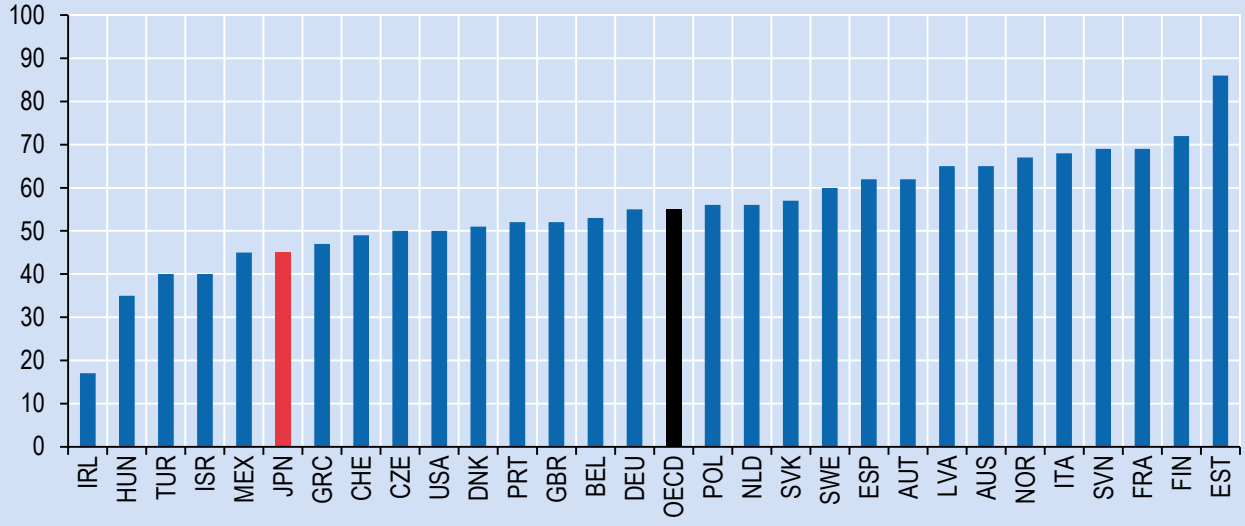
Source: OECD (2018), OECD Economic Outlook: Statistics and Projections (database).

As in many countries, the productivity gap between leading and lagging firms in Japan has widened dramatically over the past two decades. In addition, evidence from OECD countries shows a positive correlation between productivity gaps between firms and wage inequality (OECD, 2017b). The dispersion of productivity in Japan is slightly above the OECD average, while the dispersion of labour income is one of the highest.

Raising productivity and achieving inclusive growth require narrowing the productivity and wage gaps between sectors and regions, as well as between large firms and small and medium-sized enterprises (SMEs). Indeed, labour productivity is weak, mainly in the service sector and in firms with 10-49 workers. It was only 45% of that in large firms in 2013, compared to the OECD average of 55% (Figure 1.4).

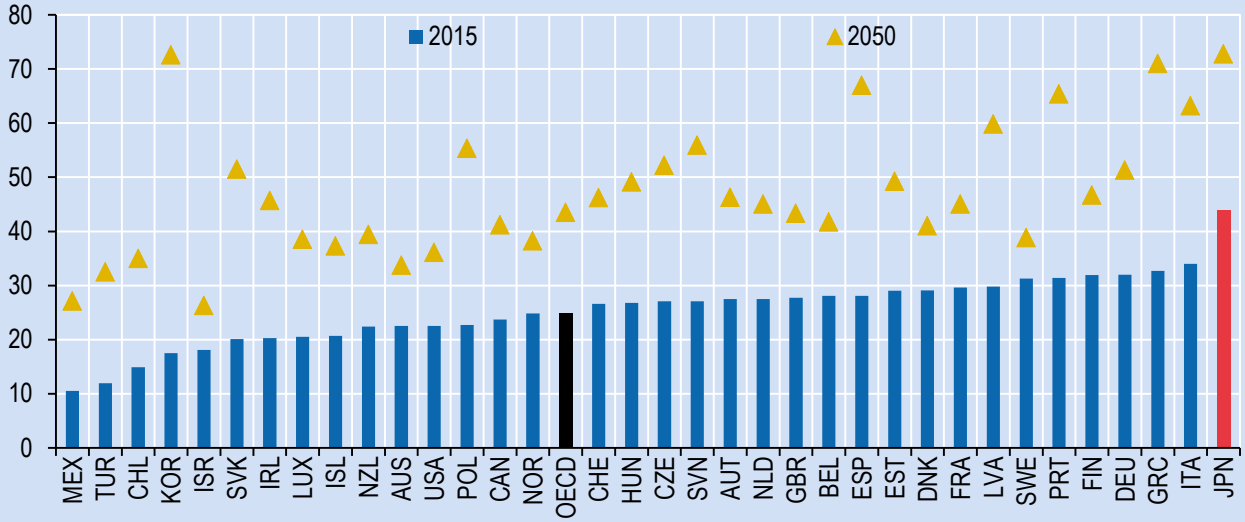
FIGURE 1.4. PRODUCTIVITY OF SMALL FIRMS IS LOW RELATIVE TO LARGE FIRMS IN JAPAN

Value added per person employed in 2013 in firms with 10-49 workers relative to that in firms with more than 250 workers (firms with more than 250 workers = 100)



Source: OECD (2016b), Entrepreneurship at a Glance, OECD Publishing, Paris, http://dx.doi.org/10.1787/entrepreneur_aag-2016-en.

FIGURE 1.5. JAPAN'S POPULATION WILL REMAIN THE OLDEST IN THE OECD THROUGH 2050
Population aged 65 and over as a percentage of the population aged 15-64



Source: OECD Demography and Population database.

Rapid population ageing

Japan's economic prosperity and well-being depend to a large extent on how it manages the unprecedented demographic transition now underway. Japan's population is shrinking and ageing very rapidly. The total population is projected to decline by almost 25% between 2015 and 2050, falling below 100 million. Meanwhile, the elderly dependency ratio (the elderly population as a share of the working-age population), which was also the highest in the OECD (at 44% in 2015) is projected to remain the highest (at 73% in 2050) (Figure 1.5). The ratio between the elderly population (age 65 and over) and the working age population (15-64 years) will thus fall from 2.3 to 1.4, making it difficult for Japan to catch up with leading OECD countries in terms of per capita income. In addition, population ageing will increase spending pressures and aggravate Japan's fiscal problems.

An unprecedented level of government debt

Japan's gross government debt has risen to close to 220% of GDP, the highest level ever recorded in the OECD area (Figure 1.6), while most of the assets held by the government are earmarked for public pension funds. The debt burden at present is limited by the extremely low interest rate environment in the context of large-scale bond purchases by the Bank of Japan, which now holds nearly half of the stock of government debt. However, the future course of interest rates is uncertain. In addition, spending pressure associated with population ageing will accelerate from 2025, when the post-war baby boom generation reaches age 75 and beyond. Ageing-related spending on pensions and on health and long-term care is projected to rise by 7% of GDP between 2020 and 2060. Projections by Japan's Fiscal Systems Council show that without strong policy measures to limit spending and raise revenue its debt will spiral out of control.



The government has announced that it will be difficult to achieve a goal of fiscal surplus in the primary balance by FY 2020. The latest government projection shows that a primary surplus will not be achieved until FY 2027 under current policies, even assuming strong growth of more than 3% in nominal terms (Figure 1.7). This assumes that the consumption tax rate is raised to 10% in 2019 as planned, although about half of the additional revenue will be used to finance social programmes. Under less optimistic economic assumptions (the baseline scenario), the primary budget would remain in deficit through FY 2027.

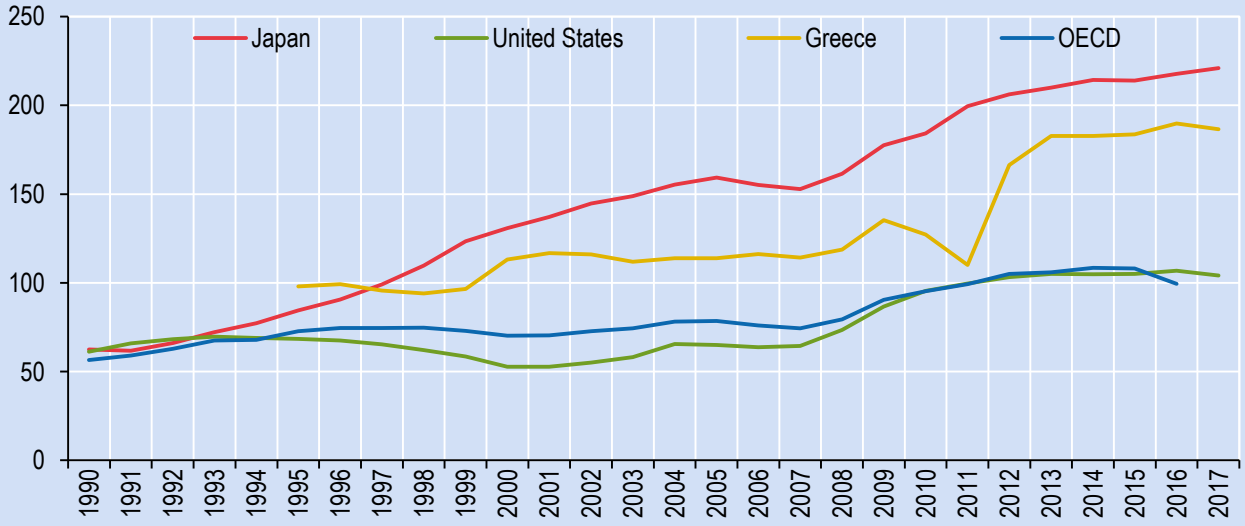
Taking decisive policy action to tackle Japan's fiscal challenges

Ensuring Japan's long-run fiscal sustainability is a top priority. The government has promised that it will set a new target date for achieving a primary surplus in the upcoming Basic Policies on Economic and Fiscal Management and Reform for 2018. The new fiscal plan should go further by laying out a detailed and concrete consolidation strategy that goes beyond the goal of a primary surplus. Such a plan should include specific measures to gradually raise revenues and control spending. Measures to raise revenues should rely primarily on taxes that are less distortive, notably the consumption tax and environmentally-related taxes (Chapter 2). The hike in the consumption tax rate to 10% in 2019 should be followed by gradual increases to bring it closer to the OECD average of 19%. In addition, broadening the personal income tax, in particular by removing deductions that favour high earners, would boost revenue while increasing the progressivity of the tax system.

On the spending side of the new fiscal plan, the key is to contain social spending, which is driven by population ageing (Chapter 3). Fundamental reforms, such as reducing excess hospital beds, introducing pay-for-performance programmes for health and long-term care and raising the pension eligibility age, would help limit spending increases. The new fiscal plan should also include local governments. The wide variation between prefectures in per capita public spending also suggests scope for fiscal consolidation at the local government level (OECD, 2017b). In addition, the fiscal policy framework should be improved to ensure that spending restraint in initial budgets is not undermined by supplementary budgets (OECD, 2017b).

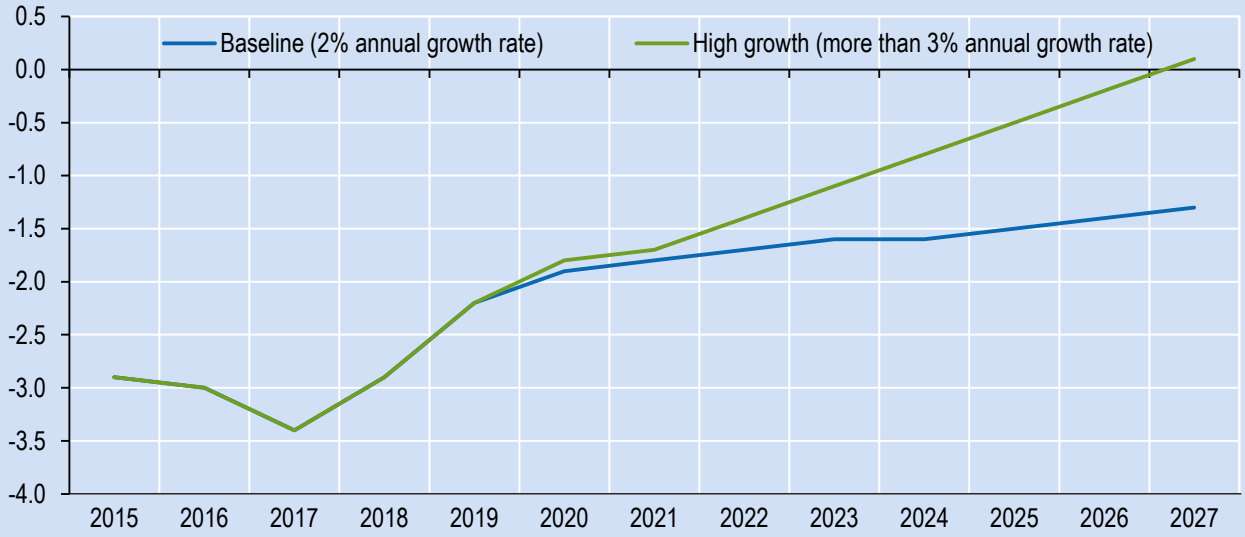
FIGURE 1.6. JAPAN'S FISCAL SITUATION HAS DETERIORATED CONSIDERABLY OVER THE PAST 25 YEARS

Gross government debt as a percentage of GDP



Note: OECD projections for 2016-17 for Japan and 2017 only for Greece.
Source: OECD Economic Outlook Database.

FIGURE 1.7. GOVERNMENT PROJECTIONS SHOW THAT THE FY 2020 TARGET FOR A PRIMARY SURPLUS IS OUT OF REACH
Primary balance (central and local governments) as a percentage of GDP on a fiscal year basis



Note: January 2018 projections.
Source: Cabinet Office of Japan (2018), Economic and Fiscal Projections for Medium to Long Term Analysis, Provisional Translation, Cabinet Office, Tokyo, http://www5.cao.go.jp/keizai3/econome/h30eiyaku1.pdf.

A comprehensive set of reforms is needed to promote inclusive growth and narrow the gap in living standards with leading OECD countries. Better use of available talent in the labour market would help Japan to cope with increasingly severe labour shortages and support inclusive growth (Chapter 4). The gender gap in employment could be narrowed by further increasing the availability of high-quality childcare, reforming the tax/benefit system so that both parents have broadly similar financial incentives to work, promoting the take-up of parental leave (particularly by fathers), and following through on planned reforms to reduce working hours. The employment of older persons could be increased by enhancing incentives in the pension system to remain in the labour force and encouraging a shift to flexible employment and wage systems based on ability rather than age (OECD, 2017b). At the same time, the quality of the labour force should be further improved by reforms to the education and skills system to promote inclusive growth (Chapter 5). Such reforms should cover the full range from early childhood education and care to lifelong learning for older workers.

Reforms are also needed to enable Japan to fully use its highly skilled labour force and high R&D intensity to narrow the productivity gap with leading OECD countries (Chapter 6). Increasing the return from R&D requires further enhancing co-operation between industry and academia and strengthening Japan's integration in international research networks. Achieving the 2013 goal of doubling inflows of foreign direct investment by 2020 would help in this respect. Finally, digitalisation of the economy should be placed at the heart of raising productivity, including a greater effort by the public sector (OECD, 2017c).

In this regard, measures to strengthen Japan's trade integration are also crucial (Chapter 7). While Japan is a major exporter and deeply integrated into global value chains, recent initiatives, such as the Comprehensive and Progressive Agreement for Trans-Pacific



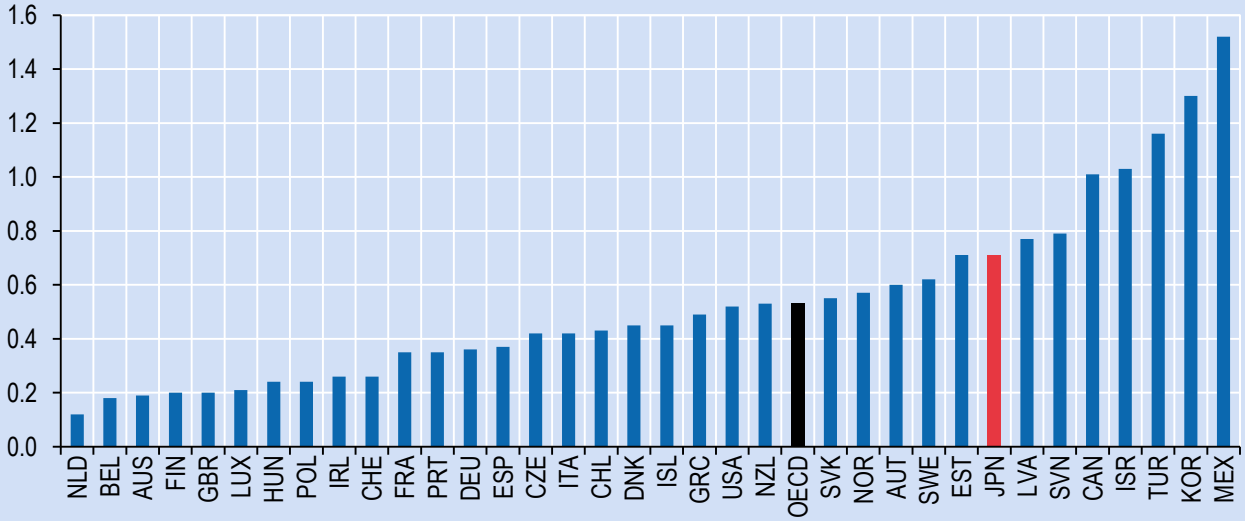
Partnership and the EU-Japan Economic Partnership Agreement, are important to further integrate the country into global markets. Upcoming international sporting events, notably the Rugby World Cup 2019 and the Olympic and Paralympic Games Tokyo 2020, will provide further opportunities for international integration as well as local development, thereby promoting inclusive growth (Chapter 8). Activating business dynamism to increase sluggish business investment and wage growth is another priority. Further progress in improving the corporate governance framework through the recently introduced Stewardship Code and Corporate Governance Code is essential in this regard.

