Better Policies Series

JAPAN: BOOSTING GROWTH AND WELL-BEING IN AN AGEING SOCIETY

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BETTER POLICIES FOR BETTER LIVES

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Foreword

Japan is showing signs of renewed economic dynamism, despite headwinds from the sharp slowdown in demand from China and other Asian countries as well as advancing fiscal consolidation. Bold monetary easing – the first of Prime Minster Abe's "three arrows" – was a key factor behind this positive development. Japan also scores well on several well-being indicators and has maintained one of the lowest levels of unemployment in the OECD.

Despite these important achievements, Japan's per capita income, which matched the top half OECD countries in the early 1990s, has fallen 14% below. Revitalising growth thus remains the top priority. Stronger growth is also key to dealing with Japan's high public debt, which at almost 230% of GDP, is the highest ever recorded in the OECD.

Japan's future prosperity depends to a large extent on how the country manages the unprecedented demographic transition now underway. With the labour force shrinking more rapidly than the population, per capita output can only grow through increases in labour productivity and labour force participation. Labour productivity remains about one quarter below the top half of OECD countries. The Japanese government is determined to tackle these challenges through broad-based structural reforms, the third arrow of Abenomics. However, this third arrow has yet to be implemented in earnest.

While the scale of Japan's challenges may be exceptional, their nature is not. Many other OECD countries are also suffering from low productivity growth, rapid population ageing and high public debt levels. As a result, Japan's experience with addressing these challenges through innovative policy approaches will be of great value to its OECD peers.

Boosting productivity growth will require furthering Japan's trade integration through initiatives such as the Trans-Pacific Partnership, as well as making its corporate sector more dynamic through improved corporate governance and regulatory reform. Moreover, while Japan has a strong R&D base, investment in other types of knowledge-based capital such as organisational capabilities and vocational education and training could be stepped up.

Revitalising growth also requires better using Japan's pool of talent. Japanese women are very well educated, but their employment rate is currently 18 percentage points below that of men as women shoulder the bulk of care for children and older family members. Policies that make it easier for both men and women to combine work and family life, in part by changing Japan's culture of long working hours, can help address this problem. In addition, Japan needs to improve the employment opportunities for older people, notably by enhancing their ICT skills and fostering lifelong learning. In addition to boosting growth, such measures will contribute to a more inclusive society.

The well-being of the Japanese society also depends on policies to foster environmental quality. Priorities include increasing resource efficiency and reversing the sharp increase in the carbon intensity of Japan's energy mix, which resulted from the shutdown of Japan's nuclear reactors following the Great East Japan Earthquake in 2011. The shrinking of the Japanese population may actually present some important opportunities for reducing pressure on the environment, provided effective regional policies are in place that allow for a smart shrinking of cities.

For Japan to tackle its economic, social and environmental challenges, decisive policy action is needed that leads to broad-based reforms in many complementary policy areas. And it is needed swiftly. The OECD has prepared this brochure to support the Japanese government with its reform agenda and, as always, stands ready to provide any additional support that may help Japan follow a sustainable path to higher prosperity and well-being.

Mr. Angel Gurría
OECD Secretary General

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Key recommendations

- Maintain confidence in the fiscal situation by implementing a more detailed and concrete strategy to reduce spending and to raise revenues so as to achieve the government's target of a primary surplus by FY2020, and by steadily reducing the public debt-to-GDP ratio over the medium-to-long term.

- Reform public social programmes to limit spending increases, particularly in the areas of health and long-term care as well as pensions, including by raising the eligibility age.

- Continue to negotiate ambitious and comprehensive plurilateral, regional and sectoral trade agreements like the Trade in Services Agreement, and seek flexible pathways at the World Trade Organization (WTO) to address new and existing policy issues multilaterally.

- Support and monitor the implementation of the Stewardship Code and the Corporate Governance Code to promote their effectiveness.

- Favour the restructuring of non-viable firms and reduce disincentives to grow that may stem from public support to small businesses.

- Integrate high-quality work-based learning into all programmes (vocational and academic) by involving employers in the design of curricula, creating qualifications that are recognised by firms, and developing multiple pathways for developing youth skills.

- Reform the tax/benefit system so that both parents have broadly similar financial incentives to work.

- Work together with social partners to make workplace conditions more conducive to work and family life (e.g. by encouraging workers to take leave entitlements and curtailing the culture of long working hours).

- Continue supporting renewable energy while ensuring cost-effectiveness and improving the flexibility of the Feed-in-Tariff system (e.g. pricing mechanisms, frequency and methodologies for baseline cost estimation).

- Reinforce efforts to foster co-operation between cities outside the top three metropolitan areas through contracts among local governments that facilitate policy co-ordination and the concentration of key urban facilities or functions in core cities.

- Enhance the National Resilience Strategy by focusing on prioritised infrastructure development to be prepared for future risks in view of ageing infrastructure, and combining it with soft measures, such as the use of information technologies.

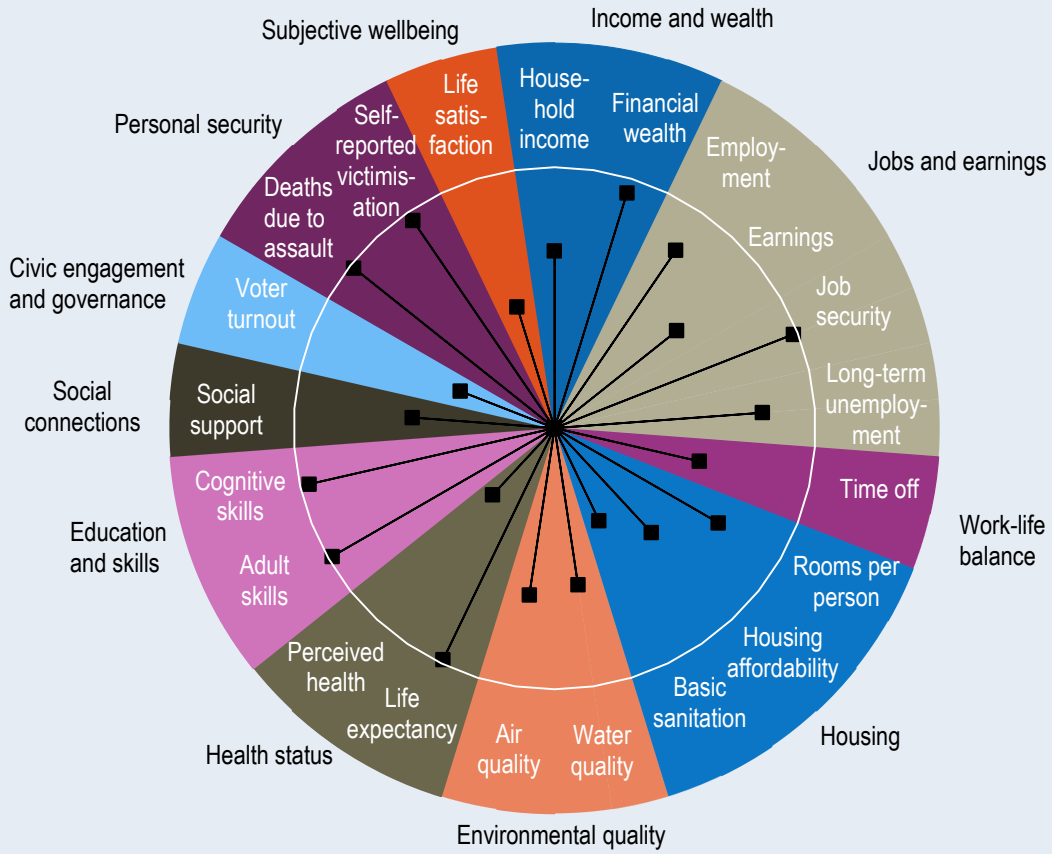
1 Introduction

With 25 years of sluggish economic growth, Japan's per capita income has fallen from a level matching the average of the top half of OECD countries in the early 1990s to 14% below that today. Weak growth, together with rapid population ageing, has driven public debt into uncharted territory. Revitalising growth is thus the top priority for the Japanese government. With the labour force shrinking more rapidly than the population, per capita output can only grow through improvements in labour productivity and labour force participation. Japan's highly-skilled labour force and its technological leadership can help close the gap with leading OECD countries in per capita income. But broad-based structural reforms, as envisaged in the third arrow of Abenomics, are needed to allow these strengths to fully achieve their potential. The initial impact of Abenomics in 2013 was impressive, and the reform process needs to continue.

How's life in Japan? A mixed picture

Japan is a front-runner in many respects. R&D spending as a share of GDP is near the top in the OECD area, and exceptionally high levels of education and training have provided the country with a skilled labour force, making it a leader in technology. Japanese 15-year-olds have the highest scores in science and reading in the OECD's Programme for International Student Assessment (PISA) and rank second in mathematics. Moreover, the country ranks first in the OECD Survey of Adult Skills. Japan also has the highest average life expectancy in the OECD and ranks at the top of the OECD in terms of personal safety (Figure 1.1). Both the homicide rate and the self-reported assault rate are the second lowest in the OECD (after the United Kingdom and Canada). Furthermore, at 73%, Japan's employment rate is well above the OECD average (65.7%), and the probability of becoming unemployed is lower than in any other OECD country. In addition, long-term unemployment is about half the OECD average. The average Japanese household is also quite affluent. Net household financial wealth is among the highest in the OECD, driven by a high stock of savings by the elderly generation.

FIGURE 1.1. **JAPAN'S WELL-BEING RECORD IS MIXED**
OECD Better Life Index, with longer (shorter) lines showing areas of relative strength (weakness)



Note: The centre of the circle depicts the worst-performing OECD country and the white circle depicts the best-performing OECD country. The black dots depict the performance of Japan.