Fostering green growth and environmental quality would help to ensure sustainability of resources and improve well-being, while also promoting inclusive growth (Chapter 9). Given its increased dependence on fossil fuels after the 2011 Fukushima accident, Japan needs to accelerate its efforts to achieve its greenhouse gas emission reduction targets and to set more ambitious targets. Advancing the ongoing reform of the electricity sector would help achieve its targets by ensuring secure and affordable electricity supply and promoting investment in low-carbon technologies. In addition, Japan needs to continue increasing its energy efficiency and its deployment of renewable energy, and to utilise nuclear generation under maximum safety.

The complementarity between reforms makes a compelling case for a comprehensive rather than a piecemeal approach. For example, the expansion of employment opportunities for women and the elderly and the development of skills of workers and students would have greater positive impact if accompanied by reforms to facilitate firm creation and the exit of non-viable firms, thereby allowing more productive firms to grow (OECD, 2017b). A better innovation ecosystem would have a larger impact on productivity if Japan becomes more integrated in the global economy, relaxes product market regulation – particularly barriers to trade and investment (Figure 1.8) – and improves its corporate governance framework. Accelerated productivity growth would facilitate workstyle reform to improve well-being. In sum, Japan needs to continue to adopt a comprehensive approach to reform.

FIGURE 1.8. BARRIERS TO TRADE AND INVESTMENT ARE HIGH IN JAPAN

Barriers to trade and investment indicator, 2013



Note: The OECD Indicators of Product Market Regulation (PMR) are a comprehensive and internationally-comparable set of indicators that measure the degree to which policies promote or inhibit competition. Empirical research shows that the indicators have a robust link to performance. The indicator, which ranges from 0 (most relaxed) to 3 (most stringent), is available for 35 OECD countries. The overall indicator is based on more than 700 questions.

Source: OECD PMR Database.

2 Reforming the tax system

Japan has recently introduced a number of reforms to enhance its corporate tax system, but further efforts are needed to improve the overall structure of taxation. Japan's tax revenues remain insufficient in light of its unprecedented level of government debt. It also continues to rely on a distortive mix of taxes. Increasing the consumption tax rate as planned will be essential to shift the tax mix towards more growth-friendly taxes. There is also scope for Japan to make better use of environmentally-related taxes to raise revenue and change behaviour. Finally, the redistributive role of the tax system could be strengthened, in particular by broadening personal income tax bases.

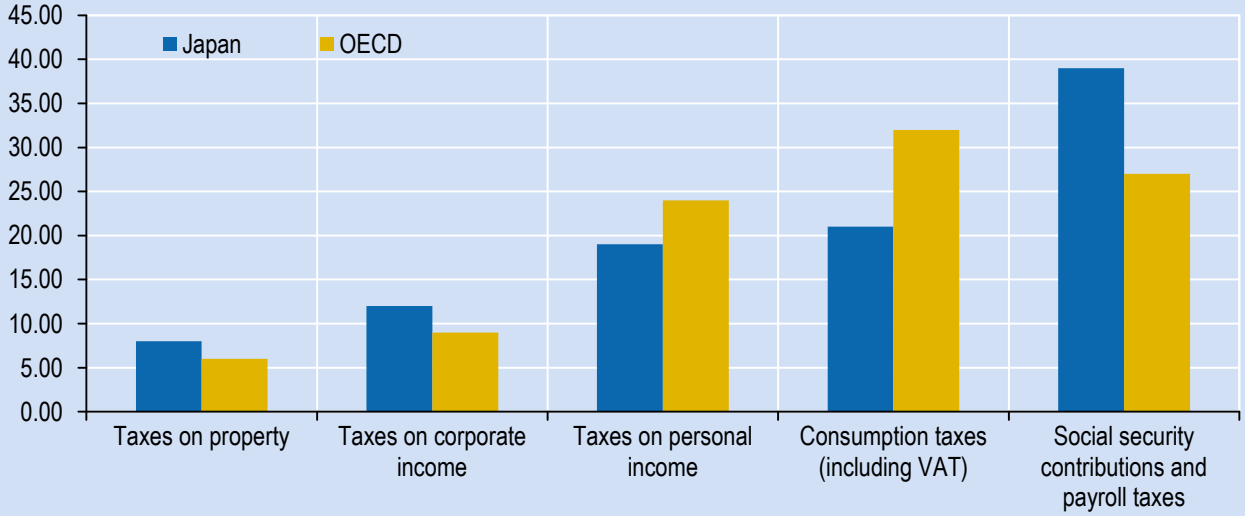
Increasing reform efforts to raise tax revenues and move away from a distortive tax mix

Japan has recently introduced a number of tax reforms to enhance its corporate tax system and support economic growth. The national corporate income tax rate was progressively reduced from 25.5% in 2014 to 23.2% in 2018, and local enterprise tax rates were lowered from 7.2% to 3.6% (OECD, 2016c). In parallel, efforts were made to broaden the corporate tax base through domestic measures (including the simplification of the tax depreciation system and the elimination of several tax exemptions), as well as through the implementation of measures related to base erosion and profit shifting. While these changes are an important step forward in line with OECD recommendations, Japan's corporate tax system remains burdensome, with a total tax rate of 29.74% in 2018, against the OECD average of 24%, and a complex combination of national and local-level taxes, which vary with company size. There is, therefore, scope to further simplify corporate income taxes to promote investment and growth. Further reforms are needed, as tax revenues are insufficient and Japan relies on a relatively distortive mix of taxes. Japan experienced a strong and steady increase in its tax revenues as a share of GDP in the years following the global financial crisis. However, in 2015, its tax-to-GDP ratio of 30.7% was still below the OECD average of 34%. Given Japan's unprecedented level of government debt relative to GDP and persistent primary budget deficits, increasing the tax-to-GDP ratio is an essential element of a strategy to achieve fiscal sustainability. The composition of Japan's government revenues shows that social security contributions, corporate income taxes and property taxes account for larger shares than in other OECD countries on average (Figure 2.1). On the other hand, Japan raises a comparatively small proportion of its revenues from personal income taxes and consumption taxes. Consumption taxes, which have generally been found to be less detrimental to economic growth than direct taxes (OECD, 2010a; Akgun, Cournède and Fournier, 2017), only accounted for 23% of Japan's total tax revenues in 2015, compared to an average of 32% across OECD countries.



FIGURE 2.1. JAPAN'S TAX REVENUE TENDS TO RELY RELATIVELY MORE ON DIRECT TAXES

Structure of total tax revenues in Japan and the OECD in 2015



Note: In the OECD approach, revenue sources include social security contributions.

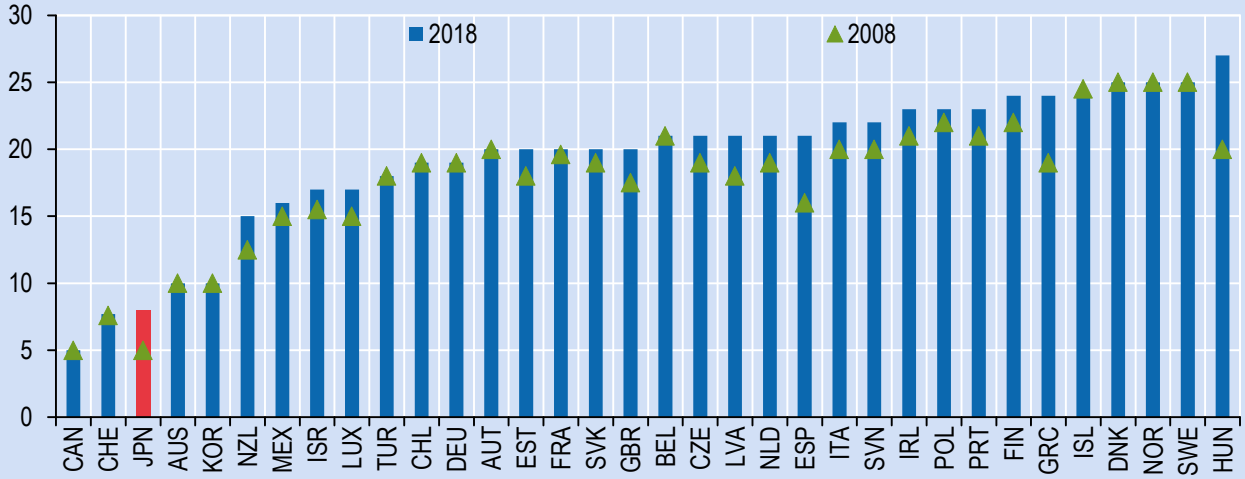
Source: OECD Revenue Statistics Database.

Low consumption tax revenues highlight the importance of raising the rate of the consumption tax, which is a value-added tax (VAT), as planned. With an increase from 5% to 8% in 2014, Japan was among the many OECD countries that raised their VAT rates in the years following the global financial crisis (OECD, 2016c). However, Japan still has the third-lowest VAT rate in the OECD (Figure 2.2). The plan to further increase it to 10% was postponed twice and is now set to become effective in October 2019.

Going through with the consumption tax rate increase would help shift the tax mix towards a less economically distortive and relatively stable source of revenues. A greater reliance on consumption tax could also improve intergenerational equity, as the elderly would bear a larger share of the burden (OECD, 2017b). Even with a consumption tax rate of 10%, Japan would remain among the OECD countries with low consumption tax rates, suggesting scope for further increases to help achieve fiscal sustainability. There is also scope for Japan to reform and make better use of environmentally-related taxes. Tax rates on energy use in the non-road sectors remain modest (Figure 2.3), despite the introduction of a CO_2 tax on selected energy products in 2012. Within the road sector, the lower tax rates on diesel than on petrol have no environmental justification.

FIGURE 2.2. JAPAN HAS THE THIRD-LOWEST STANDARD VAT RATE IN THE OECD

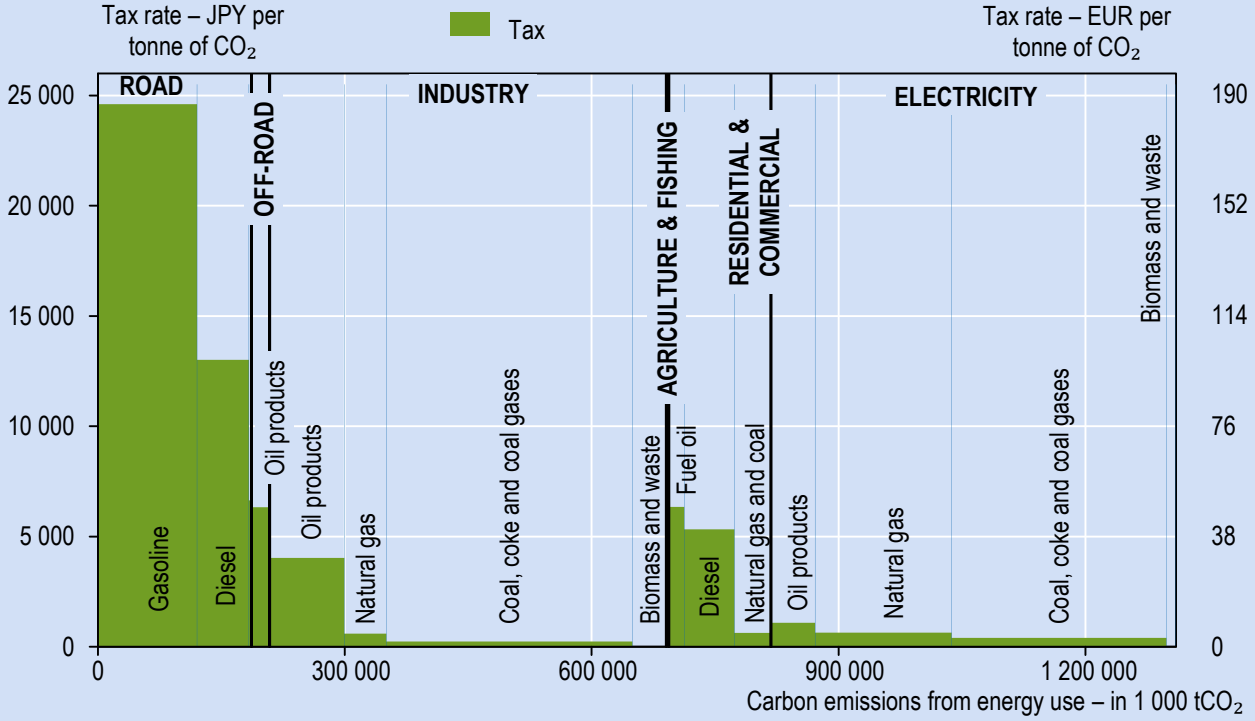
Standard VAT rates in the OECD in % in 2008 and 2018



Source: OECD Tax Database.

FIGURE 2.3. THERE IS SCOPE FOR JAPAN TO TAX ENERGY USE MORE EVENLY ACROSS SECTORS

Effective tax rates on energy use in JPY and EUR/tCO₂, 2015



Note: Excluding taxes on electricity output, including carbon emissions from biomass. The tax base, CO_2 emissions from energy use in Japan, is shown along the horizontal axis in 1 000 tonne of CO_2. CO_2 emissions are grouped into six economic sectors (road, off-road, industry, agriculture and fishing, residential and commercial and electricity) as well as by main fuels.

Source: OECD (2018a), Taxing Energy Use 2018: Companion to the Taxing Energy Use Database, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264289635-en.

Moreover, as the road-transport sector in Japan is not facing any international competition, and given the environmental harm that road transport emissions are causing, the tax rate on diesel is too low. There is also ample scope to apply taxes to address other environmental issues, such as water pollution, biodiversity protection, and waste prevention and management.

Enhancing the redistributive role of Japan's tax system through personal income tax reforms

Personal income taxes could also be reformed to raise additional revenues and strengthen the redistributive role of Japan's tax system. Personal income tax revenues account for only 19% of total taxation in Japan, compared to the OECD average of 24% (Figure 2.1). This is largely because a significant share of personal income is exempted. Indeed, less than half of the JPY 260 trillion in personal income in fiscal year 2014 was taxable due to deductions, in particular for wages and public pension benefits. Many of these deductions favour high-income households (OECD, 2017b). In the 2018 tax reform, these deductions were reviewed. The income level at which the wage deduction is capped was lowered to JPY 8.5 million (USD 80 400). As for the pension income deduction, the deduction cap will be introduced when pension income exceeds JPY 10 million (USD 94 600), and the deduction amount will be reduced for pensioners with side income exceeding JPY 10 million. In addition, the personal deduction will be reduced for those with income exceeding JPY 25 million (USD 236 500) after deductions. Further broadening the personal income tax base would thus enhance equity and strengthen the redistributive function of Japan's tax system, which is currently limited. Raising taxes on capital gains and dividends would also contribute to enhancing the tax system's progressivity. The effective tax rate on personal income peaks at slightly below 30% for those with an income between JPY 50 million and JPY 100 million per year (USD 473 100 to USD 946 200) and then falls to 17%. This decline reflects the lower tax rate on capital gains, which are concentrated among high-income earners. Capital gains account for almost 80% of income for those with a total income above JPY 10 billion. Raising the tax rate to 25% for capital gains and dividends, as well as for interest payments, would increase tax revenue and offset the fall in the corporate tax rate (OECD, 2017b).

Key recommendations

- Gradually raise government revenues as a share of GDP, while shifting the mix away from social security contributions and corporate income taxes towards less distortive revenue sources, in particular consumption taxes and environmentally-related taxes.
- Continue efforts towards simplifying the corporate tax system.
- Increase the consumption tax rate from 8% to 10%, as planned.
- Broaden the personal income tax base, in particular by removing the deductions which favour high-income earners.
- Raise taxes on capital gains and dividends to enhance progressivity.
- Gradually increase taxes on energy use outside the road sector.
- Increase the tax rate on diesel at least up to the level applied for petrol over the medium term.



3 Ensuring sustainability of health and long-term care

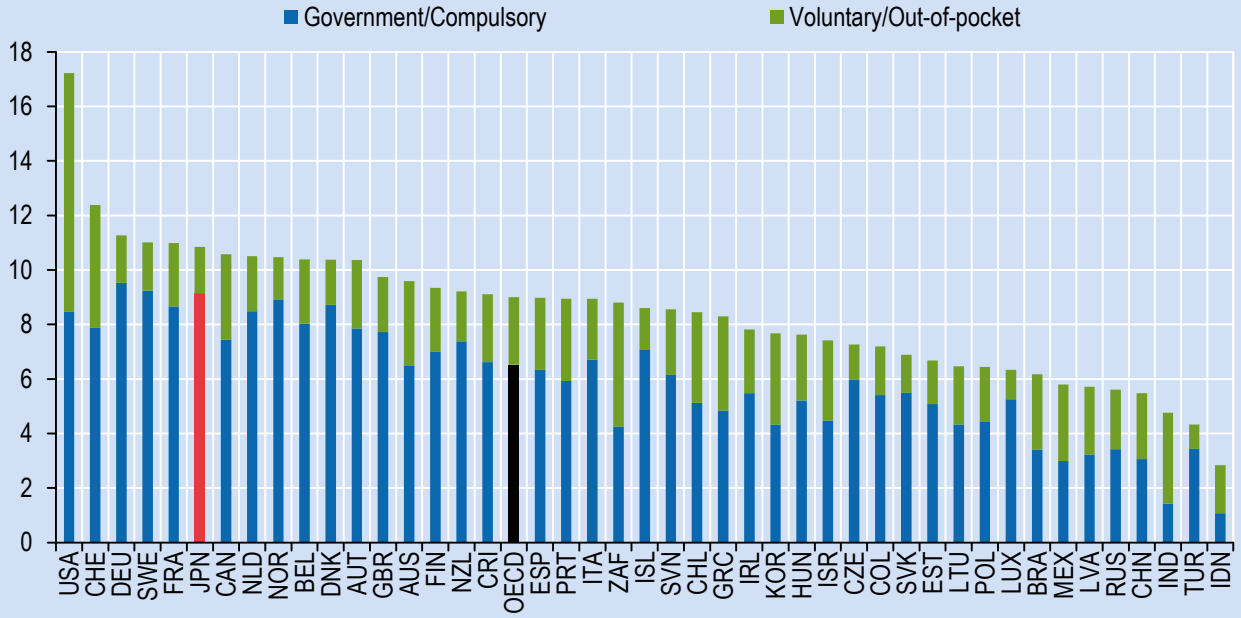
Japan has achieved high standards of living and offers its citizens universal health and long-term care (LTC) coverage, which ensures equitable access to and affordability of care. Japan's success in achieving long life expectancy has led to the highest share of elderly population in the OECD. However, Japan faces the highest level of government debt in the OECD while having to deal with ever-increasing healthcare and LTC expenditures. One of Japan's greatest challenges today is to design new strategies to put the healthcare and LTC systems on a pathway to financial sustainability while ensuring equitable access and affordability of care. The government has taken some bold steps in this direction, but the implementation of these reforms and their effectiveness in achieving fiscal sustainability will require long-term efforts.

Rising health and long-term care spending

With health and LTC expenditures continuing to increase, Japan now has the sixth-highest spending on health as a share of GDP among OECD countries (Figure 3.1). The rise in expenditures on LTC has been particularly rapid in the last ten years, with the costs of institutional (inpatient) care rising at the highest rate (Figure 3.2). The share of LTC provided in hospitals is high (11% of hospital spending in Japan, compared to the OECD average of 4%). Although Japan has made significant progress in reducing the length of hospital stays, they are still among the longest in OECD countries.

FIGURE 3.1. JAPAN'S HEALTHCARE EXPENDITURE AS A SHARE OF GDP IS AMONG THE HIGHEST IN THE OECD

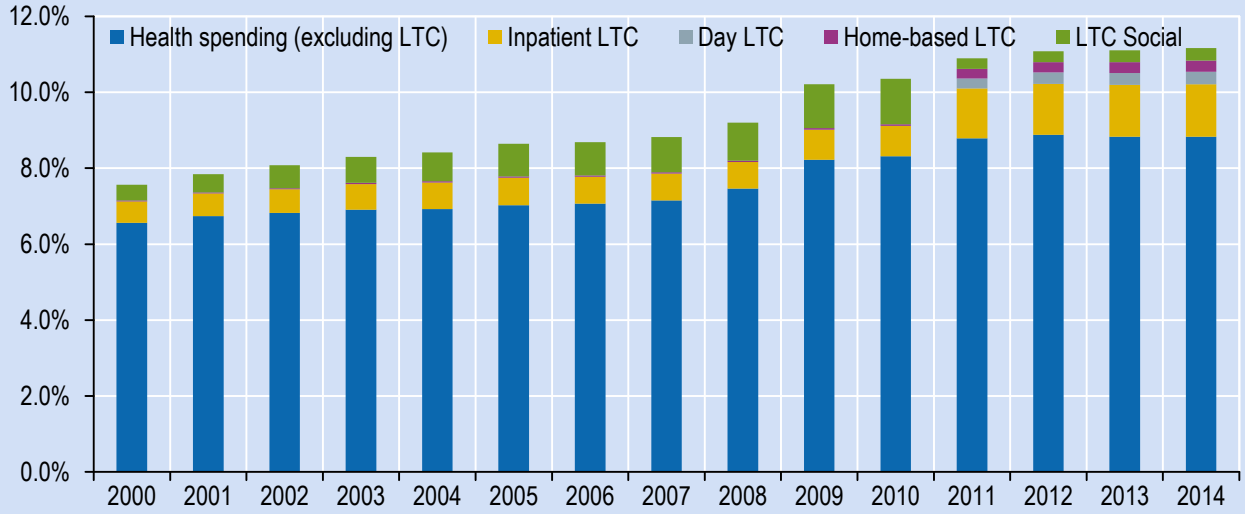
Healthcare expenditure as a share of GDP, 2016 (or nearest year)



Note: Healthcare expenditure includes health-related LTC spending and excludes investments. Australian expenditure estimates exclude all expenditure for residential aged-care facilities in welfare (social) services.

Source: OECD Health Statistics 2017 for OECD countries, World Health Organization Global Health Expenditure Database for non-OECD countries.

FIGURE 3.2. HEALTH AND LONG-TERM CARE EXPENDITURES HAVE RISEN RAPIDLY IN THE LAST DECADE
Health and long-term care expenditures in Japan, % of GDP



Source: OECD Health Statistics 2017.

Managing health and long-term care costs in an ageing society

In 2014, Japan embarked on a comprehensive reform plan to improve fiscal sustainability of the health and LTC systems. The reforms included a number of structural elements related to the financing and organisation of care, such as: 1) an amendment to the National Health Insurance Act to require prefectural authorities to assume the role of insurers of National Health Insurance (a role previously undertaken only by municipalities) and to expand the size of the health insurance risk pool (this 2015 reform took effect in 2018); 2) a significant expansion of the local government role in regulating local health services; and 3) a strengthening of active co-ordination among healthcare providers to improve allocative efficiency and referral networks. The reforms also introduced selective reductions in the benefit package of health services and increased co-payments by users of LTC services. These included the removal of public coverage for home-based support and care services under the central LTC insurance system and delegation to local governments of decision-making powers over which services to cover publicly. The hike in the consumption tax rate from 8% to 10%, which was postponed until 2019, will finance the implementation of these reforms, as well as the growing cost of health and LTC. It is too soon to assess the impact of these reforms, but it will be critical to put in place a system to monitor and evaluate their effects on fiscal and financial sustainability, quality of care, patient and community experience, and equity of access.

Reducing wasteful spending in health by optimising the existing system

Around one-fifth of health spending in health systems across OECD countries is at best ineffective and at worst harmful. Many patients are harmed at the point of care or receive unnecessary or low-value care that makes no difference to their health outcomes. Moreover, there is scope to reduce administrative costs and deliver the same benefits more efficiently (OECD, 2017d).

In the proposed 2018 revision of the national medical fee schedule, Japan aims to address wasteful spending by: 1) incentivising the delivery of high-quality health services, including home care and nursing services; 2) promoting appropriate use of pharmaceuticals and greater use of generics; and 3) harnessing ICT and better data management to improve accountability, streamline administrative processes and support better management decisions. As additional steps, Japan should consider removing low-value care from the fee schedule, based on a systematic review, as has been carried out in countries such as Australia, Spain and the United Kingdom. For example, a systematic review of more than 5 700 items in Australia, conducted in 2015, identified obsolete items in diagnostic imaging, ear, nose and throat surgery,

gastroenterology, obstetrics and thoracic medicine. This was followed by a public consultation to decide on their removal from the Medical Benefits Schedule (OECD, 2017d).

Promoting Community-based Integrated Care – a vision for transformation

Japan introduced the Community-based Integrated Care System as a centrepiece strategy to respond to the expanding social and health needs of an ageing society. The System is intended to transform the existing multiple and segmented care systems into an integrated community-based system that provides: 1) healthcare; 2) long-term care; 3) long-term preventive care; 4) living support (social assistance); and 5) housing services. By creating a safe and healthy living environment for the elderly as well as their families, this programme aims to promote healthy lifestyles and enhance social connections and resilience, thereby reducing the need for hospitalisation and institutional care among the elderly. The source of funding has not yet been decided.

The success of this reform will depend on bringing together under a shared framework a diverse group of local governments (with varying demographic profiles, political positions and economic capacity) with different constituencies of care providers as well as the general public. There is also a need to untangle the complex logistical, legal and financial systems and align them with the new integrated system.

Key recommendations

- Continue to implement significant reforms of the health and long-term care systems to improve financial sustainability, while carefully monitoring the impact on equity.
- Provide strong political leadership and encourage commitments from a wide spectrum of constituencies with diverse perspectives and interests to successfully implement the Community-based Integrated Care System.



4 Using all available talent in the labour market

For the first time since 1900, the number of live births in Japan in 2016 was less than 1 million, and Japan is the oldest OECD country by a wide margin. Japan's old-age dependency ratio increased by 32 points between 1980 and 2015, which has a strong direct impact on its economy. These trends are expected to continue, as the Japanese working-age population (age 15-64) is set to decline by about 20 million people to around 55 million in 2050. Using all available talent in the labour market is essential to help Japan limit the decline in its labour force.

Japan's shrinking and ageing population is putting pressure on the country's public spending. The population is projected to fall by a third from 127 million in 2015 to 87 million in 2060, while the share above age 65 increases from 26% to 40%. The country is now facing its largest labour shortages since the 1970s, as measured by the job-offer-to-applicant ratio. To address the situation, Japan will need to make the best use of all available talents by promoting the inclusion of women, the elderly, youth and foreign workers in the labour market.

Young people face challenges to labour market integration in Japan. In 2010, half of those aged 15-24 were on non-regular contracts, enjoyed less job security and lower pay, and were less well covered by social protection (OECD, 2017f). Overall, Japanese youth are the most pessimistic among 18 countries surveyed, with 37% expecting to work until they die (OECD, 2017b). However, the share of people aged 15-29 who are not in employment, education or training is low (10.1%, compared to the OECD average of 14.6%).

Employment rates of older workers are higher than the OECD average, but there is room for improvement. As in many other countries, the employment rate drops considerably from the 55-59 age group (79.9%) to the 60-64 age group (63.6% in 2016). Although many firms still set mandatory retirement at age 60, the employment rate of the 60-64 age group has been on an upward trend, due to the introduction of a continuous employment system under which employees can work as non-regular workers until age 65. Given long life expectancy, mandatory retirement at age 60 is not appropriate. Accelerating the planned hike to age 65 for eligibility to an earnings-related pension would encourage employees to work longer. Further increases beyond age 65 for both the earnings-related pension age and the national pension would also improve the sustainability of public pensions.



The possibilities to employ foreign workers have expanded in Japan in recent years. The number of foreign workers in employment rose by about 20% annually between 2015 and 2017, indicating employers' willingness to incorporate foreign workers into their labour force. The hiring of foreign workers in professional and technical fields has been actively promoted for almost two decades, and increasingly favourable conditions for the highly qualified have been offered since 2012. Nevertheless, the number of foreign professionals remains low. Japan should promote other categories of foreign skilled professionals to increase the pool of candidates and to build on its comparative advantage. Similarly, recent changes in employment possibilities for foreign care workers with Japanese training should be used to increase the supply of foreign students and workers in this sector. Finally, with the recent reform of the Technical Intern programme, employers may increase the number of trainees and keep them for up to five years. As the scope of the Technical Intern programme evolves, along with new temporary programmes for agricultural workers, an in-depth evaluation will be necessary.

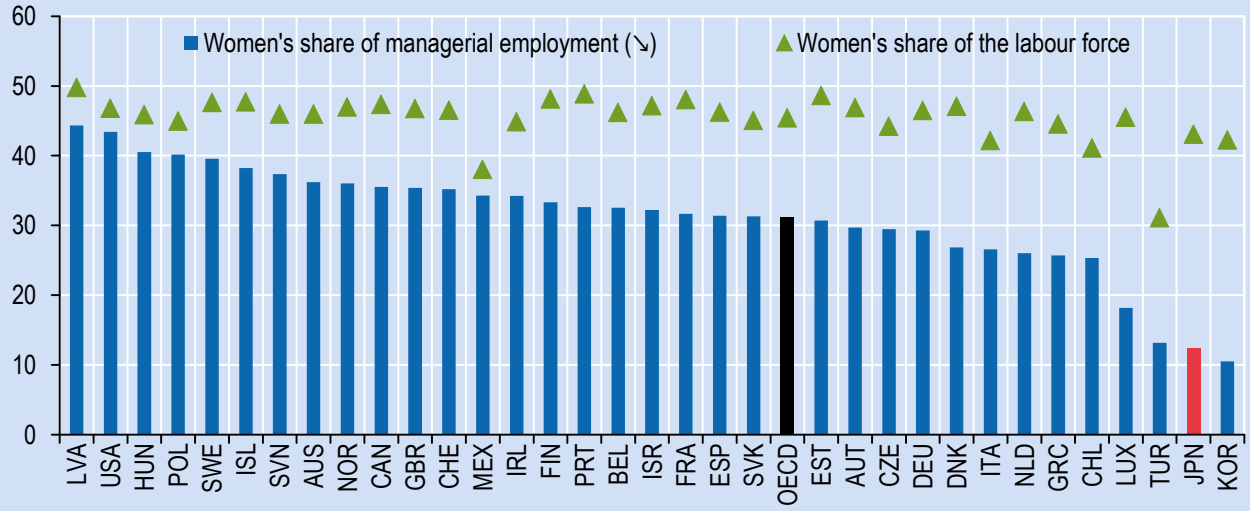
The employment rate among women in Japan was 66.1% in 2016, above the OECD average of 59.4% but still 16 percentage points below the employment rate for men in Japan. There are also persisting gender gaps in terms of job quality. In Japan's dual labour market, about two-thirds of the relatively low-paid non-regular employees are women.

On the other hand, men account for almost 70% of regular employees. They enjoy seniority-based remuneration and considerable employment security, but in return often work very long hours. Even though young women are more likely than young men to have completed tertiary education, they are less likely to enter regular employment upon graduation and also less likely to enter fast-track career streams where workers are groomed for higher management. Many employers still expect women to withdraw from the labour force around childbirth, and they are therefore less likely to invest in women's career development. This contributes to a very "leaky labour market pipeline" in Japan: while women's share of the labour force is around 43%, only 12% of management positions are held by women (Figure 4.1). The share of women on boards of directors of publicly-listed companies in 2016 was less than 5%, compared to 20% on average in the OECD. Only women in Korea fared worse. In addition, the gender pay gap in Japan is 25.7%, the widest in the OECD after Estonia and Korea.



FIGURE 4.1. WOMEN ARE UNDER-REPRESENTED IN MANAGEMENT POSITIONS

Women's share of management employment and female share of labour force, all ages, 2015 or latest available year (%)



Note: For Canada, Chile and the United States, the women's share of managerial employment is for jobs classified in International Standard Classification of Occupations (ISCO) 88 category 1 (as legislators, senior officials and managers). For all other countries, the women's share of managerial employment is for jobs classified in ISCO 08 category 1 (as managers). All data are for 2015, except for the United States (2013) and Australia and Canada (both 2014).

Source: Based on OECD (2017g) The Pursuit of Gender Equality: An Uphill Battle, OECD Publishing, Paris, Figure 11.3, http://dx.doi.org/10.1787/9789264281318-en.

Achieving greater gender equality, and making more efficient use of everyone's skills more broadly, would help Japan address labour shortages and sustain economic growth. If the gender gap in labour force participation were halved over the 2013-25 period, Japan could boost total cumulative growth in GDP per capita over the entire period by almost 4 percentage points.