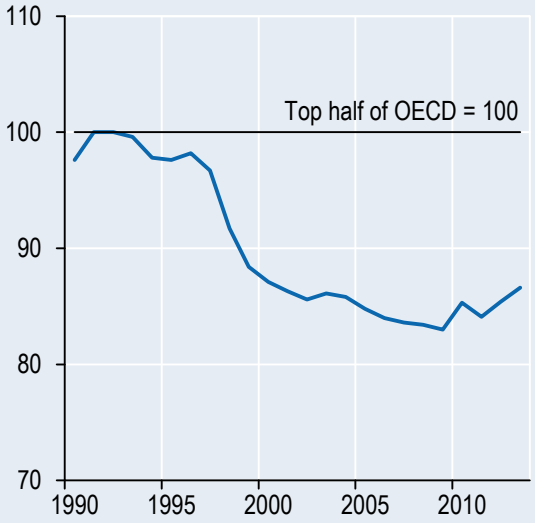
Source: OECD Better Life Initiative, www.betterlifeindex.org.

However, Japan lags other OECD countries in some other dimensions of well-being. Inequality is higher than in many other OECD countries. In 2011, the richest 10% of the population earned 10.7 times as much as the poorest 10%, compared to the OECD average ratio of 9.5%. Relative poverty is also higher in Japan than in most other OECD countries. In 2009, 16% of the population had an equivalised disposable income of less than half of the national median, according to standardised estimates from the OECD Income Distribution Database (for Japan, the estimates are based on the Comprehensive Survey of Living Conditions), compared to 11% across the OECD. In a similar vein, child income poverty is above the OECD average. In 2009, 15.7% of Japanese children lived in a household with an equivalised disposable income of less than half of the Japanese median income, compared to the OECD average of 13.7%. However, another survey, the National Survey of Family Income and Expenditure, shows a much lower relative poverty rate of 10.1%. Japan also ranks below the OECD average with respect to housing conditions. Housing is more expensive than in other OECD countries, and 6.4% of the population still live in dwellings without basic sanitation. The country also scores rather poorly on work-life balance, with 21.9% of all those employed working more than 49 hours per week.

With respect to GDP per capita, Japan's track record is mixed. With sluggish growth over the past quarter-century, Japan's per capita income has fallen behind leading OECD countries. Japan's GDP per capita grew by an average annual rate of 0.8% in real terms between 1990 and 2014, compared to 1.4% across the OECD. In 2013, average per capita income was 14% below the average of the top half of OECD countries, and average earnings of Japanese employees were lower than those of employees across the OECD. While the ageing of the

FIGURE 1.2. **PER CAPITA INCOME IS FINALLY STARTING TO CATCH UP AGAIN WITH THE TOP HALF OF OECD COUNTRIES**

Japan's per capita income relative to the top half of OECD countries



Source: OECD Going for Growth Database.

Japanese population was one factor, weak productivity growth also contributed to the drop in per capita income. Recently, however, GDP per capita has started to converge again towards the top half of OECD countries, helped by decisive policy action (Figure 1.2).

Further improving Japan's well-being will be challenging given the rapid ageing of the Japanese population

Japan's future economic prosperity and well-being depend to a large extent on how the country manages the unprecedented demographic transition now underway. Japan's population is shrinking and ageing very rapidly (Figure 1.3). The total population is projected to decline by almost 25% between 2010 and 2050, falling below 100 million. Meanwhile, the share of the elderly (65+) will rise from around 26% today, already the highest in the OECD area, to almost 40% at mid-century. Consequently, the elderly dependency ratio (the elderly population as a share of the working-age population), also the highest in the OECD – 42% in 2015 – will rise and remain the highest at 75% in 2050. This rapid ageing of the population makes it difficult for Japan to catch up with leading OECD countries in terms of per capita income.

To tackle the challenge of ageing, policies need to explicitly take account of its impact. Many of the expected negative economic consequences of ageing result not so much from the ageing of the population itself as from the sometimes perverse interactions between ageing and existing distortions, most notably in labour markets and pension systems, that encourage early withdrawal from the labour force. Well-articulated and complementary reforms to support healthier ageing, longer careers and more efficient healthcare, among other things, are more likely to offset the impact of ageing than piecemeal approaches.

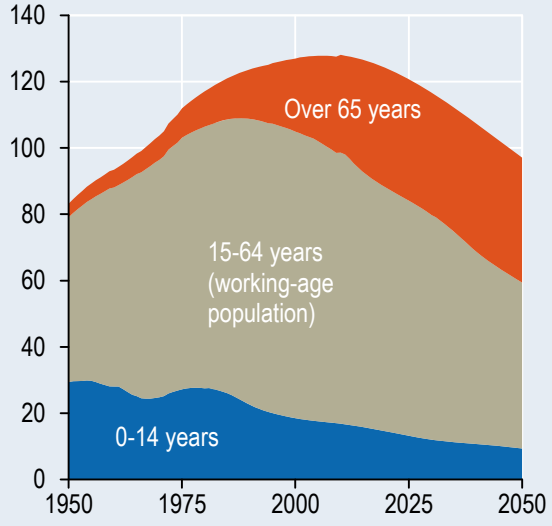
Weak growth and rapid population ageing have driven public debt into uncharted territory

Japan's sluggish economic growth has limited government revenue, while rapid population ageing has driven the up government spending, resulting in a serious fiscal problem. Japan's public debt ratio reached nearly 230% of GDP in 2015 (Figure 1.4), the highest ever recorded in the OECD. At the same time, the public deficit, though declining, remains large. OECD projections expect the deficit to come down to slightly below 5% in 2016 – a decline of about 1 percentage point relative to 2014 and 2015.

Putting the debt ratio on a downward trend requires effective use of all three arrows of Abenomics: bold monetary policy, flexible fiscal policy and a growth strategy. The arrows were reaffirmed by the government's Basic Policy on Economic and Fiscal Management and Reform

FIGURE 1.3. **JAPAN'S SHRINKING POPULATION IS INCREASINGLY OLD**

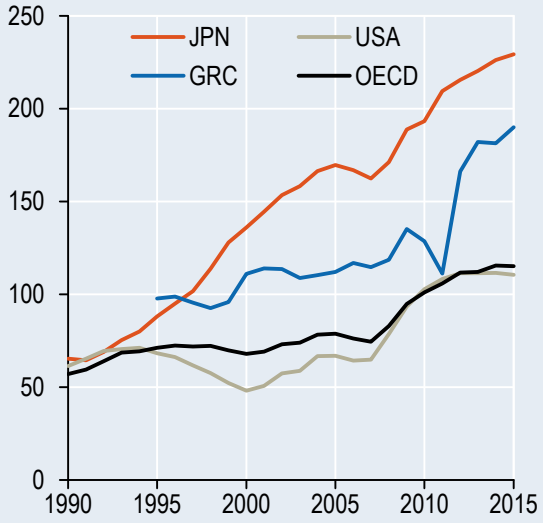
Million persons



Source: OECD Demography and Population Database.

2015, which aims at economic revitalisation and fiscal consolidation. The first arrow, bold monetary policy, is necessary to end deflation as it lowers nominal GDP, thereby boosting the public debt ratio. While underlying consumer price index inflation has risen from negative territory towards 1%, quantitative and qualitative monetary easing needs to continue until the 2% inflation target is durably achieved.

FIGURE 1.4. **JAPAN'S FISCAL SITUATION HAS DETERIORATED RAPIDLY OVER THE PAST 25 YEARS**
Public debt in percent of GDP



Note: OECD estimates for 2014-15.
Source: OECD Economic Outlook Database.

The second arrow, flexible fiscal policy, should focus on slowing spending growth and raising government revenues (Chapter 2). On the spending side, the key is to contain social spending, which is driven by population ageing. This requires reforms to pensions and health and long-term care. Fiscal consolidation should be growth-friendly, for example by closing unnecessary infrastructure to reduce maintenance costs, thereby allowing public investment to focus on projects that will sustain Japan's growth, and by enhancing links between government research institutes and small and medium sized enterprises (SMEs). On the revenue side, the focus should be on taxes that limit the negative impact on growth, such as the consumption tax and environmental taxes.

The third arrow, a growth strategy, is the most important component to put Japan on a path to fiscal sustainability. It includes the ambitious goal of boosting real output growth to an annual rate of 2%, far above Japan's current rate of around 0.5%.

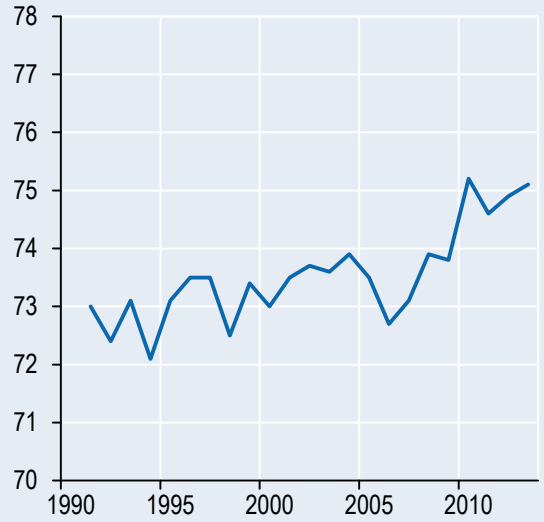
More decisive policy action is need to tackle Japan's challenges

While the initial impact of Abenomics in 2013 was impressive, Japan's economic performance in 2014-15 was uneven, with disappointing output growth as fiscal consolidation advanced. In September 2015, Prime Minister Abe announced a new set of three arrows that aim to achieve a positive cycle of growth and distribution The first arrow, a robust economy that gives rise to hope, stipulates the goal of increasing Japan's nominal GDP, currently JPY 500 trillion, to JPY 600 trillion by around 2020, which implies nominal output growth of 3%. The second arrow targets a rise in the birth rate from around 1.4 to 1.8 children per woman through child-rearing support measures, such as expanding early childhood education and care to reduce waiting lists for childcare. The third of the three new arrows aims to create a society in which no workers would have to quit their jobs to care for their elderly parents, through the creation of a social security system that leads to a sense of well-being, including more long-term care facilities. These three goals are very welcome, but achieving them will require decisive policy action.

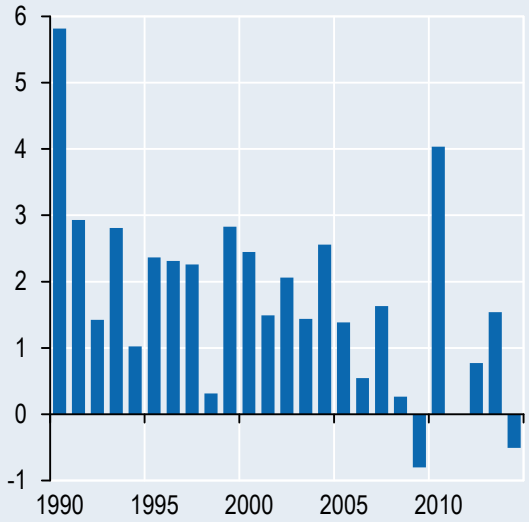
Revitalising Japan's growth will require broad-based policy measures to boost labour productivity. Despite recent improvements, the level of GDP per hour worked is only about 75% of the average of the top half of OECD countries (Figure 1.5). At the same time, the rapid ageing of the Japanese population implies that output per worker must rise faster than would be required in a healthier demographic context. Japan is one of the few OECD countries that are already experiencing a negative effect of demography, and it is sizable at just over 0.5 percentage points of GDP growth. The strengths noted above – a highly-skilled labour force, high R&D intensity and technological leadership – could enable Japan to close the productivity gap with leading OECD countries. However, for these strengths to fully achieve their potential, complementary structural reforms are needed.

FIGURE 1.5. **JAPAN'S LEVEL OF LABOUR PRODUCTIVITY IS WELL BELOW LEADING OECD COUNTRIES**

Panel A. GDP per hour worked as percentage share of the productivity level of the top half of OECD countries



Panel B. Labour productivity growth in Japan, total economy, annual percentage change



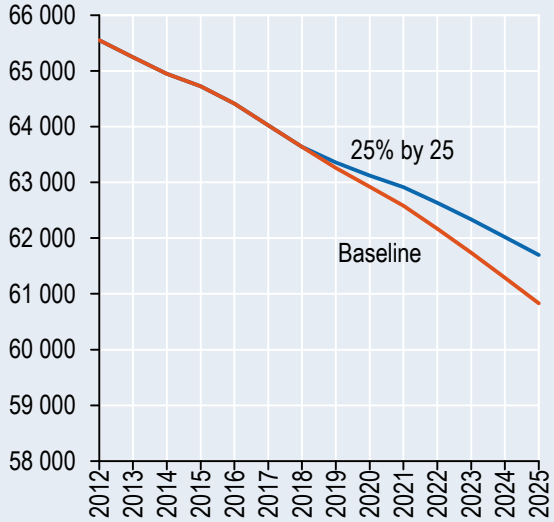
Source: OECD (2016a), Going for Growth, OECD Publishing, Paris, http://dx.doi.org/10.1787/growth-2016-en.

In this regard, measures to strengthen Japan's trade integration are crucial (Chapter 3). While Japan is a major exporter and deeply integrated into global value chains, recent initiatives, such as the Trans-Pacific Partnership, are important to further integrate the country into global markets. Raising dynamism in Japan's corporate sector is also essential (Chapter 4). Business start-up and closure rates are low, resulting in a high average age of Japan's SMEs. Moreover, despite record high profits, business investment and wage growth have been sluggish. Improved corporate governance is essential to prompt firms to focus more on profitability, by increasing their willingness to take risks. Japan also has to enhance its innovation performance (Chapter 5). While the country has a strong R&D base concentrated in the business sector, other types of investment in knowledge-based capital, such as organisational capabilities and firm-specific training, are weak. Moreover, Japan does not fully leverage its large investment in innovation due to weaknesses in its R&D system, such as a lack of international openness and weak links between academia, business R&D and government research institutes. Productivity depends on equipping people with the skills demanded by the labour market (Chapter 6). Traditionally, Japanese students learned general skills at school and received on-the-job training in the workplace. Increasingly, however, Japanese firms are shifting their hiring to specific skills, suggesting a need for vocational education and training.

Revitalising growth also requires better using Japan's pool of talent. The female employment rate is currently 18 percentage points below that of men, reflecting the fact that women shoulder the bulk of care for children and elderly family members (Chapter 7). Among women who do work, a sizable share are overqualified for their positions. Career interruptions for family responsibilities increase women's chances of landing in low-paid, non-regular jobs. Policies that make it easier for both men and women to combine work and family life, in part by changing Japan's culture of long working hours, can help address this problem. Japan's G20 commitment to reduce the

FIGURE 1.6. **REDUCING THE GENDER PARTICIPATION GAP CAN SIGNIFICANTLY SLOW THE DECLINE IN JAPAN'S LABOUR FORCE**

Projected number of persons aged 15-64 in the labour force, in thousands, 2012-25



Note: In the baseline scenario, participation rates are projected by gender and for each 5-year age group by assuming that labour-force entry and exit rates remain constant at their average value over the period 2003-12. In the 25% by 25 scenario, the gender gap for each 5-year age group in 2025 is assumed to be 25% lower than its value in 2012.

Source: OECD, ILO, IMF and World Bank (2014), "Achieving stronger growth by promoting a more gender-balanced economy", www.oecd.org/g20/topics/employment-and-social-policy/ILO-IMF-OECD-WBG-Achieving-stronger-growth-by-promoting-a-more-gender-balanced-economy-G20.pdf.

gender workforce participation gap by 25% by 2025 is a step in the right direction (Figure 1.6). In addition, employment opportunities for older people should be improved, in particular by improving their ICT skills and fostering lifelong learning. In addition to boosting growth, such measures will promote a more inclusive society.

Well-being also depends on policies to foster green growth and environmental quality (Chapter 8). While Japan has made progress on greening growth and improving environmental performance, further efforts should focus on reducing greenhouse gas emissions in the wake of the 2011 nuclear accident. It led to the shutdown of Japan's 43 nuclear reactors and greater reliance on imported thermal energy. As a result, the carbon intensity of Japan's energy mix increased sharply. Other priorities are to improve the management of water and address resource efficiency. Here, the shrinking of the Japanese population may actually present some important opportunities by reducing congestion and other environmental pressures. Reaping these opportunities will require effective regional policies that allow a "smart shrinking" of cities (Chapter 9). Finally, it is important to make cities more resilient to potential shocks, such as earthquakes, tsunamis and typhoons (Chapter 10). Preparation for such shocks and the ability to bounce back quickly are important to the well-being of the Japanese population.

2 Achieving fiscal sustainability and social inclusion in an ageing society

Japan's public debt ratio is rising further into uncharted territory. Putting the debt ratio on a downward trend requires effective use of all three arrows of Abenomics. For fiscal policy, measures to control the growth of public social spending, particularly on pensions and health and long-term care, are the priority. Revenue increases are also essential and should be accomplished through taxes that limit any distortionary effect. To maintain confidence in its fiscal sustainability, Japan should implement a more concrete and detailed consolidation plan to achieve its fiscal targets.

Japan faces high public debt and a large budget deficit

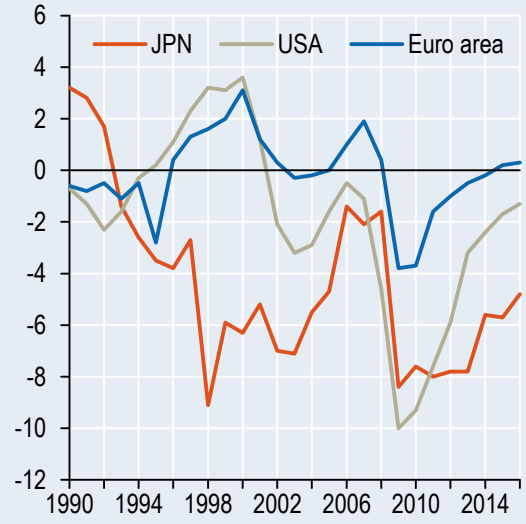
Twenty-three consecutive years of budget deficits have boosted gross government debt from around 70% of GDP in 1992 to nearly 230% in 2015, the highest public debt ratio ever recorded in the OECD. Persistent deficits have been driven by rising public social spending, combined with chronically weak nominal output growth that has limited the growth of government revenues. While the impact of such high debt on government interest payments has been mitigated thus far by exceptionally low interest rates in the context of the Bank of Japan's quantitative easing, putting the public debt ratio on a downward trend is a top priority.

Japan reduced its primary deficit (on a general government basis) from nearly 8% of GDP in 2012 to an estimated 5% in 2015, thanks to the consumption tax hike and spending control (Figure 2.1). However, government projections indicate that fiscal consolidation is not on track to achieve the target of a primary surplus by FY 2020, even assuming 2% real GDP growth, well above Japan's potential growth rate of about 0.5% (OECD, 2015a). A further increase in the public debt ratio would increase the risk of a rise in interest rates, with a negative impact on fiscal sustainability and output growth in Japan and a large negative spillover to the world economy. The challenge is to improve the fiscal situation while interest rates remain exceptionally low. To maintain confidence in Japan's fiscal sustainability, it is essential to implement a more detailed and concrete strategy to reduce spending and raise revenues, in order to achieve the objective of a downward trend on public debt ratio in the 2020s.