Japan has introduced a number of policies to support women's participation in the labour market and to promote more equal sharing of paid and unpaid work between men and women. Women benefit from one year of parental leave paid at 67% of earnings (up to a threshold) for the first 180 calendar days and 50% for the remainder until their children reach age 1. Japan provides fathers with the same individual entitlement (which is more generous than most OECD countries) to promote their involvement in unpaid care work and enable women to purse their labour market aspirations. Thus far, this policy has not had a major impact. Many fathers are hesitant to take long leaves, mainly due to reasons related to the work environment, such as labour shortages and an unfriendly atmosphere towards taking parental leave. Only about 3% of male workers whose spouse had given birth between 1 October 2014 and 30 September 2015 had started or applied for parental leave by 1 October 2016.

Prime Minister Abe's Three Arrow Initiative added childcare places for 500 000 children over FY 2013-17, and the government plans to provide childcare arrangements for another 320 000 children by FY 2020. Nevertheless, Japan's spending on early childhood education and care (ECEC) in 2015 was just below 0.5% of GDP, less than half that of some European countries. In 2014, enrolment rates for 0-2 year-olds were around 30%, compared to 50% in France and 60% in Iceland and Denmark. Without more access to high-quality and affordable ECEC, women will not be able to return to work with confidence in the care that their children will receive. Disadvantaged children have the greatest potential to benefit from participation in ECEC.

The Japanese tax and benefit system still gives many women incentives to limit their

employment to part-time work. Prior to 2018, the income of second earners was tax-exempt up to JPY 1.03 million (USD 9 700), and the main earner could claim a spousal deduction. The income threshold was raised to JPY 1.5 million (USD 14 200) in 2018 and limited to households with an annual income below JPY 12.2 million (USD 115 400). These are welcome steps, but the deduction should be phased out in the long run, to ensure that the tax and social security system is neutral with regard to work decisions by secondary earners.

Above all, Japanese labour market institutions need change. Remuneration systems and career progression should be based on performance rather than seniority, and the dichotomy between regular and non-regular workers should be reduced, so that mothers can return to regular employment more easily. The government is focusing on equal pay for equal work and has placed Work Style Reform high on its agenda to combat the prevalence of long working hours. The culture of long working hours needs to be curtailed so that workplaces become attractive to both fathers and mothers. Leadership in the workplace will be crucial to achieving this goal. Senior managers need to lead by example, by taking their own holidays, or by making middle management accountable for both male and female employees actually using their parental leave entitlements. A firm's management and workers could agree on a limit to the amount of overtime, and the government could introduce a binding ceiling on overtime hours. The government should also serve as a role model by changing work habits and culture in the public service.

Key recommendations

- Reform the culture of long working hours, and encourage a shift to flexible employment and a wage system based on ability rather than seniority, while abolishing the right of firms to set a mandatory retirement age.
- Reform the tax/benefit system so that both parents have broadly similar financial incentives to work.
- Refocus funding and policies to expand affordable access to quality early childhood education and care, reduce childcare personnel shortages, and prioritise the use of childcare by children of disadvantaged groups and working mothers.
- Continue promoting the take-up of parental leave among fathers and mothers, if necessary by further increasing payment rates for the first 2-3 months of leave.

5 Japan's education system: Building competencies for the future

Japan's education system is one of the top performers in the OECD, resulting in high skills among both youth and the adult population. However, significant economic and socio-demographic challenges threaten the sustainability of this successful model. Policy makers in Japan are not complacent and are forward-looking, analysing tomorrow's threats to Japan's current strengths. The current curriculum reform is in line with the OECD education 2030 framework to address key issues and better prepare Japanese students for the future.

Combining high performance and equity

International comparisons have long established the high performance of Japan at every stage of the education system. In the 2015 OECD Programme for International Student Assessment (PISA), 15-year old Japanese students ranked in the first decile in science, mathematics and reading. In the 2012 OECD Survey of Adult Skills, adults in Japan had the highest levels of proficiency in literacy and numeracy among participating countries. Japan also had by far the smallest share of adults scoring at the lowest level of proficiency in both domains.

In most countries, socio-economically disadvantaged students not only score lower, they also have lower levels of engagement, drive, motivation and self-belief. Japan, along with Canada, Estonia and Finland, achieves high levels of performance and equity in education outcomes. In PISA 2015, 10% or less of the variation in student performance in Japan was attributed to differences in students' socio-economic status, compared to an average of 13% in the OECD area (Figure 5.1). In the OECD area, 29% of disadvantaged students (those in the bottom quarter of the PISA index of economic, social and cultural status in each country) are "resilient", meaning that they perform among the top 25% of students around the world after accounting for socio-economic status. In Japan, the percentage of resilient students has grown by 8 percentage points since 2006, so that nearly half of disadvantaged students (49%) are now considered to be resilient.

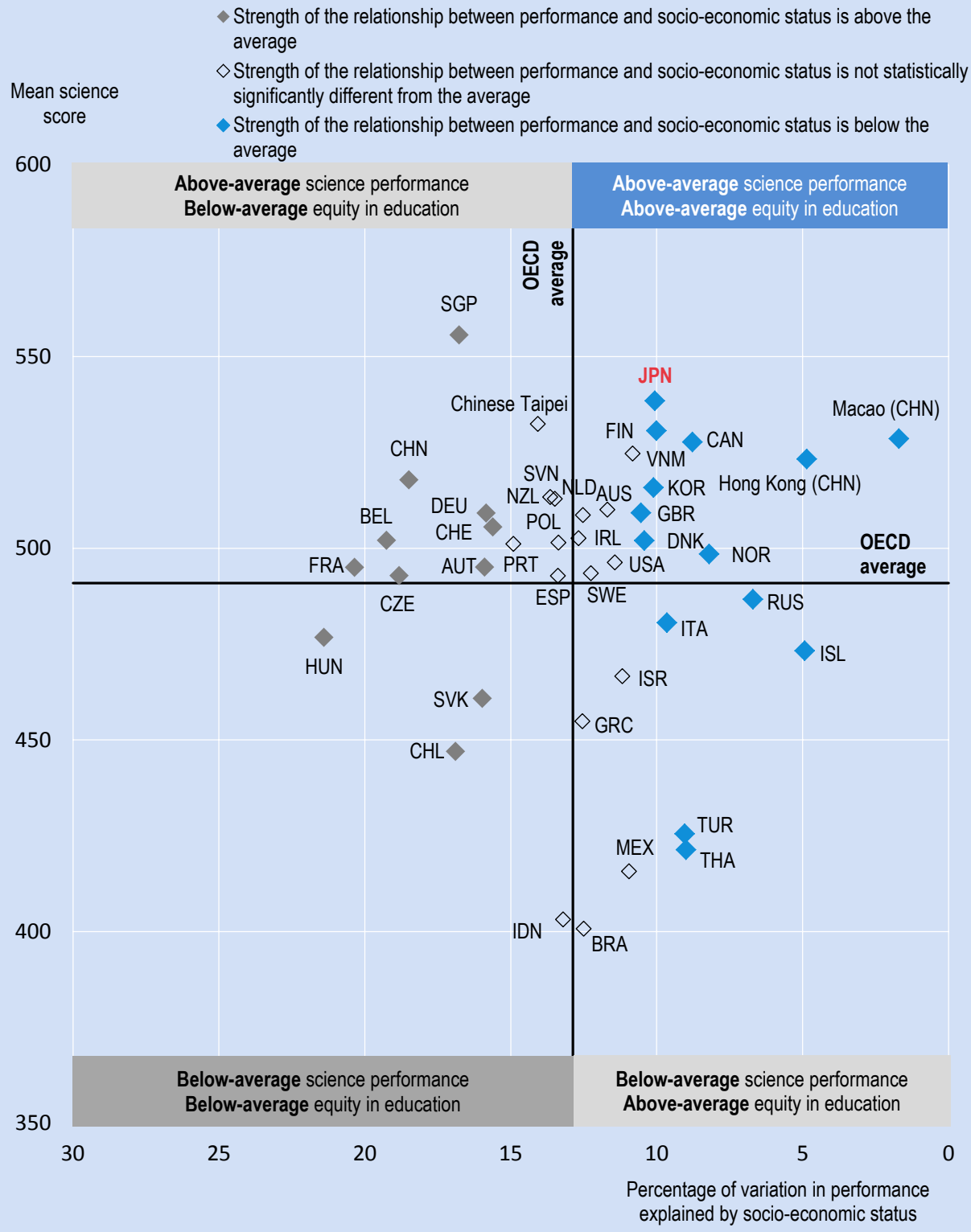
This success is largely due to the high quality of teachers in Japan. In addition to high levels of qualification and systematic team work, teachers have among the longest working time: 54 hours per week, compared to the average of 38 hours per week in the countries participating in the OECD's Teaching and Learning International Survey (TALIS). Their work covers a wide variety of school activities, including eight hours per week for extracurricular activities, well above the TALIS average of two hours. In the long run, however, the heavy workload of teachers could limit the excellence of the Japanese education system. TALIS revealed that only few teachers in Japan feel well prepared in terms of content, pedagogy and practice of the subject they teach.

Creating competencies to transform society and shape the future: Education 2030

Despite the high performance of Japanese schools, structural reforms are needed. Children entering education in 2018 will be young adults in 2030, facing challenges that are difficult to predict at present. Schools need to prepare students for jobs that have not yet been created, technologies that have not yet been invented and problems that have not yet been anticipated.

FIGURE 5.1. SCIENCE PERFORMANCE AND EQUITY ARE STRONG IN JAPAN

Mean performance in science and strength of the socio-economic gradient in PISA, 2015



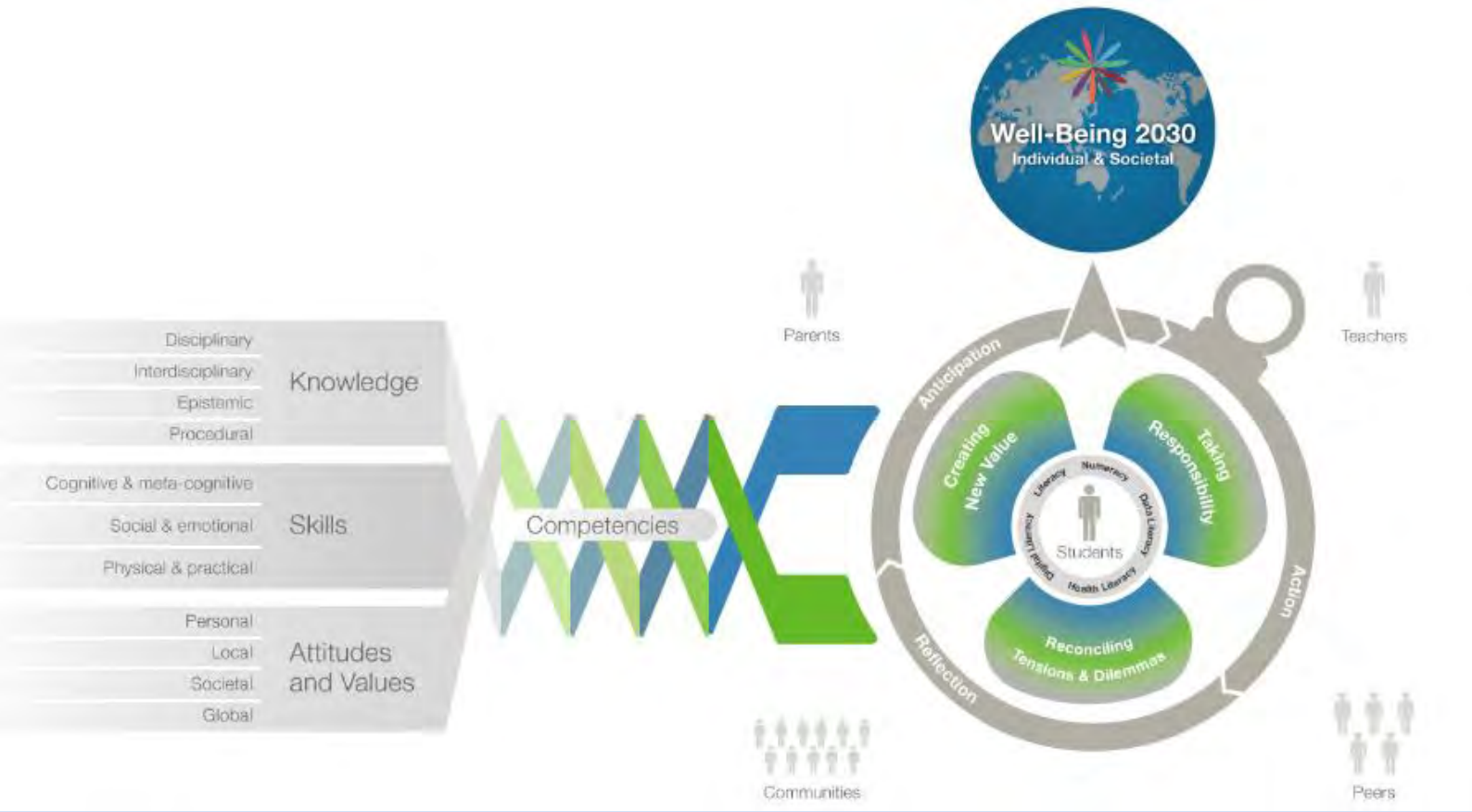
Source: OECD (2016d), PISA 2015 Results (Volume I): Excellence and Equity in Education, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264266490-en.

To address these questions, the stakeholders of the OECD Education 2030 project have co-developed a "learning compass" that illustrates how young people can navigate their lives and their world. Students who are best prepared for the future are "change agents". They can have a positive impact on their surroundings, influence the future, understand others' intentions, actions and feelings, and anticipate the short-term and long-term consequences of what they do. This is why "agency" is at the heart of this learning compass. The concept of competency implies more than just the acquisition of knowledge and skills; it involves the mobilisation of knowledge, skills, attitudes and values to meet complex demands. To address the growing need for young people to be innovative, responsible and aware, the OECD Education 2030 project further identifies three categories of "transformative competencies":

- creating new value
- taking responsibility
- reconciling tensions and dilemmas.

The OECD Learning Framework 2030 (Figure 5.2) encapsulates this complex concept: the mobilisation of knowledge, skills, attitudes and values through a process of anticipation, action and reflection, in order to develop these inter-related competencies needed to engage fruitfully with the world. Japan has been one of the active contributors to the development of this framework for whole personal development since its inception.

FIGURE 5.2. THE OECD LEARNING FRAMEWORK 2030



Source: The Future of Education and Skills, OECD Education 2030, http://www.oecd.org/education/2030/.

Preparing young people for the future through an ambitious curriculum reform

Japan has recognised the need to improve teaching and learning to foster competencies for the 21st century. The Central Council for Education's report on the Third Basic Plan for the Promotion of Education (2018-22) draws on priorities in education policy, including the universal mission of education, current issues, and providing better opportunities for each and every person through education. The report adopts a long-term outlook for society for 2030 through five basic policy directions: 1) fostering the necessary skills for students to have the aspiration and ambition to reach their potential; 2) developing the various skills to lead the sustainable development of society; 3) preparing an environment conducive to lifelong learning and activity; 4) building a learning safety net through which anyone can play an active role in supporting society; and 5) building the foundation to carry out these education policies. For each one of these, it establishes policy targets and sets out measures needed to achieve them.

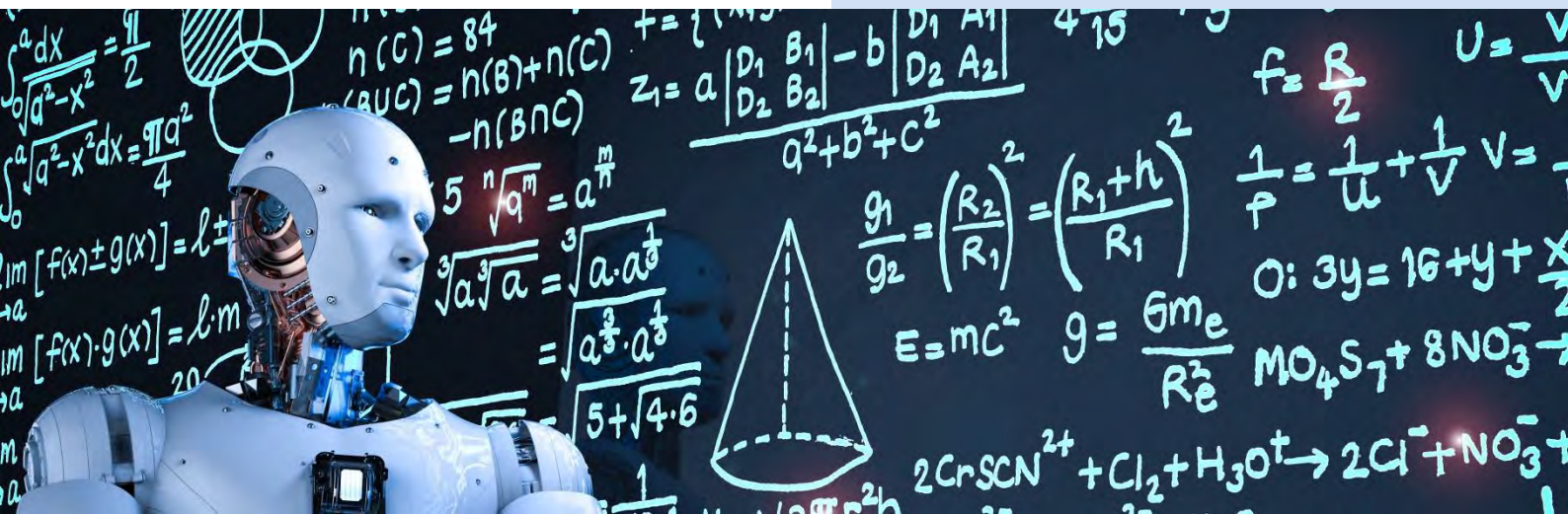
Moreover, with a curriculum revised around every ten years, Japan has established a regular cycle to continuously improve teaching and learning practices. As an early partner of the OECD Education 2030 project, Japan has already developed a curriculum encompassing some of the 2030 objectives, with a vision for developing a more holistic notion of student success. The curriculum includes a solid academic foundation, enriched with global competencies.