Fiscal policy must address both government spending and revenue

To control expenditures, Japan must limit the growth of public social spending, which has doubled, from 12% to 24% of GDP, over the past 25 years, driven by rapid population ageing. Demographic trends continue to put upward pressure on pension and health and long-term care outlays. Raising the pension eligibility age above 65, as has been done in a number of OECD countries, would ensure sustainability of the public pension system and improve inter-generational equity. In addition, macroeconomic indexation, which adjusts pension benefits based on changes in the number of contributors and gains in life expectancy, should be fully applied. The efficiency of health and long-term care could be

FIGURE 2.1. **JAPAN'S BUDGET DEFICIT REMAINS LARGE**
Percent of GDP



Note: OECD estimates for 2014-16.

Source: OECD Economic Outlook Database.

enhanced by accelerating the use of generic drugs, shortening hospital stays and raising co-payments by the elderly from their current low level, especially for less intensive long-term care.

Additional revenue should be provided by taxes that limit the negative effect on Japan's growth potential. This suggests relying on the consumption tax (which, at 8%, is well below the 22% average VAT rate in Europe) and the broadening of personal and corporate income tax bases. If Japan were to achieve its fiscal targets by relying solely on the consumption tax, the rate would have to converge toward the 22% average in Europe (OECD, 2015a). Environmental taxes should also play a role (see Chapter 8). Revenue increases should be large enough to achieve Japan's fiscal targets and to finance the new arrows of Abenomics: child-rearing support measures to raise the birth rate from around 1.4 to 1.8 children per woman and expansion of long-term care so that no workers would have to quit their jobs to care for their elderly parents.

Fiscal consolidation should include steps to promote social cohesion by better targeting public social spending and cutting the tax burden on low-income households. Broadening personal income tax, in particular by reducing deductions that favour high-income households, would make the tax system more progressive. This would help reduce Japan's high rate of relative poverty. Introducing an earned income tax credit for low-income workers would also reduce poverty while enhancing work incentives.

Key recommendations

- Maintain confidence in the fiscal situation by implementing a more detailed and concrete strategy to reduce spending and to raise revenues so as to achieve the government's target of a primary surplus by FY2020, and by steadily reducing the public debt-to-GDP ratio over the medium-to-long term.
- Legislate a pathway of gradual increases in the consumption tax rate, accompanied by a broadening of direct tax bases and an increase in environment-related taxes, to raise government revenue in a manner that supports steady economic growth.
- Reform public social programmes to limit spending increases, particularly in the areas of health and long-term care as well as pensions, including by raising the eligibility age.
- Make the tax and social security system more progressive by reducing the burden on low-income households, and introduce an earned income tax credit.

3 Strengthening Japan's trade integration

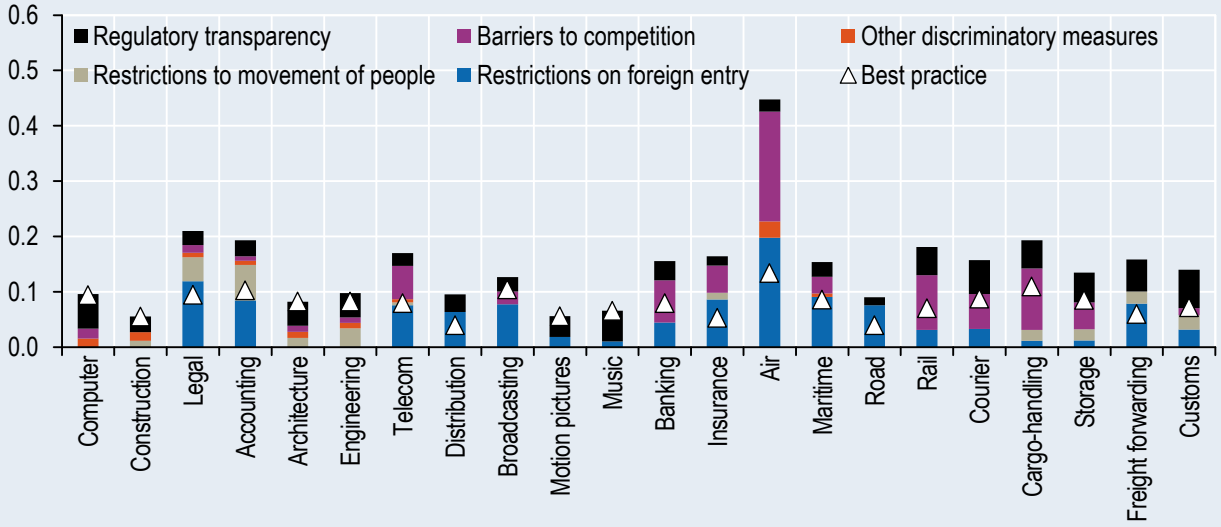
International trade has played a significant role in Japan's economic development and is a crucial element of the third arrow of Abenomics. Today, Japan is a major exporter of high value-added goods and is deeply integrated into global value chains. While recent initiatives like the Trans-Pacific Partnership can further advance Japan's integration into global markets, its economy would also greatly benefit from removing domestic regulatory barriers that discourage inward foreign direct investment, pursuing other regional trade agreements, notably the Japan-EU Economic Partnership Agreement, and seeking new opportunities to open markets for trade and investment both bilaterally and multilaterally.

Further integration into the world economy would boost Japan's productivity

A dominant feature of world trade in recent years has been the proliferation of regional and global value chains (GVC). This fragmentation of production across borders highlights the need for countries like Japan to support open, predictable and transparent trade and investment regimes, as tariffs and other restrictive measures impose unnecessary costs not only on foreign suppliers, but on domestic producers as well. The OECD-WTO Trade in Value-Added Database shows that Japan is already deeply integrated into GVCs, with higher domestic value-added content of gross exports than the OECD average (85%, compared to 70%).

Notwithstanding its success in GVCs to date, Japan has much to gain by continuing to participate in ambitious regional trade agreements (RTAs) with major trading partners. By the end of 2015, Japan had signed 15 RTAs covering 22% of its imports and exports, and this figure jumped to 37% in February 2016 when it signed the Trans-Pacific Partnership. Further advancing ongoing trade initiatives, including the Japan-EU Economic Partnership Agreement, the Regional Comprehensive Economic Partnership and the China-Japan-Korea Free Trade Agreement, will help Japan remain on track to meet its Growth Strategy target of raising its free trade agreement coverage ratio to 70% of total trade by 2018. Japan, the sixth country that ratified the WTO Trade Facilitation Agreement, stands to reduce trade costs for its businesses by up to 12% by fully implementing the measures in the agreement, based on OECD Trade Facilitation Indicators estimates (B20, 2015). Such reforms should also help boost Japan's stock of inward foreign direct investment (FDI), which is the lowest in the OECD (4% of GDP in 2014, compared to the OECD average of 32%). The Japan Revitalisation Strategy set a target of doubling the stock of inward FDI from JPY 19.2 trillion in 2012 to JPY 35 trillion in 2020.

FIGURE 3.1. **JAPAN HAS ROOM TO FURTHER DISMANTLE BARRIERS TO TRADE IN SERVICES**
Services Trade Restrictiveness Index, from 0 (least restrictive) to 1 (most restrictive)



Source: OECD Services Trade Restrictiveness Index Database.

Efficient domestic services markets are needed to ensure the benefit from global value chains

In addition to pursuing market openness at multilateral, plurilateral or regional levels, Japan can also benefit from further reforms to its domestic services markets as a means to stimulate trade and more deeply integrate into value chains. Efficient services are important not just for the service sector itself; they are also essential for the competitiveness of manufacturing. In 2011, services accounted for over 52% of Japan's gross exports when measured in value-added terms. Clearly, Japan's exports of goods rely intensively on access to competitive services inputs.

Japan has made some progress in recent years in reducing a number of economy-wide (non-sector-specific) regulations that restrict trade in services. In 2015, for example, the requirement that at least one board member of a domestic corporation be a resident of Japan was lifted, and, since 2012, temporary services suppliers (i.e. natural persons hired by companies in the home country who enter the host country for the purpose of services provision) may now stay in Japan for up to five years. In the OECD Services Trade Restrictiveness Index, a unique, evidence-based diagnostic tool that can help countries benchmark their service market regulations relative to global best practice, Japan's score is better than the OECD average in all sectors except air transport and freight-forwarding services. Moreover, it records the best score in four sectors. However, there is room to further reduce sector-specific restrictions in areas that play an important role in GVCs (Figure 3.1), such as professional and transport-related services (OECD, 2015b). For example, there is scope to lift commercial presence requirements for practicing international law.

The Trade in Services Agreement (TISA) represents an important opportunity for Japan to further open its services markets, as participating members of TISA are seeking to make ambitious commitments in areas that go beyond WTO rules established in the 1995 General Agreement on Trade in Services. At the multilateral level, the challenge for WTO members like Japan is to find a flexible pathway to resolve outstanding issues of most concern to businesses, such as services, but to also include agriculture and non-agriculture market access and address new issues, such as investment and the digital economy.

Trade integration is also an opportunity to advance agricultural policy reforms

Trade integration initiatives also provide Japan with a further opportunity to transform its agriculture sector into a growing industry that can export high-quality and high-value food and better attract young farmers. Japan is facing a critical point when it needs to pursue bold agricultural policy reforms that will encourage new investment to ensure long-term and sustainable agricultural productivity growth. While transitional measures may be needed to help producers adapt to stronger competitive pressures, policy makers should eliminate policies that constrain farmers' own production decisions and discourage much needed farmland consolidation.

The reform of Japan's agricultural innovation system towards a demand-driven system should better respond to the need of business-oriented producers in Japan. These efforts should include extension services, agricultural education and reform of public funding for R&D. Today, agricultural innovation is increasingly taking place in a network-based setting, in which a more inclusive, interactive and participatory approach fosters greater innovation in response to emerging and pressing challenges facing food and agriculture systems.

Key recommendations

- Continue to pursue market openness as a key element of domestic structural reform.
- Advance services trade liberalisation in sectors, particularly those that play an important role in global value chains.
- Continue to negotiate ambitious and comprehensive plurilateral, regional and sectoral trade agreements like TISA, and seek flexible pathways at the WTO to address new and existing policy issues multilaterally.
- Progressively open the agriculture sector to international markets for trade and investment.
- Transform the agricultural innovation system into a demand-driven system to better respond to the needs of business-oriented producers.

4 Boosting dynamism in the corporate sector

With potential growth of around 0.5%, achieving the 2% real growth target in the Japan Revitalisation Strategy requires greater dynamism in the corporate sector. While Japanese firms are enjoying record profits, the gains in fixed investment and wages have been disappointing, as firms have preferred to accumulate large cash holdings. To increase corporate dynamism, it is essential to improve Japan's corporate governance framework, which has lagged behind global standards. The recent introduction of a Stewardship Code and a Corporate Governance Code are important steps in this regard, but effective implementation is critical. Making the regulatory framework more conducive to competition is a second key ingredient for a more dynamic corporate sector.

A more dynamic corporate sector would boost growth

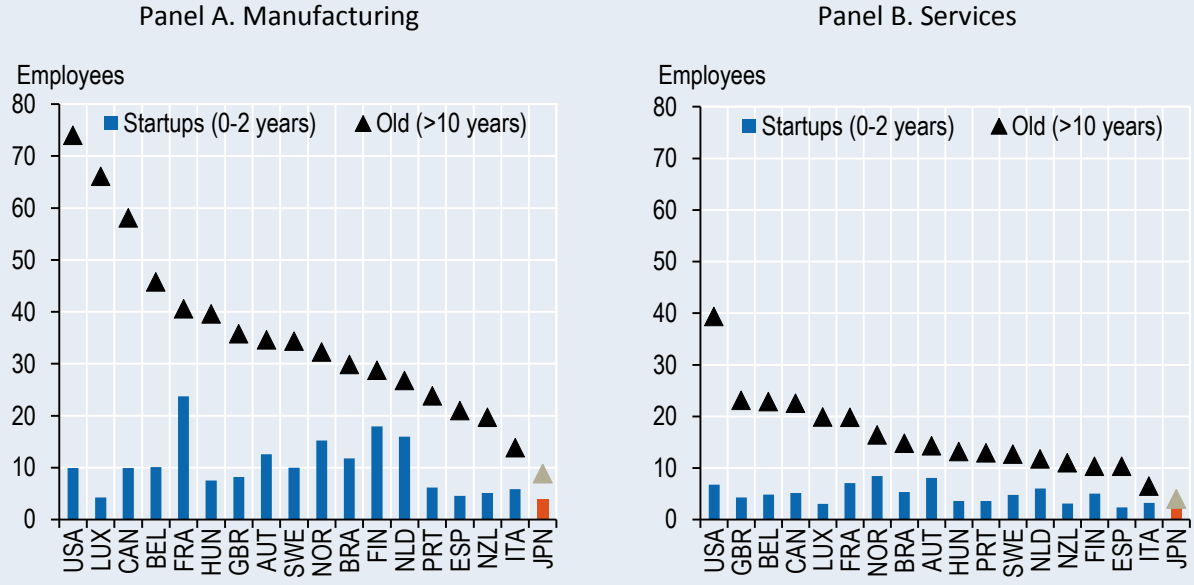
The business start-up and closure rates in Japan have averaged around 5%, about a third those of other advanced economies (OECD, 2015a). As a result, Japan's SME sector is dominated by old firms – three-quarters are more than ten years old, compared to a share of less than half in most OECD countries. A second problem is that small companies in Japan tend to remain small, in part because high public support discourages small firms from growing because they would lose the benefits associated with SME status. In Japan's services sector, for example, the number of employees rises from around two in start-ups less than two years old to only five in firms that are more than ten years old (Figure 4.1). In the services sector of the United States, in contrast, firms have an average of 40 employees after 10 years.

Another sign of lacking business dynamism is the large cash holdings of Japanese listed non-financial firms. In 2014, they amounted to 22% of market capitalisation, much higher than in the euro area and the United States (Figure 4.2). These large cash holdings, which may in part reflect pessimism about Japan's growth prospects, have restrained aggregate demand and output growth. The return on assets in Japan is on a long-term downward trend, while the return on equity is far below that in the United States and Europe.

Improved corporate governance will help unleash the potential of the corporate sector

Corporate governance is a key determinant of an economy's dynamism and competitiveness, as it affects access to equity, the allocation of equity and the monitoring of firms' performance. Japan has recently made important progress in this area. In 2014, it

FIGURE 4.1. **INCREASING THE SIZE OF FIRMS IS DIFFICULT IN JAPAN**



Source: Criscuolo, C., P. N. Gal and C. Menon (2014), The Dynamics of Employment Growth: New Evidence from 18 Countries, OECD Science, Technology and Industry Policy Papers, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jz417hj6hg6-en.

introduced a Stewardship Code that encourages institutional investors to fulfil their responsibilities through a dialogue with the firms in which they invest. By the end of 2015, 201 institutions had adopted the Code, which is voluntary.

In 2015, a Corporate Governance Code, based on the G20/OECD Principles of Corporate Governance, was introduced. The Code aims to secure the rights and equal treatment of shareholders, ensuring appropriate information disclosure and transparency and setting out the responsibilities of corporate boards, which should include independent directors. By the end of 2015, approximately 1 900 companies listed on the first and second sections of the Tokyo Stock Exchange had disclosed whether they comply with each principle of the Code or explained why they did not do so. Nearly 12% of firms declared that they were complying with all 73 principles, and 66.4% stated that they were complying with more than 90% of them.

While the high rate of compliance is encouraging, it is important to closely monitor whether the Stewardship and Corporate Governance Codes are implemented in a way that achieves their objectives. For example, it is not enough to simply appoint two independent directors to comply with the Code. Rather, firms should establish a support structure so that independent directors can contribute to frank and constructive discussions at board meetings. In addition, the Code's principle requiring firms to explain the rationale for cross-shareholding, which weakens minority shareholders' influence, should be strictly enforced.

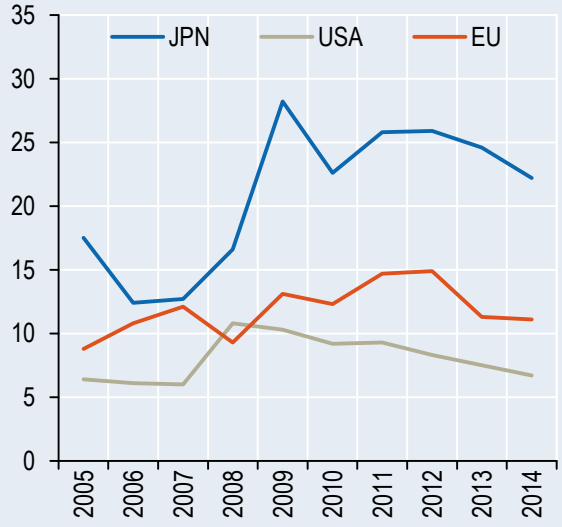
Regulatory reform will promote competition and productivity growth

The stringency of product market regulation (PMR) has been found to have a significant relationship with aggregate productivity across the OECD (Bouis et al., 2012). Making product market regulation more conducive to firm entry and growth can boost productivity through greater private investment, enhanced diffusion of knowledge from both domestic and overseas sources, and improved managerial performance. Japan's PMR index was slightly below the OECD average in 2013, but well above that of the leading OECD countries (Figure 4.3). Regulatory reform would thus boost Japan's labour productivity, which was 34% below the average of the top half of OECD countries in 2014. The Regulatory Reform Committee and the Council on Economic and Fiscal Policy, which have been reactivated by the current government, should play a key role in driving regulatory reform.

In 2014, Japan relaxed regulations on construction and employment in the National Strategic Special Zones, to create a business-friendly environment. Such reforms should be extended nationwide. Japan has also made important reforms in the electricity sector, where retailing will be fully liberalised from 2016. Additional measures in this sector, including the unbundling of generation and transmission, are a priority.

FIGURE 4.2. **THE CASH RESERVES OF JAPAN'S CORPORATE SECTOR ARE HIGH IN INTERNATIONAL COMPARISON**

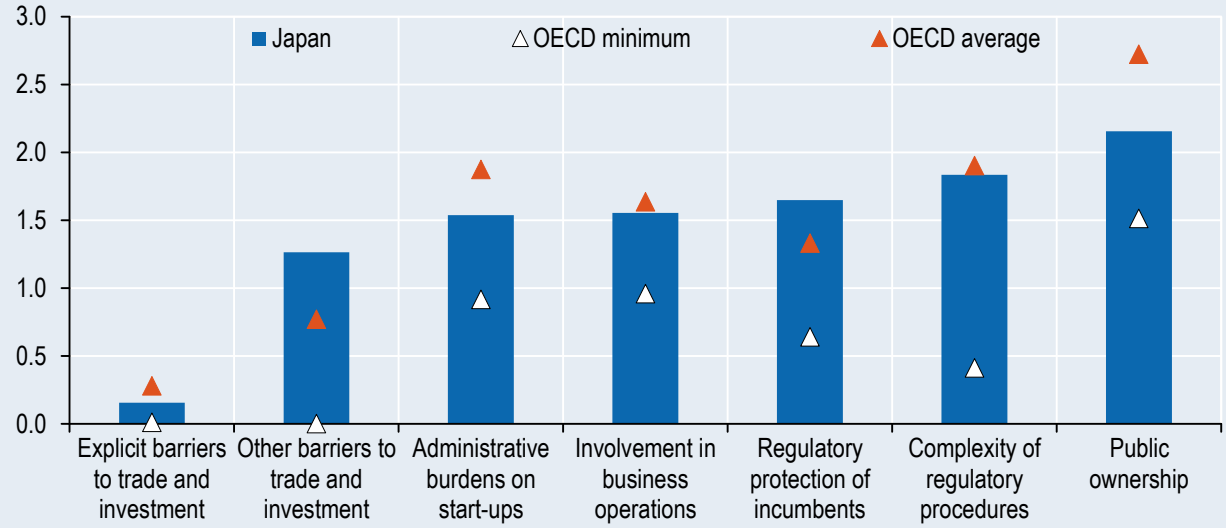
Cash and marketable securities of listed companies as a percentage of market capitalisation in each country or region



Note: The corporate sector is defined as all companies listed in the stock market of each country/region: Topix 500 Index for Japan; S&P 500 for the United States; Bloomberg Europe 500 for the euro area.