In particular, Japan has committed to developing cross-curricular skills, such as problem-solving and creativity, and good learning habits. To do so, the new curriculum (to be implemented from 2020-22) focuses on using active learning to develop the competencies of students around three pillars: 1) motivation to learn and apply learning to life; 2) acquisition of knowledge and technical skills; and 3) skills to think, make judgements and express oneself.

In addition to developing individual competence, the new curriculum will seek to foster a sense of social responsibility for the future, covering independence, interdependence and the development of values such as a "rich sense of humanity". Educational objectives and the content of the subjects taught in primary school, lower and upper secondary education will be organised around these three pillars and will extend beyond academic achievement (e.g. appreciation of arts and music, cultivation of healthy habits through practice of sports and physical activity, and the respect for life and human dignity).

Key recommendations

- Ensure effective implementation of the redesigned curriculum centred on students, (i.e. motivating them and recognising their prior knowledge, skills, attitudes and values).
- Ensure effective alignment between the revised curriculum with teaching and assessment practices (including student outcomes and actions), especially the university entrance examination, to reflect the new curriculum.
- Invest in supporting teachers and school leaders, including in-service and pre-service training and limiting their workload, to reinforce their capacity to implement the revised curriculum in schools and classrooms.



6 Enhancing the framework conditions for innovation

Japan places high importance on innovation and is among the few OECD countries that spend more than 3% of GDP on research and development. It is a top player in several emerging ICT technologies, and its 5th Science and Technology Basic Plan has set a vision towards Society 5.0, where systematic integration of digital technologies and the physical world spurs economic growth and provides solutions to societal challenges. However, there remains scope for enhancing conditions for domestic and international collaboration in research, boosting dynamism among firms, especially small and medium-sized enterprises (SMEs), further leveraging digital technologies and easing regulatory burdens to lift productivity, and unleashing the power of regions and cities to contribute to Japan's innovation.

Improving collaboration between universities, public research institutes and private companies

Universities and public research institutes remain an important source of innovations, from entrepreneurial academic start-ups and university-generated inventions to the talented graduates that perform R&D and innovation activities in companies. Yet, in Japan, in contrast to other countries such as the United States or the United Kingdom, the innovation system has relied less on universities and public research institutes and more on innovation generated within large and medium-sized firms organised in corporate groups known as *keiretsu*.

The government has long sought to promote greater collaboration between universities, public research institutes and industry. Many of the reforms in the 1990s and 2000s have focused on incentivising universities to collaborate with firms through: 1) legislative reforms (e.g. granting universities ownership title over patented inventions by academics and the creation of Technology Licensing Offices at universities); 2) government grants for collaboration on high-risk industrial R&D; and 3) changes in university funding rules. Most of these reforms and policy initiatives have been supply-side oriented. Nonetheless, Japan has achieved some success, as illustrated by the gradual growth in the number of research contracts and joint research projects involving universities and industry as well as start-ups (Table 6.1). Data on university patenting and licensing also show a gradual increase over recent years (OECD, 2015).

TABLE 6.1. COLLABORATION BETWEEN UNIVERSITIES AND INDUSTRY IN JAPAN, 2008, 2013 AND 2016

Year	Number of joint research projects	Amount of income received by universities in joint research projects (JPY million)	Number of research contracts	Amount of income received by universities via contract research projects (JPY million)	Number of new university start-ups
2008	17 638	43 824	19 201	170 019	90
2013	21 336	51 666	22 212	169 071	52
2016	23 021	52 557	26 779	229 471	127

Note: Universities include technical colleges and inter-university research institutes.

Source: MEXT (Ministry of Education, Culture, Sports, Science and Technology (2016), Status of implementation of industry-academia collaboration at universities and other institutions, MEXT, Tokyo, http://www.mext.go.jp/component/a_menu/science/detail/__icsFiles/afieldfile/2018/02/16/1397873_02.pdf.

Moving forward, there are a number of structural barriers that need to be considered in order to formulate new policies, notably to boost demand for collaboration with academic research. These include the risk-averse culture of universities. Although this is not unique to Japan, it is compounded by the traditional reluctance of large Japanese firms to outsource or to purchase R&D external to the firm (i.e. the "not invented here" syndrome). The weak demand for university research from SMEs is also tied to the predominance of service firms in this population, the large majority of which are domestically oriented and have limited funds for research and innovation. Japanese innovation-active manufacturing firms, which could generate demand for R&D from universities (as manufacturing firms do in countries such as Germany and Finland), tend instead to rely on internal sources, suppliers and customers as sources of innovation. Only 10% of innovation-active Japanese manufacturers rely on universities or public research institutes for knowledge inputs (UNESCO, 2015). In fact, many medium-sized manufacturing firms enjoy privileged supplier relations with larger global Japanese firms, shielding them from direct exposure to global markets and thus from the competitive pressure to reduce costs through innovation.

More recently, however, larger and medium-sized firms have been acquiring technology-based start-ups in Japan and abroad as means of reinvigorating in-house R&D and innovation capabilities. Recent reforms to boost investment and promote venture capital, including tax breaks for business angels and venture capital funds, were adopted as part of the Japan Revitalization Strategy, with the aim of promoting corporate investment in venture businesses (OECD, 2015). In many countries, governments offer innovation vouchers and small lines of credit to SMEs to purchase services from public knowledge providers, with a view to helping firms to solve production problems or introduce new innovations. The 2017 Comprehensive Strategy on Science, Technology and Innovation recommends the use of public procurement of innovation to stimulate demand for innovation from start-ups and SMEs (Cabinet Office of Japan, 2017).

Developing international research networks

Strengthening the participation of universities and public research institutions could help bolster Japan's standing in the global research landscape. Japan has experienced a general decline in the number of its scientific publications since 2005, along with a slow rate of internationalisation of its research networks. It also has one of the lowest levels of international collaboration in science and innovation among OECD countries. Over the period 2005-16, only 24.4% of scientific publications involved international co-authorship and only 1% of Japanese patents involved international co-invention (Figure 6.1). Experimental indicators on the international mobility of scientific authors, based on bibliometric data for 2002-16, show that Japan has lost more authors than it has attracted. Over the 15 years to 2016, almost 8 000 more scientific authors left Japan than entered the country (OECD, 2017c). Not only does Japan face demographic challenges in maintaining the supply of new researchers (the number of incoming doctoral students fell from 16 271 in 2008 to 14 972 in 2016), but there is also evidence of waning interest in science among youth and a decline in the attractiveness of research careers (NISTEP, 2017; STIP, 2018). It is therefore noteworthy that, despite these challenges, Japan has managed to diversify its international research networks beyond its traditional partners in the United States and Europe towards Asia, in particular China (Figure 6.2). In 2016, Japanese researchers co-authored



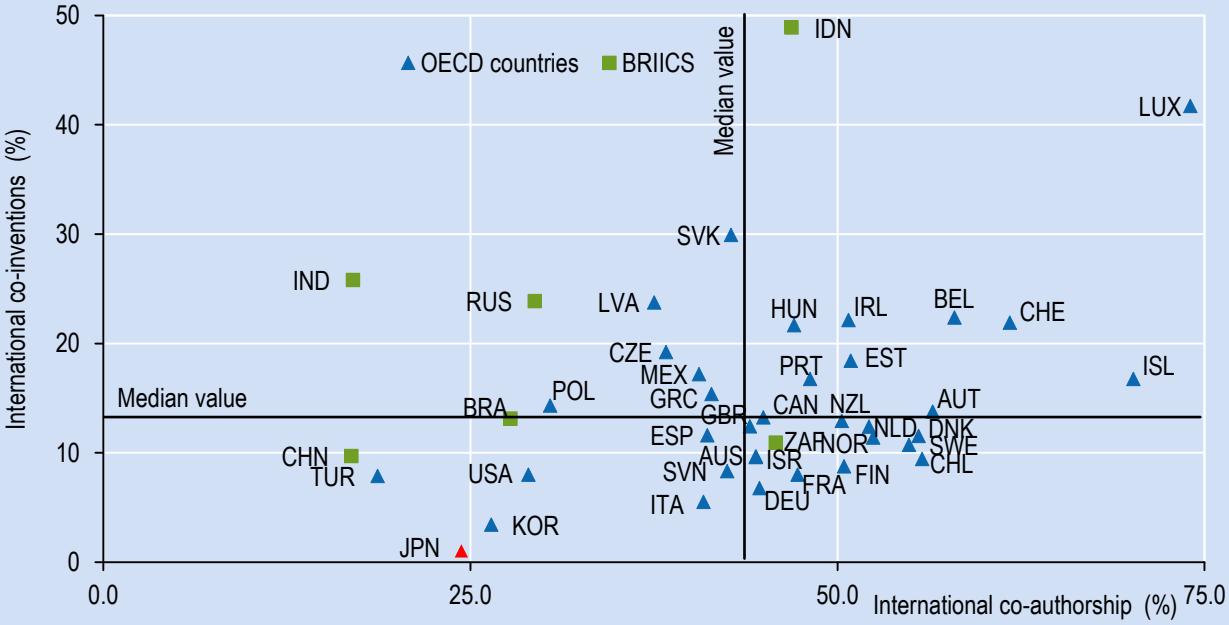
some 11 445 articles with authors based in the United States and 6 849 with authors based in China (compared to only 3 674 in 2006), followed by the United Kingdom (4 020), Germany (4 002) and France (3 084).

To foster greater internationalisation of research and human resources, the government has implemented a range of measures to internationalise Japanese universities, such as the Top Global University Project, which provides universities with generous subsidies to enhance international compatibility and competitiveness. The selection criteria for most large grants to universities have been adjusted to include the share of foreigners and women among teaching and research staff, which has been quite low in comparison to other OECD countries. The government also has a number of programmes to engage Japanese scientists with other scientists on global challenges, including via participation in international global research initiatives such as the Future Earth and the Belmont Forum. Co-operation with developing countries is supported through the Science and Technology Research Partnership for Sustainable Development, which funds collaborative research projects in areas such as the environment, energy, natural disasters and infectious diseases.

In order to improve Japan's attractiveness to foreign firms relative to neighbouring countries in Asia, the Japan Revitalization Strategy of 2013 fixed the target of doubling inflows of foreign direct investment by 2020. The government has designated six National Strategic Special Zones as international centres for business and innovation. Closely linking efforts to promote foreign inward investment with efforts to connect foreign firms to Japanese start-ups (as is done in other countries, such as Finland, France and Belgium) could improve the visibility and attractiveness of Japan's emerging start-up ecosystem. The internationalisation of clusters is another mechanism used to promote international innovation linkages, and it is noteworthy that Japan's Knowledge Cluster Programme under the Ministry of Education, Culture, Sports, Science and Technology includes support for international collaboration of national clusters.

FIGURE 6.1. INTERNATIONAL COLLABORATION IN SCIENCE AND INNOVATION IS RELATIVELY LOW

Co-authorship and co-invention as a percentage of scientific publications and IP5 patent families, 2005-16

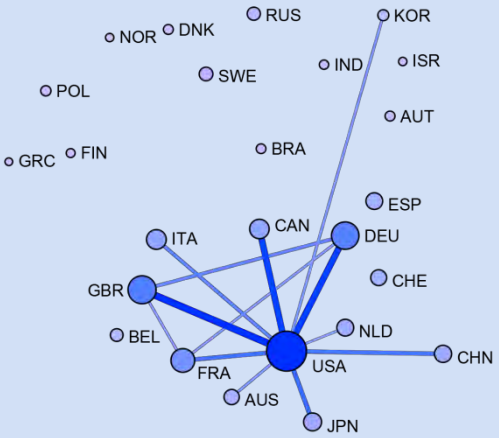


Note: The median is calculated across OECD countries plus non-members (Brazil, China, Indonesia, India, Russian Federation and South Africa).

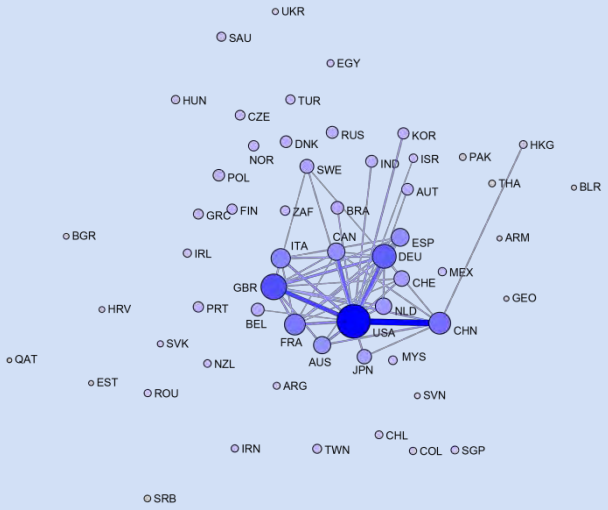
Source: OECD calculations based on Scopus Custom Data, Elsevier, Version 4, 2017 and OECD, STI Micro-data Lab: Intellectual Property Database, http://oe.cd/ipstats, July 2017. See OECD (2017c), OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264268821-en.

FIGURE 6.2. INTERNATIONAL COLLABORATION NETWORKS IN SCIENCE HAVE BECOME MORE ORIENTED TOWARDS ASIA
Whole counts of internationally co-authored documents, 2006 and 2016

Panel A. International collaboration networks in science, 2006



Panel B. International collaboration networks in science, 2016



Note: Based on a minimum collaboration threshold of 10 000 documents. The edges (lines) have a minimum threshold of 5 000 collaborations. Distances approximate the combined strength of collaboration forces. Bubble sizes are proportional to the number of scientific collaborations in a given year. The thickness of the lines (edges) between countries represents the intensity of collaboration (number of co-authored documents between each pair).

Source: OECD calculations based on Scopus Custom Data, Elsevier, Version 1.2018.

Promoting innovation by SMEs

SMEs account for 70% of private sector employment in Japan, but business dynamism and productivity among SMEs are relatively weak. Labour productivity in firms with 20-49 employees is 45% of that of firms with more than 250 employees (compared to the OECD average of 55%). R&D spending is high in international comparative terms (3.3% of GDP in 2015), but it is mostly concentrated in large enterprises. In addition, business entry and exit rates are low by international standards (around 4-5%) and have not reached the 10% target rate set by the Japan Revitalization Strategy. This inhibits the entry of potentially innovative firms.

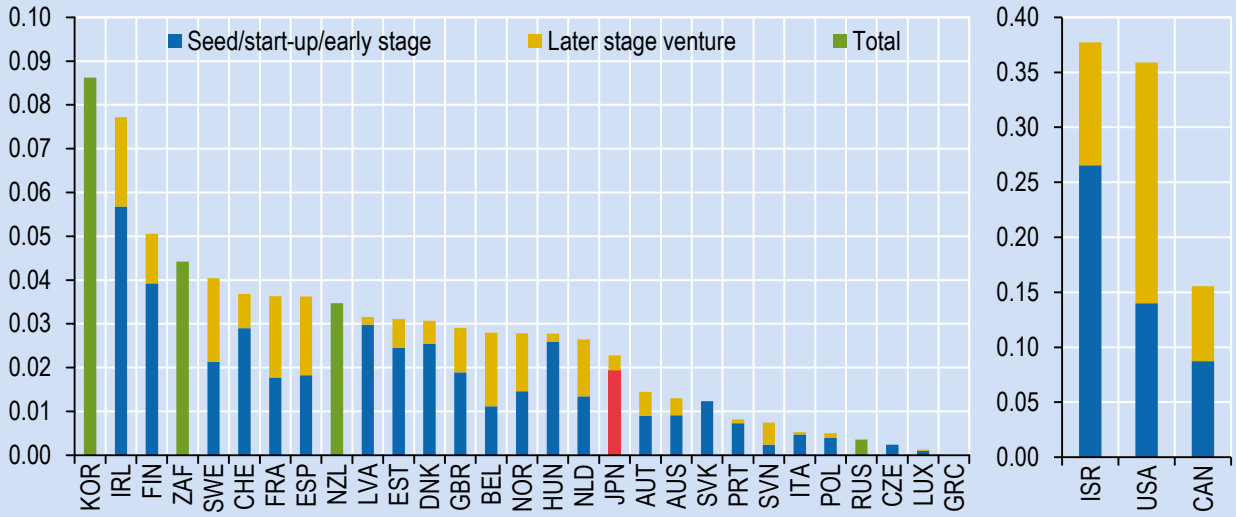
Japan could strengthen business dynamics by reducing the use of personal guarantees and by making the personal bankruptcy system less stringent. In addition, the use of the Guidelines for Personal Guarantees Provided by Business Owners to expedite out-of-court settlements for failed SMEs could be widened.

The relative scarcity of innovative start-ups and limited access to risk capital are intertwined. Venture capital investment is low compared to other OECD countries (Figure 6.3). Other sources of finance particularly relevant for fast-growing ventures, such as equity crowdfunding and business angel activities, remain underdeveloped.



FIGURE 6.3. VENTURE CAPITAL INVESTMENTS ARE LOW IN JAPAN COMPARED TO OTHER OECD COUNTRIES

Venture capital investments as a percentage of GDP, 2016



Note: For Israel and Japan, data are for 2014.

Source: OECD (2018b), Financing SMEs and Entrepreneurs 2018: An OECD Scoreboard, OECD Publishing, Paris http://dx.doi.org/10.1787/fin_sme_ent-2018-en.

The government has taken significant steps to ease access to finance for SMEs. The extensive loan-guarantee programme has been redesigned to be less distortive, in particular by reducing the number of firms that benefit from full coverage by guarantees. The government is preparing a programme to facilitate financing, especially for firms where business risks are particularly high, making private financial institutions reluctant to lend to them. More concrete steps in this area could boost the creation of innovative SMEs.

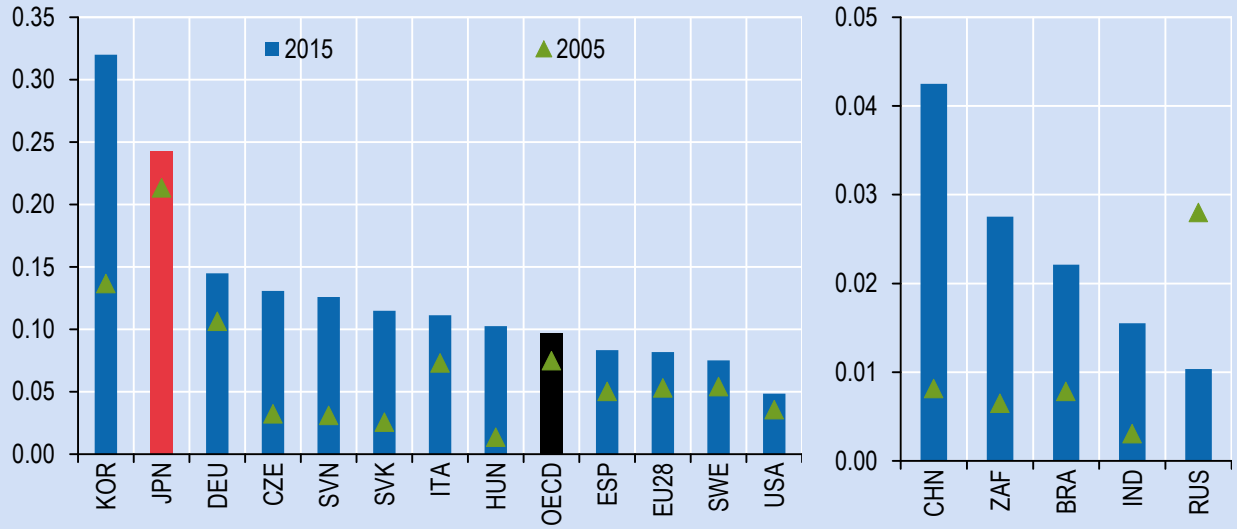
Furthermore, granted intellectual property (IP) rights to protect innovation are used more widely in Japan than in many other OECD countries. This creates an opportunity for loans that are backed by intellectual property. The Japan Patent Office has taken an active role in encouraging financial institutions to collateralise IP by funding up to 150 IP evaluation reports per annum for qualifying banks, provided by independent researchers. In addition, there is a long-standing programme of institutional education aiming at familiarising financial institutions with IP assets, so that credit assessors are equipped to interpret information provided by the evaluation reports. The approach combining training and evaluation reports, which was originally piloted in 2014-15, could be further expanded in the future.

Boosting framework conditions for reaping the benefits of the digital economy

On many indicators, Japan is a leader within the OECD in its embrace of the digital transformation (OECD, 2017c). Japan's mobile broadband penetration is the highest in the OECD (157 subscriptions per 100 inhabitants in 2017), and it has the second-highest share of fibre in its fixed broadband connections. Large businesses are keen users of cloud computing, with 62% using cloud computing services in 2016 (above the OECD average of 46%). Moreover, Japan is the second most robot-intensive economy in the world, in terms of industrial robots measured against manufacturing value-added (Figure 6.4). Japan is also a top player in several emerging ICT technologies that are experiencing a period of accelerated development. Over the period 2012-15, Japan accounted for 33% of patents in areas such as 3D object manipulation and image analysis.

FIGURE 6.4. JAPAN IS ONE OF THE MOST ROBOT-INTENSIVE ECONOMIES IN THE WORLD

Industrial robot stock over manufacturing value added, millions USD, 2005 and 2015



Note: OECD calculations based on International Federation of Robotics data and the World Bank, Word Development Indicators Database, September 2017.

Source: OECD (2017c), OECD Science, Technology and Industry Scoreboard 2017: The digital transformation, OECD Publishing, Paris. http://dx.doi.org/10.1787/888933617377.

However, there remains room for further leveraging of digital transformation for productivity and well-being in Japan's economy and society. For instance, remarkably few businesses engage in sales via e-commerce, even the larger ones (28% in 2015, compared to the OECD average of 40% for large firms). Perhaps as a result, just 53% of Japanese Internet users purchased online in 2015 (compared to the OECD average of 61% and 86% for the OECD leader, the United Kingdom, in 2016). Japan also has a very low share of individuals using the Internet to interact with public authorities (just 5.4% in 2016, compared to the OECD average of 54%). This indicates significant scope for further harnessing the digital transformation to improve government services and the interactions between government and citizens. And while Japan has the third-highest absolute number of machine-to-machine (M2M) SIM card connections, it lags behind the OECD average on a per capita basis, suggesting that there is much potential for an expansion of this technology which underpins the Internet of Things.

To fully reap the benefits of the digital transformation, access to digital infrastructure needs to be complemented by investment in skills, R&D, software and data, an ability to engage in organisational change and process innovation, and a sound competitive environment that boosts business dynamism. Japan recognises the importance of digital technologies for its economy and society and has implemented a number of policy measures spanning firms, individuals and the government itself to boost the transformation (OECD, 2017h). For example, Japan provides support for firms' investment in R&D infrastructure and the integration of ICT, as well as tax incentives for investment in digitalisation and in digital security products. It also not only encourages schools to familiarise students with computers but also provides instruction on information ethics. Within the public administration, Japan implements a Government Electronic Procurement System, as well as electronic documentation management, and it has legislation defining public access to public sector information. Furthermore, the Basic Act on the Advancement of Utilizing Public and Private Sector Data was promulgated in December 2016 to develop an environment for using public and private sector data.

A stronger focus on skills would create further benefits for Japan. While Japan has the highest share of top performers in science and mathematics in PISA, even a strong initial education is not sufficient to prepare workers to benefit from the digital economy and

adapt to new and unexpected occupations and skill needs. But a relatively low percentage of workers in Japan receive firm-based training - 50% in 2015, compared to over 60% in Germany and the United Kingdom, and 71% in the United States. Moreover, less than 40% of the working population achieve a medium or high performance score on problem solving in technology-rich environments. There is a very large generation gap for women (just 4% of them achieve medium or high performance in the age bracket of 55-65, compared to 56% for the 25-34 age group). Continuing to address the generation gap to harness the full potential of Japan's workforce is critical.

Addressing regulatory issues, including special economic zones and regulatory sandboxes

Priorities for regulatory reform in Japan include: 1) reducing the high level of regulatory protection of incumbents; 2) reducing administrative burdens on start-ups toward those of the best-performing countries; and 3) reducing the complexity of regulatory procedures. Regulatory reform should focus on services where productivity growth has lagged. In some services, regulations limit or prohibit the entry of corporations on the grounds of protecting consumers, thereby ensuring a large role for non-profit organisations (including social welfare corporations). The rationale is that corporations maximise their profits, while non-profit organisations do not. Based on this logic, corporations are not permitted to manage hospitals, and purchase of farmland is limited to agricultural production corporations that satisfy certain requirements. Even when corporations are allowed to provide social services, they are not granted the same tax advantages or government subsidies available to non-profit organisations providing similar services. Such exclusion of corporations provides de facto protection for small non-profit organisations. Regulations on the entry of corporations prevent economies of scale and the widening of consumer choice. Many of the fastest-growing sectors in the Japanese economy (such as health and long-term care and childcare) are thus largely off-limits to corporations, limiting productivity gains (OECD, 2017b).

The government should provide an institutional foundation that promotes innovation, in part by adapting intellectual property protection to the digital economy. The National Strategic Special Zone initiative that was launched in 2013 allows reforms in specific geographic areas. The reforms adopted in the ten zones established thus far should be extended nationwide.

In addition, Japan is introducing two regulatory sandbox programmes. A project-based regulatory sandbox allows firms to demonstrate new technologies and business models related to the Fourth Industrial Revolution (not limited to financial technology). In this programme, relevant regulations are not applied immediately. The number of participants and duration are limited. The second programme is an area-limited regulatory sandbox that allows firms to develop automated driving and long-range drones in the National Strategic Special Zones. An evaluation of the results will lead to the development of appropriate regulation. This approach could be extended to other sectors and other regions to encourage innovation.



Using innovation for local development

Place-based policies to foster innovation and local development are growing in importance in many OECD countries and beyond. The potential to benefit from a country's innovation policy and contribute to its innovation performance varies considerably across regions, including in Japan. While Japan is home to several strong regional innovation systems, these appear to remain very Japan-centred and even disconnected from one another. Even Japan's most innovative regions are not strongly integrated into global innovation networks, and the trend has not improved over time. Japan's regional innovation systems have much to offer the rest of the world and much to gain from it, and efforts to integrate Japan's innovative regions into global networks help ensure that more knowledge is brought to Japan. This could not only benefit the most innovative regions, but could spread to other parts of the country as well.

Regions and cities are becoming increasingly important actors themselves in developing policies for innovation, and an increasing number have formulated innovation strategies, a trend that is likely to continue. Japan could do more to stimulate such plans to boost innovation, particularly outside the largest cities. Japan invests heavily in knowledge creation, but the return on that investment in terms of total factor productivity growth could be improved. Well-known examples of place-based initiatives to promote innovation which could be of interest to Japan include the Smart Specialisation Strategies approach developed initially in the European Union and subsequently adopted in several countries in South America and Asia. Further measures to facilitate innovation at the regional level, as well as to address local skill shortages, could improve the returns in all regions of the country.

Key recommendations

- Foster greater collaboration between industry and academia by focusing on the demand side, including through the use of incentives such as innovation vouchers and public procurement for innovation.
- Continue to promote the internationalisation of public research by enhancing the quality of academic research, and sustain the development of international research data platforms and researcher networks.
- Strengthen support for lifelong learning and workplace training to ensure that adults have opportunities to improve their skills and participate fully in the digital transformation.
- Promote the development of equity capital that is available to innovative SMEs, and continue to encourage financial institutions to collateralise intellectual property.
- Further develop regional strategies to promote local development across the country, not only in leading innovation hubs, including through greater firm-to-firm and university-to-firm collaborations.

7 Boosting trade and investment

International trade and investment play an important role in Japan's economy and have been the focus of policy reform efforts in recent years under the structural reform programme known as the third arrow of Abenomics. Japan has relatively few restrictions on trade in services and investment, scoring highly on both the OECD's Services Trade Restrictiveness Index and the Regulatory Restrictiveness Index on foreign direct investment (FDI). However, the total stock of inward FDI as a share of GDP in Japan is the lowest in the OECD area. Deepening Japan's integration in the global economy would help to face the challenges of low productivity and an ageing population. In addition, Japan should advance policy reforms to foster corporate governance.

Deepening Japan's integration into the global economy would boost productivity and growth

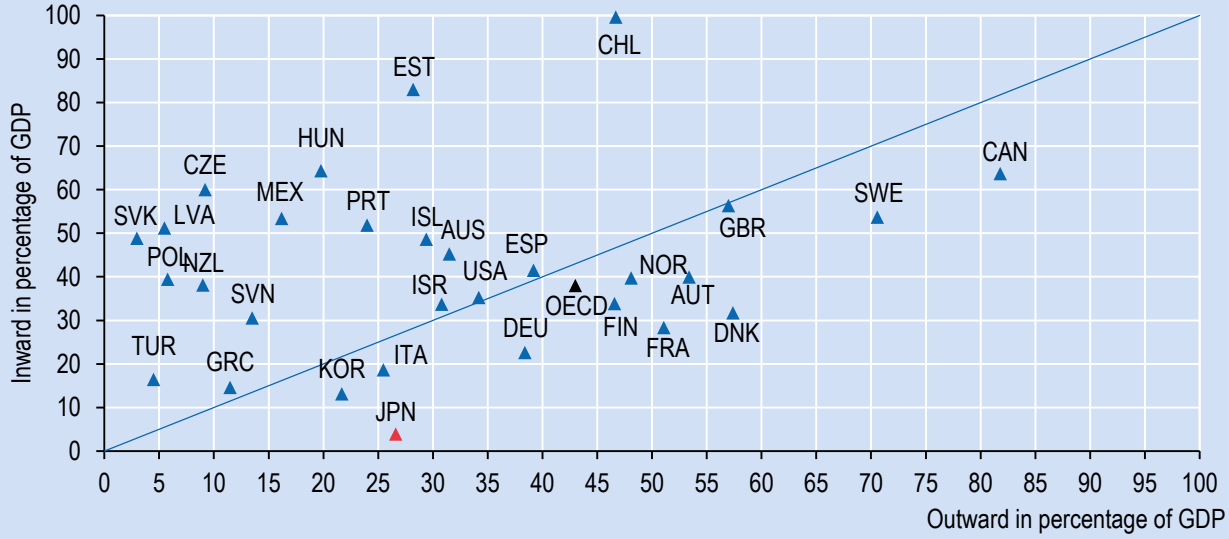
Although Japan is one of the largest OECD members, accounting for 8% of OECD GDP in 2015, its shares of total OECD trade and investment are lower. Japanese exports and imports each accounted for 6.5% of the OECD totals. Moreover, Japan has a low level of inward FDI stocks (Figure 7.1). Japanese outward investment accounted for 6% of OECD total outward FDI, and inward investment accounted for just 1%, the lowest share in the OECD (OECD, 2017i).

Japan is also considerably below the OECD average in terms of export orientation (as measured by the share of domestic value added that meets foreign final demand), at 14% of GDP, similar to the United States. In Japan, the export intensity of foreign-owned firms (as measured by the share of exports in turnover) is much lower than the OECD median, partly reflecting a relative orientation towards serving the comparatively large Japanese market (Figure 7.2). The import content of exports, an indicator of integration into global value chains (GVC), is relatively low for Japan at the aggregate level.

Together, these figures indicate that the main channel through which Japan participates in GVCs is its outward investment. There would therefore seem to be scope for broadening the channels through which Japan connects with the global economy, in particular by increasing inward investment. This would make a positive contribution to competition and productivity, especially in some critical service sectors.

FIGURE 7.1. JAPAN HAS A LOW LEVEL OF FDI STOCKS

Inward and outward stocks of direct investment as a percentage of GDP, 2016



Note: Inward/outward FDI not represented: Belgium (102/122), Ireland (276/276), Luxembourg (351/353), the Netherlands (107/180) and Switzerland (130/165).

Source: OECD (2018), FDI stocks (indicator), http://dx.doi.org/10.1787/80eca1f9-en.

Supporting services trade liberalisation would promote greater integration in GVCs and provide significant economic benefits

The OECD-WTO Trade in Value-Added Database shows that services account for 18% of Japan's gross exports, but for more than half of value-added exports, demonstrating the importance of services to Japan's economy. It also indicates that Japan's exports of goods rely intensively on services inputs. However, the contribution of services to exports is still lower than the OECD average. Japan thus has the potential to realise economic gains through services trade liberalisation, to boost the competitiveness and productivity not only of service industries, but also of manufacturing industries. The advantages of GVC integration are further increased by foreign firms' transfers of skills and technology to domestic industries.

Japan has made progress in recent years in reducing a number of regulations that restrict trade in services. In 2017, for example, Japan amended the Customs Business Act, removing economic needs tests and the requirement that customs brokerage firms place at least one qualified customs specialist at each office. The OECD Services Trade Restrictiveness Index shows that most of Japan's services markets are more open than the OECD average, with the notable exception of legal services.