Source: Bloomberg.

FIGURE 4.3. **THERE IS ROOM TO FURTHER ALIGN JAPAN'S PRODUCT MARKET REGULATION WITH OECD BEST PRACTICE**
OECD Product Market Regulation Indicators, from 0 (least restrictive) to 6 (most restrictive)



Source: OECD Product Market Regulation Database.

Further regulatory reform should also focus on service sectors, where productivity has lagged. The priority is to reduce social regulation in areas such as health care and social services, while promoting social cohesion. For example, firms are not allowed to manage hospitals or clinics, thus protecting small non-profit organisations and preventing scale economies and widening of consumer choice. In addition, the prices of health care services are fixed, preventing hospitals from providing higher-quality and more expensive services that some consumers would prefer. The emphasis on egalitarianism prevents competition that would lead to provision of higher-quality services. Promoting competition in services also requires ensuring a level playing field by phasing out the Anti-Monopoly Act's special treatment of SMEs, which play a major role in services. In addition, restrictions on service trade should be liberalised (see Chapter 3).

Reducing barriers to firm entry and exit is also crucial, as new firms play a key role in innovation and productivity growth. The Japan Revitalisation Strategy set a target of raising the start-up and closure rates to 10%, double the current levels. The low rate of firm creation is partly related to long and complicated procedures for starting a business. Japan's low firm exit rate is due in part to generous government support that delays restructuring by keeping non-viable enterprises (so-called "zombie" firms) afloat. Such support distorts resource allocation and limits access to finance by viable companies, thereby reducing Japan's potential growth.

Key recommendations

- Support and monitor the implementation of the Stewardship Code and the Corporate Governance Code to promote their effectiveness.
- Re-examine the economic rationale for cross-shareholdings between companies and consider policies that encourage reductions in cross-shareholding.
- Reduce product market regulation, especially in social services, such as health care and education.
- Streamline procedures for starting a business.
- Extend the reforms in the National Strategic Special Zones nationwide.

5 Strengthening Japan's innovation performance

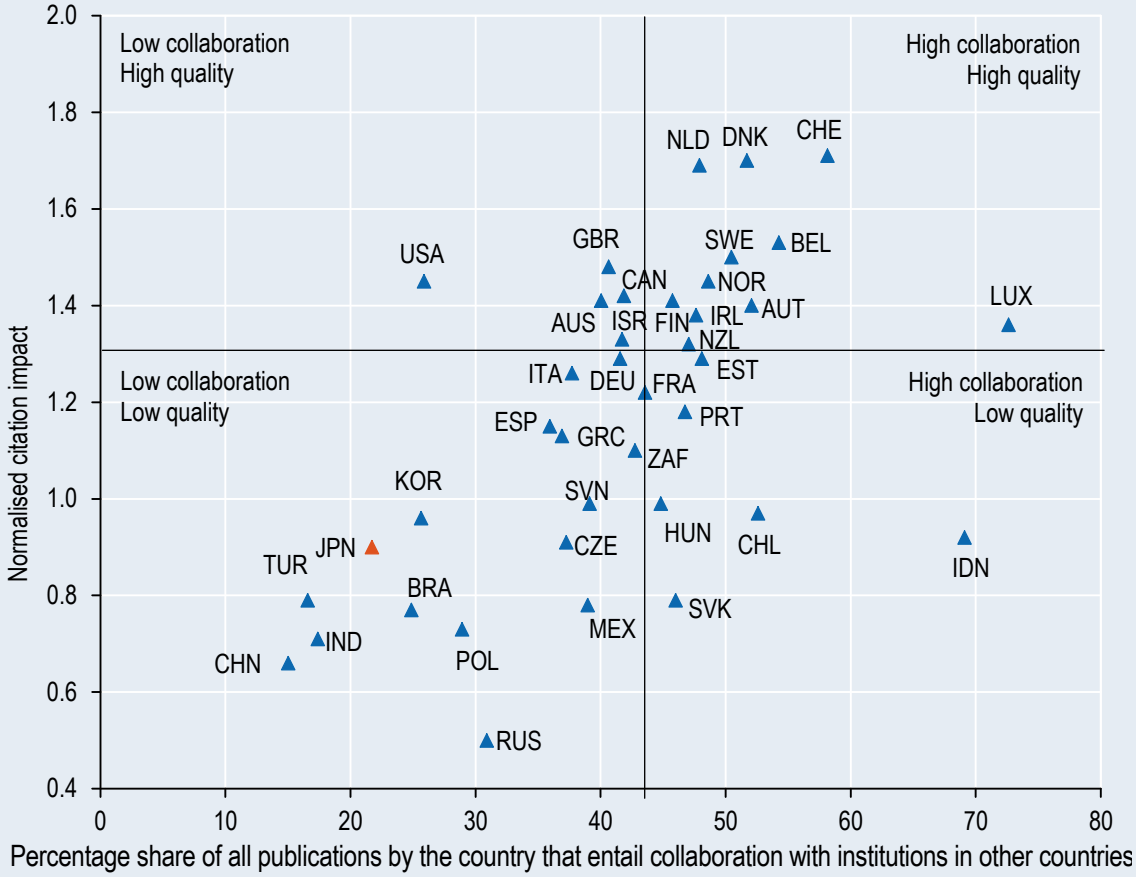
Japan has a strong R&D base, with R&D investment mostly led by the business sector, and it is among the top contributing countries in the development of disruptive technologies. However, in contrast to the strong business investment in R&D, business investment in other knowledge-based assets, such as organisational capabilities and firm-specific training, is relatively weak. Moreover, the quality of research, as measured by the number of top-cited publications, is below that of most OECD countries. A lack of international openness of research activities likely contributes to this. Japan has a low share of internationally mobile researchers and relatively low levels of international collaboration in research and innovation, making Japan among the least connected innovative economies in the OECD. Another key challenge is related to ICT. While Japan has a vibrant ICT manufacturing sector and has deployed high-speed broadband infrastructures widely, the uptake and effective use of ICT infrastructure at work, at school and in public administrations need to be stimulated to promote ICT-driven growth.

The R&D base is strong, but greater investment in broader knowledge capital is needed

Over the past 20 years, Japanese R&D spending increased gradually, from 2.7 % of GDP in 1995 to 3.6% in 2014, third only to Israel and Korea. R&D investment is led by the business sector, with applied research and experimental development accounting for nearly 83% of total R&D expenditure. About one-quarter of the world's top 100 R&D corporate investors were based in Japan in 2012. Japan is among the top contributors to the development of disruptive technologies, especially in applications related to health and the Internet of Things.

Compared to strong business investment in R&D, investment in broader knowledge-based assets, including human capital, organisational capabilities and firm-specific training, remains relatively weak. In 2012, spending on higher education represented about 1.6% of GDP (slightly lower than the OECD average), and graduates in science and engineering accounted for 23% of all tertiary graduates (about the OECD average). Only 14% of these graduates were women. University-industry collaboration is low, limiting the impact of scientific research on innovation, and could benefit from increased efforts to upgrade human resources in science and engineering.

FIGURE 5.1. **LOW INTERNATIONAL RESEARCH COLLABORATION IS ASSOCIATED WITH LOWER RESEARCH QUALITY**
Citation impact of scientific production and extent of international collaboration, 2003-12 average



Note: The two black lines depict the OECD averages (1.2 for the normalised citation impact and 41.9% for international collaboration).

Source: OECD (2015c), OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society, OECD Publishing, http://dx.doi.org/10.1787/sti_scoreboard-2015-en.

The quality of Japanese research would benefit from greater openness

Despite a large volume of scientific research, the quality of research in Japan, as measured by top-cited publications, is below that of most OECD countries. Contributing factors include Japan's low share of internationally mobile researchers, low levels of international collaboration, as measured by co-authorships (Figure 5.1), and a low level of international collaboration among innovative companies. These indicators show Japan as being among the least connected innovative economies in the OECD. To improve the circulation of knowledge, it is important to encourage the entry of foreign students and researchers, ensure that the tax regime does not penalise mobile skilled workers and remove obstacles to foreign direct investment. Greater participation in international research infrastructures is another way to encourage scientific co-operation among countries. The quality of research would also benefit from improvements in the quality of universities and greater participation of women in science and innovation (see Chapter 6). Removing barriers to women's participation would also help strengthen equality.

Barriers to SME innovation and upscaling need to be addressed

Japanese SMEs should play a more prominent role in innovation. SMEs form the backbone of the service sector and are a crucial part of the manufacturing and export supply chain, but they have long suffered from low productivity, weak profitability and high leverage. In 2010-12, the share of SMEs that had introduced some form of innovation (47%) was significantly lower than in some other OECD countries in which SMEs have a similar weight in value-

added, including Switzerland (76%) and Germany (67%). Furthermore, growth dynamics in the SME sector are limited. Indeed, only a fifth of Japan's largest companies (by market capitalisation) have been created since the 1960s, compared with three-quarters in the United States, and start-up firms hardly scale after their entry in the market.

At the same time, SMEs receive substantial government support, particularly through a large credit guarantee system, which supports about 40% of Japanese SMEs. While the system addresses specific needs of SMEs at various stages in their life cycle and guaranteed loans exhibit a low default rate (2%), it has contributed to a delayed restructuring in the business sector, created some disincentives to grow and hindered the development of market-based financing (see Chapter 4). In order to boost SME innovation and growth, the policy focus should shift from providing a safety net to cope with recent crises to promoting the restructuring of non-viable firms through efficient markets

It is also essential to broaden the range of financing instruments available to entrepreneurs, particularly risk capital. Japanese venture capital investments, which were at a height in 2007, plummeted in the aftermath of the financial crisis and have experienced an uneven recovery since then (OECD, 2016c). The creation of a Credit Risk Database, which processes information on more than 2 million SME debtors and provides scoring services to public and private financial institutions, represents a good step toward developing appropriate infrastructure for market-based SME financing.

Entrepreneurship needs to be fostered and made more inclusive

Innovation goes hand in hand with entrepreneurship. As in most OECD countries, regulatory barriers to entrepreneurship have been declining over time in Japan, which stands below the OECD median. Still, the complexity of regulatory procedures remains the main obstacle to entrepreneurial activity, largely related to the licence and permit system (OECD, 2013a). In the 2013 Entrepreneurship at a Glance survey, Japan came out as the OECD country with the lowest share of students agreeing that school education had provided enabling skills and know-how necessary to run a business. At the same time, less than a third of the working-age population view entrepreneurship as a good career choice, the lowest proportion among OECD countries.

Recognising that entrepreneurship is a crucial 21st century skill, the Ministry of Education, Culture, Sports, Science and Technology has launched a number of programmes such as Promotion of Global Entrepreneurs. However, these programmes are aimed at university and graduate students. The experience of other countries in this area suggests that intervention needs to start much earlier. Three lessons stand out: 1) entrepreneurial skills need to be fostered in primary and secondary schools; 2) entrepreneurial education requires inter-ministerial co-operation, as well as the support of public institutions and the private sector; and 3) entrepreneurship education should be broad in nature and go beyond career education. Creativity, entrepreneurial know-how, responsibility, risk-taking, problem-solving, and teamwork are all crucial elements.

Encouraging entrepreneurship among women would also help mobilise resources towards innovative ventures, as well as create jobs and address inequalities. The rate of entrepreneurship among women is especially low in Japan, partly due to cultural attitudes and partly due to higher perceived barriers. Among OECD countries, Japan has the lowest share of self-employed women with paid employees (0.9% compared to the OECD average of 2.2%) (OECD, 2015d). Only 14% of Japanese women believe self-employment is feasible, compared to 40% in the United States and 34% in Korea. The measures undertaken by Japan to increase the participation of women in the labour market and promote gender diversity at Japanese companies may produce a knock-on effect on female entrepreneurship. Nevertheless, a comprehensive action plan for fostering entrepreneurship among women could help accelerate the rise of female entrepreneurship. Measures should especially focus on encouraging women and girls in leadership and decision-making roles, increasing their awareness of entrepreneurship opportunities and enhancing access to finance for female entrepreneurs.

Entrepreneurship by older people should also be encouraged, including boosting labour market participation of the elderly. A package

of measures could be introduced for this purpose. Key components of such a package would be creating positive awareness of the benefits of entrepreneurship for seniors (among older people themselves and in society in general), supporting business networks for older entrepreneurs and offering training to fill knowledge gaps on entrepreneurship skills for those who have spent their working life as employees. It is also important to ensure that older entrepreneurs have access to financing schemes, and that tax and social security systems do not contain disincentives to entrepreneurship for older people.

All actors need to be engaged in digitalisation

Japan has a vibrant ICT manufacturing sector and has widely deployed high-speed broadband infrastructures. It has the second-highest penetration of mobile broadband in the OECD, over 120%. Japan invests heavily in R&D in information industries, making it a top player in a number of ICT-related technologies, together with the United States and Korea. However, Japan faces some important challenges for future ICT-driven growth, notably that of stimulating the uptake and effective use of the infrastructure by businesses and individuals at work, at school and in public administrations. In 2013, 83% of individuals aged 6 years and older used the Internet, but only 74% used it daily, and only 57% used it to make online purchases. Other indicators show low availability and usage of the Internet at school. In 2012, over 50% of Japan's 15-year-old students did not have an Internet connection or did not make use of it in school, compared to the OECD average of 29%.

The Japanese government has recently undertaken various measures to overcome this challenge. For example, to stimulate ICT usage at school, in 2014 Japan agreed to a four-year plan toward digitalising of education. It targets investments of JPY 671.2 billion over four years to equip schools with more computers (for both teachers and students), electronic blackboards, wireless LANs and education software, and to employ ICT assistants at schools. In Japan a surprisingly large proportion of the adult population, especially older people, have relatively poor ICT skills (see Chapter 6). Benefiting from ICT will also require a well-functioning and efficient intellectual property rights system that addresses technological developments (including digitalisation), as well as policies to increase data-driven innovation by promoting open access and data privacy.

Key recommendations

- Improve the framework conditions for investment in knowledge-based assets beyond R&D by investing in human resources for science and engineering, improving the quality of universities and strengthening university-science linkages.
- Enhance SMEs' access to a broad range of financing instruments and support the development of market-based financing.
- Favour the restructuring of non-viable firms and reduce disincentives to grow that may stem from public support to small businesses.
- Start entrepreneurship education earlier in people's lives.
- Encourage greater international mobility of researchers, strengthen participation in international research infrastructure initiatives and reduce barriers to foreign direct investment.
- Strengthen the engagement of women in science, innovation and entrepreneurship by encouraging leadership and decision-making roles, fostering role models and women's' networks, enhancing their awareness and information, and improving access to finance for female scientists, researchers and entrepreneurs.
- Raise awareness of the benefits of entrepreneurship among the elderly, support networks for older entrepreneurs, offer training to fill knowledge and skills gaps, and ensure that tax and social security systems do not contain disincentives to entrepreneurship by older people.
- Stimulate the uptake and effective use of digital technologies by governments, businesses, and individuals by improving consumer trust and equipping workers in public and private sectors with better ICT skills.

6 Improving the use of skills in the labour market

While Japan is a top performer in developing skills, they are often not being put to best use. Moreover, employer demand is slowly shifting from general to specific skills. While this suggests a key role for vocational education and training, enrolment rates in such tracks currently lag behind those in other OECD countries. At the same time, it will be crucial to increase the share of female graduates in sciences, technology, engineering and mathematics to make better use of their talents and to reduce the number of people with high-level skills who are currently inactive. The lack of ICT skills in older cohorts of the population needs to be addressed.

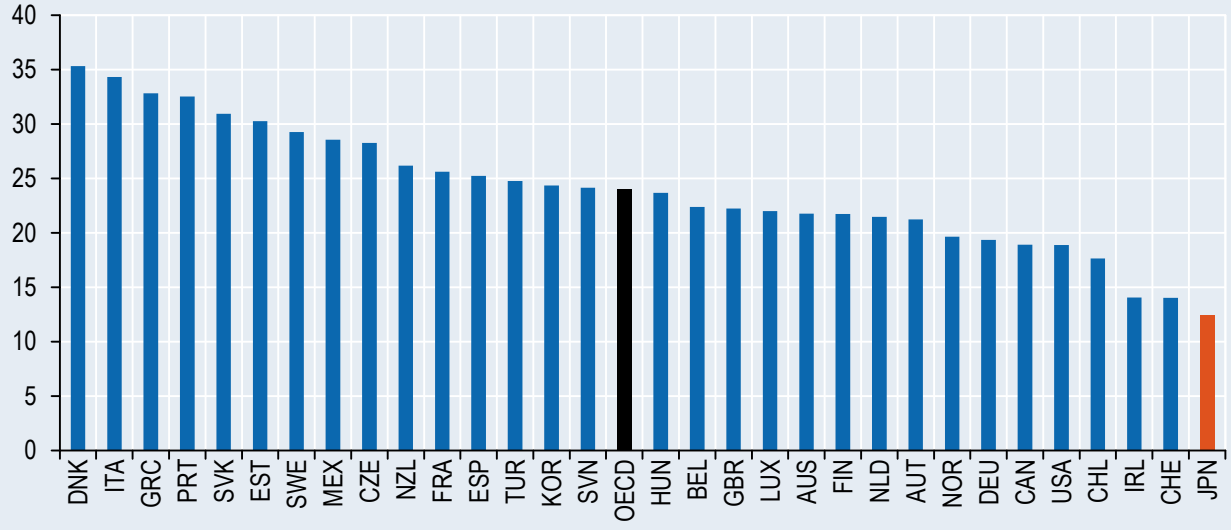
Japan is a top performer in development of skills, but deploying them effectively remains a challenge

Japan consistently ranks among the best performers in the OECD's Programme for International Student Assessment (PISA), which tests the skills and knowledge of 15-year-old students, and it ranked first in the OECD Survey of Adult Skills. Japan also has an above-average attainment rate in upper secondary education, and its share of adults with a tertiary education is the second highest in the OECD. But while the OECD assessment of adult skills reveals that Japan has the highest level of use of writing skills among countries that participated in the survey, the use of numeracy and reading skills in the work place is close to the average. However, a sizeable share of Japanese workers (close to 10%) are in jobs for which their literacy competencies are higher than required. Japanese employers therefore do not appear to be making the best use of their workforce's competences. At the same time, 22%, of highly proficient adults are inactive, probably due to the low rates of labour-force participation among women at all levels of proficiency.

Japan's education system has traditionally focused on equipping students with general skills, while more firm-specific skills are acquired after leaving school through in-company training systems. Accordingly, young people have no exposure to vocational training until upper secondary level, where they have the option of following either academic (general), vocational or specialised programmes. Even then, however, the content of the curriculum does not vary widely between programmes (Saito, 2011).