Compared to best practices, however, there is still room to further reduce sector-specific restrictions. Japan could improve the efficiency of its economy by prioritising reforms that enhance competition in services markets, particularly in sectors related to transport and distribution supply chains, which are essential to efficient value chains. Sectors related to digital networks are another priority for reform, as they play an important role as a basis for digital innovation.

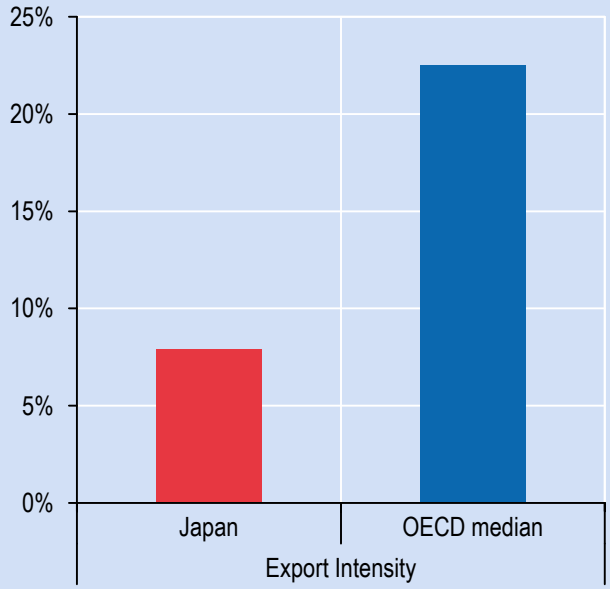


Addressing structural barriers to inward FDI could boost productivity

Overall, Japan's productivity level is still only around 65-85% of large European economies (e.g. France, Germany, Italy and the United Kingdom). Sub-par productivity is particularly acute in the services sector. Labour productivity in the services sector is roughly 70% of that in manufacturing, compared to the OECD average of 92% (OECD, 2016e). Barriers to trade in services are high in a number of sectors, combining restrictions to foreign entry, barriers to competition and tight regulations on the movement of people (Figure 7.3).

FIGURE 7.2. FOREIGN-OWNED ENTERPRISES IN JAPAN HAVE LOW EXPORT INTENSITY

Export intensity of foreign-owned enterprises



Source: OECD (2017j), Japan: Trade and Investment Statistical Note, OECD Publishing, Paris, http://www.oecd.org/investment/JAPAN-trade-investment-statistical-country-note.pdf.

Narrowing the productivity gap requires further reforms to reduce entry barriers, especially in services, and to encourage more inward FDI (OECD, 2017i). Japan has the lowest stock of inward FDI relative to GDP across OECD countries (Figure 7.1), despite having relatively few restrictions on FDI. Likewise, product market regulations overall are less stringent than the OECD average. Yet regulations in some services sectors remain relatively restrictive, holding up potential economy-wide productivity gains. Japan should aim to achieve best practices in the area of regulation.

Firms could enhance Japan's productivity performance by further incorporating global best practices, for example by taking advantage of opportunities for internationalisation and corporate restructuring as well as industry reorganisation pressures to achieve economies of scale, streamline operations and acquire new capabilities. Both inward and outward FDI may play an important role in this regard by supporting a more efficient allocation of capital by individual firms and across industries.

Continuing corporate governance reforms

Japan has made progress in improving its corporate governance framework, introducing a Stewardship Code in 2014 and a Corporate Governance Code in 2015 and actively monitoring their implementation through the Government's Council of Experts. Continuing to improve the corporate governance framework will be essential, as this affects access to equity, the allocation of capital and the monitoring of firms' overall performance.

The Japanese primary equity market has been doing relatively well in recent years. The *OECD Equity Markets Review: Asia 2017* shows that Japanese companies raised the largest amount of equity capital in Asia (excluding IPOs by Chinese companies) between 2000 and 2016 (OECD, 2017j). The Review also shows that equity markets for smaller companies remain strong in Japan, while IPOs by smaller companies have decreased significantly in the European Union and the United States over the last ten years. Further improvements to corporate governance will affect the performance of Japan's equity markets in the future.

Effective implementation of the Stewardship and Corporate Governance Codes should be further enhanced through dialogue between investors and companies, giving companies better access to the capital needed for investment in research, innovation, human resources and fixed capital. The government's New Economic Policy Package advocates enhancing such dialogue. Priority issues that should be addressed in the reform include:

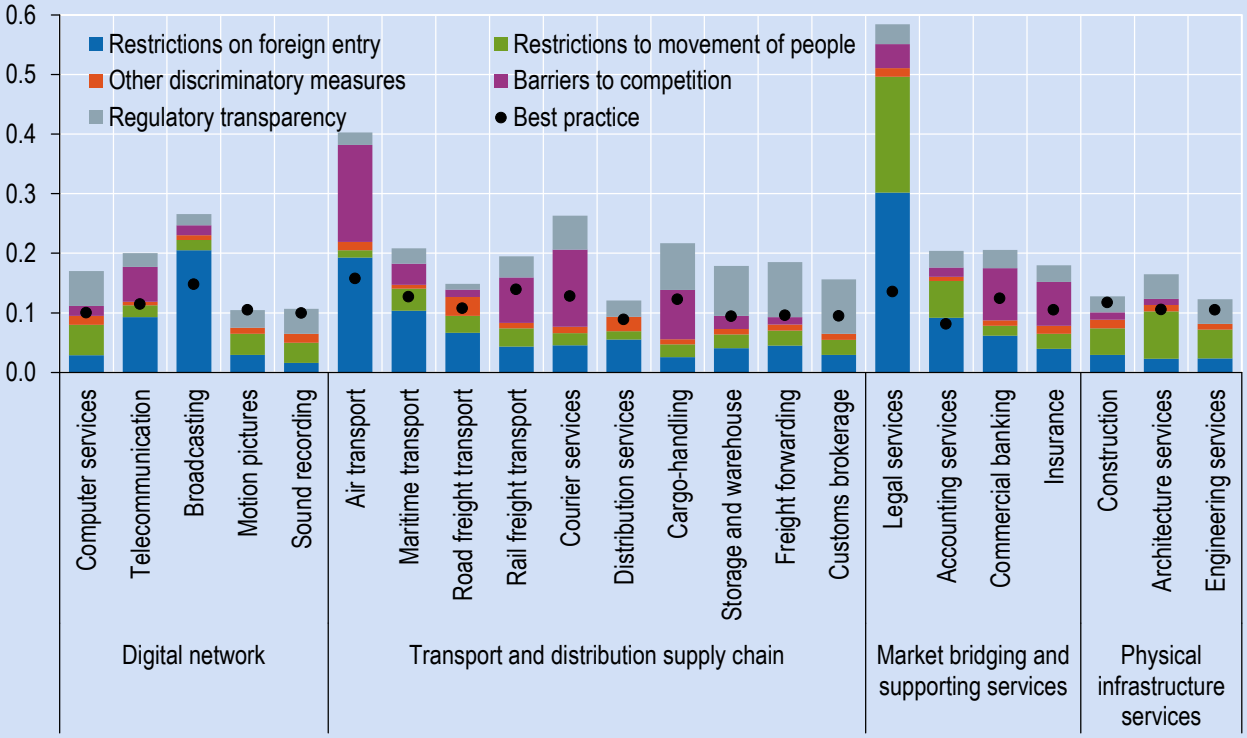
- *Cross-shareholdings*: As highlighted in the Policy Package, it is imperative that companies clarify their policies on cross-shareholdings, which have led to a hollowing out of capital and weakened the influence of minority shareholders. Bearing these possible negative effects in mind, companies should re-examine the economic rationale for cross-shareholdings and consider policies to reduce them. To the extent that they discourage mergers and acquisitions, cross-shareholdings can act as a de facto restriction on inward FDI.
- *Independent directors*: An increasing number of Japanese companies have appointed multiple independent directors in line with the Corporate Governance Code. In order to make the independent-director system function effectively, companies should ensure that independent directors recognise their roles and properly oversee management. Companies should also establish a support structure for independent directors, including providing sufficient staff so that independent directors can make constructive contributions to discussions at board meetings.
- *Aligning incentives*: Aligning the remuneration of key executives and the board with the longer-term interests of the company and its shareholders is another important issue. Companies should design their remuneration system to provide incentives for increasing corporate value over the medium-to-long term.

Playing a more active leadership role in promoting responsible business conduct (RBC)

Social responsibility is embedded in the Japanese corporate culture, forming part of the DNA of enterprises, particularly in long-standing companies. The *Sampo Yoshi* philosophy, developed centuries ago, stipulates that successful companies are those that can give triple satisfaction - to the customer, to society and to themselves. Japanese corporate management is also known for the importance it attaches to the long term and the development of trusted relationships with communities, so that enterprises are considered good corporate citizens.

FIGURE 7.3. JAPAN HAS ROOM TO FURTHER REDUCE BARRIERS TO TRADE IN SERVICES

OECD Services Trade Restrictive Index 2017, from 0 (least restrictive) to 1 (most restrictive)



Source: OECD Services Trade Restrictiveness Index, http://www.oecd.org/tad/services-trade/services-trade-restrictiveness-index.htm.

They have therefore voluntarily addressed RBC as an integral part of their corporate activities. This is a recurrent explanation for the continuity of business management, enterprise risk management and the resilience of Japanese companies to adversity, such as the 2011 Great East Japan Earthquake.

As a leading global source of FDI, Japan is well positioned to play an important role in promoting RBC and the positive role that OECD RBC instruments, such as the Guidelines for Multinational Enterprises (OECD, 2011) and various Due Diligence Guidance documents, can play in this regard. Like many countries, Japan can do more to promote improved RBC standards in the international value chains of Japanese multinational enterprises.

Key recommendations

- Reduce barriers to trade and inward FDI, including in key services sectors, particularly those that play an important role in global value chains and digital innovation, with a view to boosting competition and productivity.
- Advance corporate governance reforms, especially with respect to cross-shareholdings and independent directors, and align the remuneration of key executives and the board with the longer-term interests of the company and its shareholders.
- Leverage Japan's position as a leading global source of FDI to more proactively promote responsible business conduct and to support responsible international supply chains.

8 Making the most out of international sports events

Japan has a long-standing tradition of hosting global sporting events, dating back to the Tokyo 1964 Olympic and Paralympic Games, which showcased a modern city to the world and came to symbolise Japan's post-war recovery. In the coming years, the Rugby World Cup 2019, the Olympic and Paralympic Games Tokyo 2020 and the World Masters Games 2021 will create unique opportunities to use sport as a catalyst for local development, inclusive economic growth and sustainable development, explicitly aiming to support ongoing recovery efforts following the 2011 earthquake through event legacy plans. Each event is underpinned by mutually reinforcing goals to promote sport and optimise benefits and outcomes throughout Japan, including contributing to well-being and national identity as well as tourism promotion. Preparation for this event should be based on transparency, integrity, accountability and shared benefits, which will be critical to the effective delivery of forthcoming events in Japan.

Using sports events as catalysts for local growth

Japan has hosted a range of high-profile international sports events, such as the 1964 Olympic and Paralympic Games, the 1972 Winter Olympic Games, the 1998 Winter Olympic and Paralympic Games, the 2001 East Asian Games, the 2001 World Swimming Championships, the 2002 FIFA World Cup (co-hosted with Korea), the 2006 FIBA World Championship, the 2015 WBSC Premier 12 and the 2017 Asian Games. These events were often considered important opportunities to stimulate local growth and development. The Tokyo 1964 Olympic and Paralympic Games demonstrated, for example, that hosting a major world sports event could raise the international profile of both the host city and the country itself.

The Tokyo 1964 Olympic and Paralympic Games also enabled large-scale redevelopment of Tokyo, a city heavily damaged by earthquakes and war. The Tokaido Shinkansen high-speed train was built for the Olympic and Paralympic Games and came to symbolise a new emerging economy looking to the future and repositioning Japan as a global power. Subsequent events have sought to leverage long-term infrastructure investments, boost tourism and trade, create jobs and, through multi-venue events (the 2002 FIFA World Cup), create local development benefits throughout Japan. Hosting global sports events has also been an opportunity for innovation in the construction sector and to embed Japanese firms into the delivery of large-scale events.

Sports events require significant investments, particularly in facilities, more so than other global events. Such facilities can lead to environmental damage and suboptimal societal outcomes, such as the relocation of local residents and increased property prices. To address such challenges, host cities and nations increasingly seek to achieve more holistic legacies and impacts. The costs of hosting a major event should consider both the success of the event and the value of the legacy in terms of local development benefits, such as infrastructure investments, job creation and tourism. A well-planned event with a carefully-designed legacy will attract higher levels of domestic and foreign investment. With this in mind, Japan has explicitly linked the 2017 Asian Games through to the 2021 World Masters as opportunities to boost national recovery efforts and to benefit local areas throughout the country.

Looking forward to the Rugby World Cup 2019, Japan aims to use the event to boost tourism and local growth opportunities as well to promote sports in the country. Just as with the 2002 FIFA World Cup, this is the first time that the event has been awarded to Asia, and it is serving to raise the profile of Japan. Japan has taken strategic decisions to maximise previous infrastructure investments for the Rugby World Cup 2019. The tournament will take place in 12 cities but only one new stadium will be built,

the Kamaishi Recovery Memorial Stadium. Six of the eight stadiums built for the 2002 FIFA World Cup will be used. The systematic approach to creating local outcomes for all host cities that proved successful in 2002 will be followed, to achieve meaningful impacts and legacies throughout Japan from the Rugby World Cup 2019.

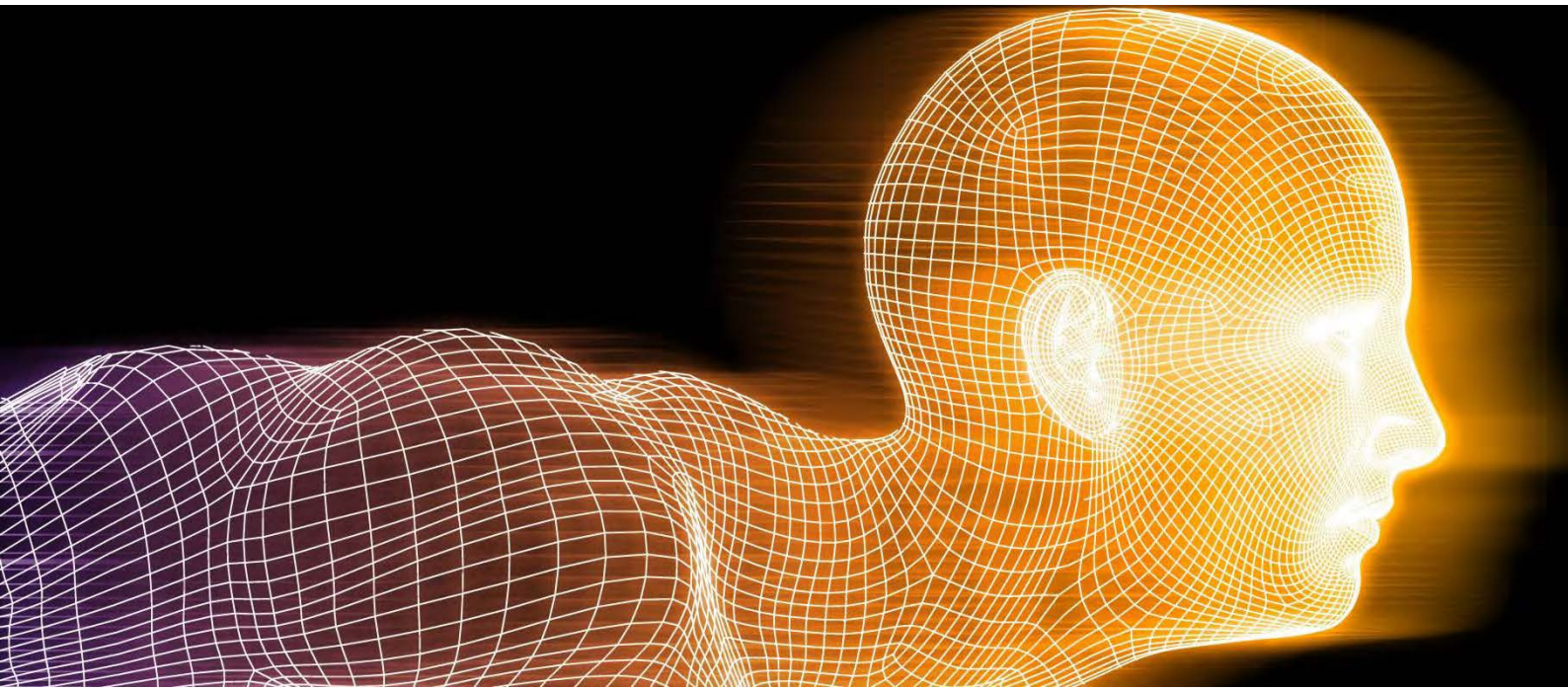
The Olympic and Paralympic Games are resource-intensive events that can prove costly for host nations. In the face of escalating costs, the Tokyo Organising Committee worked with partners in the national government and the Tokyo Metropolitan Government to reduce the budget to 0.25% of GDP (JPY 1.35 trillion) as from December 2017. Taking into consideration the recent announcements by the International Olympic Committee (IOC) to actively engage in the monitoring and reporting of legacy outcomes, the Tokyo Organising Committee has committed to seek further efficiency savings.

As required by the IOC, the Tokyo Organising Committee is committed to creating a long-term legacy for Japan and to ensuring that the event is environmentally sustainable. The Tokyo 2020 Action and Legacy Plan and the High Level Sustainability Plan are thus critical elements of the Olympic and Paralympic Games Tokyo 2020. The Legacy Plan focuses on sport and health, urban planning and sustainability, culture and education, the economy and technology, and national economic growth. The Sustainability Plan commits to observing relevant United Nations Conference of the Parties agreements and the United Nations Sustainable Development Goals. Each of these Plans will serve to ensure that the event acts as a catalyst for other key policy goals. Furthermore, Tokyo 2020 is benefiting from important reforms at the IOC through Agenda 2020 and the new legacy reporting framework. Tokyo 2020 will be the first Olympic and Paralympic Games to apply the framework to identify, classify and communicate potential legacies during the event life cycle.

OECD policy recommendations can help Japan's efforts to create meaningful legacies and local development benefits from hosting international sports events. The *OECD Principles on Leveraging the Benefits of Global Sports Events* (OECD, 2017l) and the draft *OECD Draft Council Recommendation on Global Events and Local Development* highlight the importance of policy co-ordination, including across levels of government, as well as addressing outcome-based frameworks that consider economic, social and environmental considerations.

Ensuring integrity around global sports events

Sport is an opportunity to teach millions of people the value of fair play and the importance of abiding by the rules of the game and ensuring a level playing field. Sport is also a multibillion-dollar industry with intricate ties to public and private interests. The selection and organisation of major sporting events carry high risks of conflict of interest, corruption and serious misconduct because of the significant resources and funds involved, the complex financial arrangements required, often under tight schedules, and the need for co-operation from a varied group of stakeholders. These risks may also undermine the positive social and economic benefits for the hosting city or country.



Acknowledging these challenges, Japan joined the 2017 commitment of G20 Leaders to: "continue our work to address integrity in sports and […] strive for a common understanding regarding corruption risks in bids to host major sport events." This commitment builds on that made by Japan at the 2016 London Anti-Corruption Summit to encourage good governance and transparency within sports bodies and support the global movement to protect sport integrity in co-operation with international sport organisations, governments and inter-governmental organisations.

To address the challenge of corruption in sport, the International Partnership against Corruption in Sport (IPACS) was launched at the IOC's International Forum on Sport Integrity in February 2017. IPACS brings together international sports organisations, inter-governmental organisations (including the OECD), and governments (including Japan as a G20 country and the future host of major sporting events) in a multi-stakeholder platform aimed at strengthening and supporting efforts to eliminate corruption and to promote a culture of good governance in and around sport. In December 2017, IPACS established three substantive, technical taskforces focusing on priority areas: 1) reducing the risk of corruption in procurement relating to sporting events and infrastructure; 2) ensuring integrity in the selection of major sporting events, with an initial focus on managing conflict of interest; and 3) optimising the processes of compliance with good governance principles to mitigate the risk of corruption.

The work of the taskforces will build on relevant international standards, including the *OECD Recommendation on Fighting Bid Rigging in Public Procurement* (OECD, 2012), the *OECD Recommendation on Public Integrity* (OECD, 2017k), and the *OECD Good Practice Guidance on Internal Controls, Ethics, and Compliance* (OECD, 2010b), as well as ongoing work on quality infrastructure at the OECD and via the G7, G20, and APEC contexts. Relevant lessons will also be drawn from previous OECD experiences in helping governments adapt such standards to the selection and organisation of major events and infrastructure, including major sporting events.

Promoting responsible business conduct in global sports events

The organisation of major sporting events, such as the Olympic and Paralympic Games Tokyo 2020 and the Rugby World Cup 2019, may require the resolution of irregular conduct through quick and non-judicial grievance mechanisms. The *OECD Guidelines for Multinational Enterprises* (OECD, 2011) set out expectations of business conduct across a variety of topics, including human rights, labour, environment and corruption. The OECD National Contact Points (NCPs) are responsible for assisting stakeholders to find a resolution for issues arising from alleged non-observance of the Guidelines by offering good offices and facilitating access to consensual and non-adversarial procedures (e.g. conciliation or mediation). In the past, the NCPs have received claims about companies' conduct in the context of the FIFA 2022 World Cup and Formula One. In both instances, a joint resolution was reached through mediation. The NCP in Japan may provide similar avenues in the context of the Olympic and Paralympic Games Tokyo 2020 and the Rugby World Cup 2019.

Key recommendations

- Effectively leverage the Rugby World Cup 2019 and the Olympic and Paralympic Games Tokyo 2020 to create local employment and tourism strategies that result in long-term positive outcomes.
- Design evaluation frameworks to assess impacts and outcomes of each event based on clear and measurable targets, and set longitudinal requirements to evaluate post-event impacts and legacies.
- Contribute to and benefit from the IPACS network and its expertise, especially the Task Force on reducing the risk of corruption in procurement relating to sporting events and infrastructure.

9 Greening the Japanese economy

Japan should accelerate its efforts to achieve its targets for reduction of greenhouse gas emissions under the Paris Agreement, particularly given its increased dependence on fossil fuels after the Fukushima accident in 2011, and scale up ambition to go beyond current targets while supporting energy security and economic growth. Japan should establish a strategy towards the long-term climate goal by 2050, advance the ongoing electricity sector reform and move forward on energy efficiency and innovative low-carbon technologies, including renewables and nuclear energy under maximum safety. There are significant opportunities to promote green finance and investment. Japan has been a relatively slow starter in this area, but recent trends are positive. While Japan has made significant progress in resource efficiency, further improvement could be sought through an integrated policy approach.

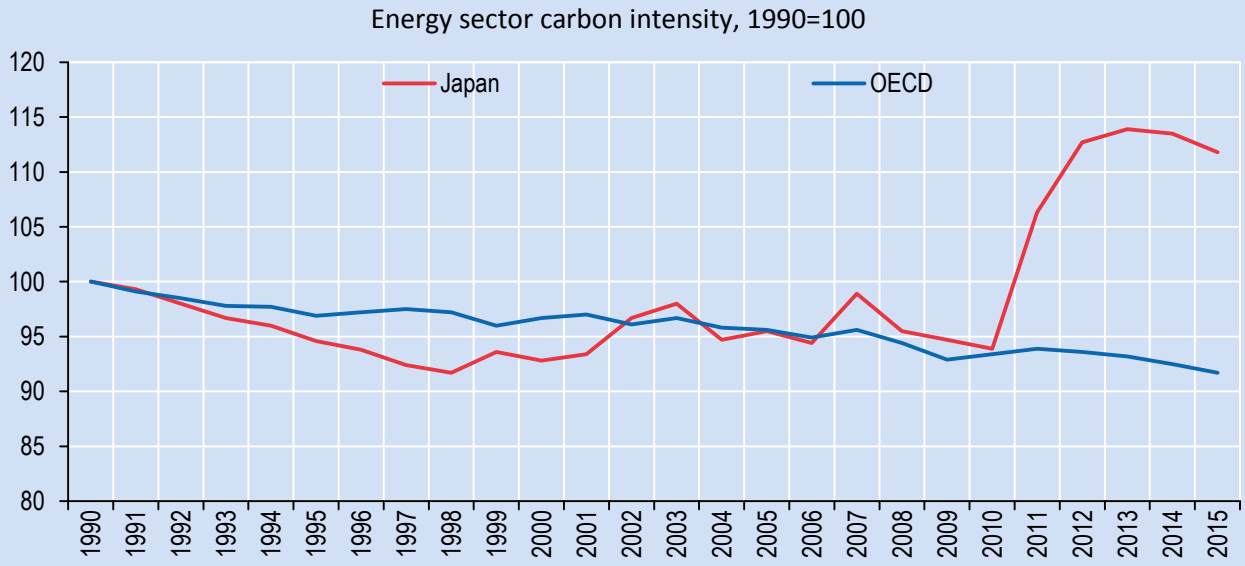
Scaling up ambition to tackle climate change

Japan is one of the largest economies and greenhouse gas (GHG) emitters among OECD countries (1.325 MtCO2e in 2015), with the main emission sources being energy (89%) and industrial processes (7%). Japan's Nationally Determined Contribution (NDC) under the Paris Agreement aims to reduce the country's GHG emissions by 26% from FY 2013 levels by FY 2030. Japan will need to accelerate efforts in order to achieve its emission reduction targets and should step up mitigation ambitions even beyond the current NDC, which is considered insufficient to achieve its long-term climate goal under the Paris Agreement.

The carbon intensity of Japan's energy mix jumped after the Fukushima accident in 2011 (Figure 9.1), largely due to the shutdown of nuclear power reactors and the subsequent increase in fossil-fuel use. Although carbon intensity in Japan has plateaued in recent years, it is still higher than the OECD average. The share of fossil fuels in Japan's total primary energy supply also remains high (91% in 2015 compared to 83% in 1990). The majority of nuclear plants are still suspended, and reactivation will be realised slowly. Japan's nuclear power safety requirements are now among the most stringent in the world (OECD, 2016f). The International Energy Agency (IEA) projects that the share of nuclear in power generation would need to rise from 2% today to 32% by 2040 for Japan to meet its GHG emission targets under the Paris Agreement. Japan should endeavour to lower its carbon intensity through energy efficiency improvements, utilising nuclear generation under maximum safety and more ambitious deployment of low-carbon energy sources, including renewable energy.



FIGURE 9.1. CARBON INTENSITY OF JAPAN'S ENERGY MIX JUMPED AFTER 2011 AND REMAINS HIGH



Note: The IEA Energy Sector Carbon Intensity Index tracks how many tonnes of carbon dioxide are emitted for each unit of energy supplied (total primary energy supply).

Source: IEA (2018), "Indicators for CO2 emissions", IEA CO2 Emissions from Fuel Combustion Statistics (database), http://dx.doi.org/10.1787/data-00433-en.

Reforming the electricity sector to boost resilience, economic efficiency and low-carbon investment deployment

Japan set the direction of its energy policies in the 2014 Strategic Energy Plan and the 2015 Long-term Energy Supply and Demand Outlook. The Outlook envisages substantial growth in low-carbon energy sources, with renewable energy accounting for 13-14% of primary energy supply and 22-24% of electricity power source by 2030, and nuclear energy accounting for 10-11% of primary energy supply and 20-22% of electricity power source. This estimate is consistent with Japan's mitigation targets in its NDC.

To promote renewable electricity following the Fukushima accident, Japan introduced a feed-in tariff (FIT) system in 2012. The FIT managed to significantly boost renewable energy deployment, but growth was concentrated on solar photovoltaics (PV), without sufficient regard to cost, geographical diversification or grid integration of the facilities. Japan has reformed the FIT system, in part by introducing a tendering system for large solar PV, starting in April 2017. The government should review the implementation of the FIT reform and endeavour to accelerate the deployment of a more diverse range of renewable energy sources. Japan should also address other potential barriers to the deployment of renewable energy, such as construction regulation and limited grid connection.

The ongoing reform to enhance the diversity and flexibility of the electricity market is important for ensuring secure and affordable electricity supply and promoting investment in low-carbon electricity. The first two phases have already been launched: the establishment of an organisation for cross-regional co-ordination of transmission and the liberalisation of retail electricity markets. The government should continue to work on the third phase, the legal separation of power transmission and distribution sectors by FY 2020, and should monitor the effectiveness of these reforms.

Japan started discussions on the review of the Strategic Energy Plan and long-term energy policies in the summer of 2017. These discussions should be in line with the long-term climate goals under the Paris Agreement, while enhancing energy security and economic growth. Japan aims to reduce GHG emissions by 80% by 2050, simultaneously pursuing global warming countermeasures and economic growth, as set out in the Plan for Global Warming Countermeasures. It now needs to establish the strategy to achieve this long-term goal, which may call for a major transformation of the economy. As discussed in various OECD reports, such a transformation will require alignment in different policy areas, including energy, environment, finance and fiscal policies, and thus must be addressed by the whole of the government.

Accelerating innovation in low-carbon technologies and disseminating such technologies will help both domestic and international efforts

Achieving long-term climate goals will also require development and deployment of innovative technologies that contribute to substantial reductions of GHG emissions. Japan launched the Basic Hydrogen Strategy in December 2017. It aims to increase the domestic use of hydrogen energy, promote international standardisation of hydrogen technologies and build an international supply chain of hydrogen. The government should accelerate basic research and development activities on hydrogen, along with other innovative technologies, avoid lock-in of specific technology choices, develop an enabling environment for open innovation and disseminate low-carbon technologies (e.g. by opening up patents). This will help not only Japan's low-carbon transition, but also the global effort against climate change.

Mainstreaming green finance and investment

Despite having one of the largest financial markets in the world, Japan has been relatively slow to take up green finance activities, compared to other developed economies. This, however, means that there are significant opportunities for mobilising Japan's financial capital towards green finance and investment. Changes are already taking place. For example, the Government Pension Investment Fund (GPIF), the world's largest pension fund (managing more than USD 1.4 trillion of assets), signed the Principles for Responsible Investment in September 2015. GPIF is asking its asset managers to consider environmental, social and governance (ESG) factors in their investment decisions and has adopted three ESG-based indices to guide its passive investment. The revised Stewardship Code, published by the Financial Services Agency in 2017, clarifies that ESG factors, including environment-related risks and opportunities, are among the elements which institutional investors may consider as part of their fiduciary duty. While climate change is not explicitly referenced in the Stewardship Code, it could be understood to be an important element of environment-related risks and opportunities. Also, the Task Force on Climate-related Financial Disclosures (TCFD), set up by the Financial Stability Board, has published recommendations on enhancing disclosure of climate-related information by firms, although the government has yet to officially react to those recommendations. The government could further encourage firms, financial institutions



and investors to seriously consider climate change risks and opportunities in their business strategies, including through implementation of TCFD recommendations.

Japan's green bond market has been lagging behind those in other major economies. To date, there have been only a handful of examples of green bond issuance by private or public Japanese entities. There are, however, signs that Japan is starting to scale up efforts in this area. The Ministry of the Environment published the Japanese Green Bond Guidelines in 2017 and launched a subsidy programme for providers of services related to green bond issuance in 2018. The Tokyo Metropolitan Government issued Tokyo Environmental Supporter Bonds in 2016 on a trial basis, and it issued the Tokyo Green Bonds in 2017. The Tokyo Stock Exchange launched a dedicated platform for green and social bonds in January 2018. The government should endeavour to raise the awareness of market participants about these developments and opportunities to promote further development of the green bond market in Japan.

The green finance and investment agenda is gradually taking hold in Japan. In October 2016, the 3rd OECD Green Investment Financing Forum (now renamed the OECD Forum on Green Finance and Investment) was held in Tokyo for the first time, gathering relevant ministries and industry players, along with international experts. At the 4th OECD Forum on Green Finance and Investment in October 2017, the Governor of Tokyo presented Tokyo's vision to become the capital of green finance by 2020, when the city will host the Olympic and Paralympic Games. However, the central government's engagement in this agenda is still limited and divided between different ministries, with no clear leadership. In advance of hosting the G20 in 2019, the government should establish a more co-ordinated framework for addressing the green finance and investment agenda across ministries.

Promoting an integrated policy approach to further improve resource efficiency

Since 1990, Japan has achieved a 40% improvement in resource productivity (measured in GDP per tonne of domestic material consumption). However, significant efforts are still needed to reduce per capita material consumption to more sustainable levels. There is broad recognition among OECD members that further progress is only possible through a more integrated policy approach that takes account of the full life cycle of materials and is based on the principles of the 3Rs (reduction of waste generation, reuse of parts, and recycling of used products and raw materials). In Japan, additional efforts could focus on strengthening upstream policies for waste management, such as reducing the amount of material used in production and consumption, as well as encouraging more reuse of materials and products. In the area of waste management, attention could focus on increasing recycling rates of municipal solid waste. Energy recovery is very high (75%) compared to other OECD countries. It should be maintained or could be improved by introducing further technology development, aiming to show good practice of transforming waste into energy.

Key recommendations

- Accelerate efforts to achieve the Nationally Determined Contribution through greater deployment of low-carbon energy sources, along with the on-going electricity-sector reform, and scale up the ambition beyond the current NDC.
- Establish a strategy towards the long-term climate goal by 2050, and consider steps for radical low-carbon transformation by aligning policies across the government, promoting R&D in innovative low-carbon technologies, including energy efficiency, renewables and nuclear, and disseminating such technologies.
- Encourage green finance and investment activities by firms, financial institutions and investors, with a more co-ordinated framework across ministries.
- Further improve resource efficiency, through a more integrated policy approach that takes account of the full life-cycle cost of materials and is based on the principles of the 3Rs.

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