FIGURE 6.1. **JAPANESE WOMEN ARE UNDER-REPRESENTED AMONG TERTIARY GRADUATES IN ENGINEERING, MANUFACTURING AND CONSTRUCTION**

Percentage share of women in all graduates in engineering, manufacturing and construction, 2013



Source: Data from OECD (2015e), Education at a Glance 2015: OECD Indicators, OECD Publishing, Paris, http://dx.doi.org/10.1787/888933284841.

Japanese women are an underutilised skill resource

While women have tertiary attainment rates close to that of men (in 2014, 31% of 25-34year-old women had a tertiary degree compared to 42% of men in the same age group), there are notable differences in what they choose to study. At tertiary level, women currently predominate in the fields of health, welfare and education (in education, they represent 72% of tertiary graduates). In Japan, women represent 77% of all tertiary graduates in the field of services, one of the highest proportions among OECD and partner countries (compared to the OECD average of 51%). At the same time, women represent just 26% of all graduates in science (compared to the OECD average of 39%), and in engineering, manufacturing and construction, subjects in great demand in the labour market both in Japan and other OECD countries, women represent only 12% of tertiary graduates (compared to the OECD average of 24%; Figure 6.1).

The latest PISA results reveal not just a worrying gap between boys and girls in mathematics performance (18 score points, when the OECD average is just 11 points) but also a gulf in students' attitudes towards mathematics. Even when girls perform as well as boys in mathematics, they report less perseverance and less motivation to learn mathematics, less belief in their own mathematical skills and higher levels of anxiety about mathematics. These findings have serious implications not only for higher education, where young women are already under-represented in the science, technology, engineering and mathematics (STEM) fields of study, but also later on, when these young women enter the labour market. Supporting girls to develop positive attitudes and motivation for mathematics could go a long way towards narrowing the current gender gaps in labour market participation.

Evidence from PISA suggests that gender gaps in career expectations form at an early age, across OECD countries. Among 15-year old students in Japan, 15% of boys, but just 3% of girls, thought it was likely they would follow a career in engineering or computing. In contrast, 16% of girls, but just 6% of boys, expected to pursue a career in health services. If so few women aim for the STEM professions, there will continue to be few role models in these fields for young girls to emulate, and the cycle will perpetuate itself. By training teachers to recognise and address their own unconscious biases, countries can ensure that all students make the most of their potential. Research shows that simple training programmes can lead to positive change (OECD, 2015f). Japan could also strengthen its career advice services

by forming consortia across schools and ensuring that all students, especially girls, are exposed to opportunities available in the labour market.

Another problem is that female workers who attain a high level of qualification often work in jobs for which they are overqualified. The OECD Survey of Adult Skills (OECD, 2013b) indicates that women in Japan face the highest probability of being overqualified (32%, compared to the average of 20% in the countries that participated in the survey). Such overqualification has a significant impact on wages, even after adjusting for proficiency, and this in turn implies adverse effects on productivity. However, an even greater untapped supply of high-quality human capital stems from the fact that Japanese women have very low rates of labour-force participation to begin with (more on this issue in Chapter 7).

There is also a growing need for vocational education and training

The traditional pattern of firms hiring youth for long-term employment and training them within the firm is slowly shifting in favour of employing graduates with specific skills. In line with this, there has been increasing pressure on the education system to ensure that graduates are equipped with the skills needed in the labour market. Vocational education and training (VET) needs to play an important role. However, in Japan, the share of students enrolled in upper secondary VET is 23% (half the OECD average), and fewer than 15% of post-secondary and tertiary students participate in any type of workplace training.

It is important, therefore, to expand vocational education and training and to integrate high-quality work-based learning into all types of programmes (vocational as well as academic). This should be achieved by involving employers in the design of curricula, creating qualifications that are recognised by firms, and enabling multiple pathways for developing youth skills. At the same time, the government should continue its efforts to enhance the quality of VET at different levels of the education system.

Addressing the lack of ICT skills in older people

Being able to read, understand and respond appropriately to numerical and mathematical information are essential skills for full social and economic participation. Increasingly, accessing, analysing and communicating information takes place through the use of digital devices and applications, such as personal computers, smart phones and the Internet. The capacity to use these devices intelligently to manage information is thus of growing importance in many aspects of modern life. However, in Japan a surprisingly large proportion of the adult population, especially older people, have relatively poor skills in this area. The OECD's Survey of Adults Skills found that 10.2% of adults in Japan had no computer experience and 10.7% failed the ICT core assessment, meaning they lacked the most elementary computer skills (such as the ability to use a mouse). Both shares are relatively high (OECD, 2013b). The share of adults in these categories rises to 21.2% for the 45-54 age group and to 40.9% for 55-64 year-olds, the fourth highest among participating countries. In addition, the use of ICT at work is lower in Japan than in other countries, for all age groups. This suggests that the government may need to boost efforts to prepare the population, particularly older workers, to face the implications of the digitalisation of the economy on skills needs.

Key recommendations

- Integrate high-quality work-based learning into all programmes (vocational and academic) by involving employers in the design of curricula, creating qualifications that are recognised by firms, and developing multiple pathways for developing youth skills.
- Implement measures that improve the work-life balance in science and engineering careers to support women in these fields.
- Put in place programmes that build self-confidence among girls, especially in mathematics, provide female scientist role models for girls, raise awareness of unconscious gender biases and help girls to look ahead so that more choose STEM pathways.
- Expand ICT training programmes for older adults with limited familiarity with ICT.

7 Towards a better balance between family life and work

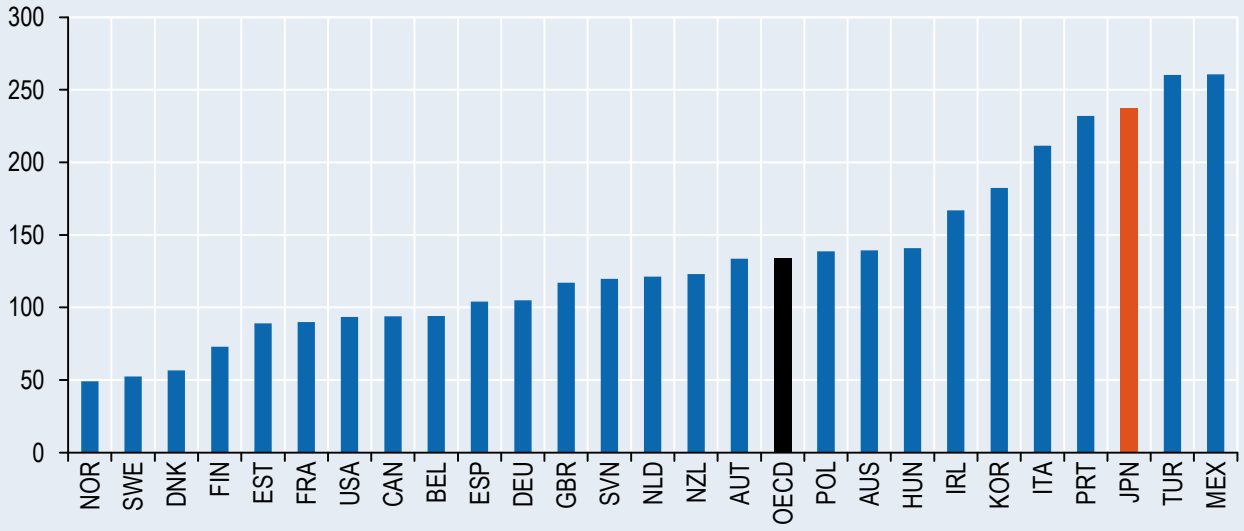
Female employment rates remain well below those of men, representing a vast untapped resource. This is largely because women end up providing the bulk of care to children and the elderly. Moreover, as a result of interrupted careers and a higher likelihood of being in non-regular jobs, women also tend to earn lower wages than men. At the same time birth rates are persistently low. To tackle this twin challenge, it is crucial to implement effective policies on work-life balance that support care for children and the elderly, making it easier for men and women to combine labour force participation and family life. In addition, labour market actors have a large role to play in ensuring that workplaces become more conducive to better reconciliation of work and family life.

Gender gaps are large in international comparison

In Japan, 1 April 2016 marked the 30th anniversary of the Equal Employment Opportunity Act. However, there are still large gender gaps in labour market outcomes in Japan. The employment rate of Japanese women is approximately 18% percentage points below that of men; the gender pay gap is around 27%, the third largest in the OECD; only about 15% of employees with management responsibility are female; and men are more likely to be entrepreneurs than women (see Chapter 5). These gender differences are in part linked to Japan's dual labour market, where 73% of non-regular employees are women, and 70% of regular employees are men. In 2010, the wage gap between men and women in the 25-29 age group (13.7%) was only slightly higher than the OECD average (9.5%). Many employers still expect women to withdraw from the labour force around marriage or childbirth. When women return to the labour force, they are frequently relegated to non-regular jobs, which are relatively poorly paid and often provide no access to parental leave. Consequently, the 2010 gender wage gap jumps to 37% for the 40-44 age group (compared to the OECD average of 24.3%). In regular jobs, remuneration is seniority-based, and there is considerable employment security in return for high commitment to the firm, often in the form of very long working hours.

FIGURE 7.1. **WHILE WOMEN DO MORE UNPAID WORK THAN MEN ACROSS THE OECD, THE GAP IS BIGGER IN JAPAN THAN IN MOST OTHER COUNTRIES**

Female minus male unpaid working time in minutes per day, 15-64 year olds



Note: Data for Australia are for 15+ year-olds, for Hungary 15-74 year-olds, and for Sweden 25-64 year-olds. Reference years vary across countries. For more detail, see the OECD Gender Data Portal: http://www.oecd.org/gender/data/.

Source: OECD Gender Data Portal, http://www.oecd.org/gender/data/.

Because they expect women to leave the labour force when they marry or have a child, employers are less likely to invest in women's career development. Even though young women are more likely than men to have completed tertiary education (see Chapter 6), they are less likely than young men to enter regular employment upon graduation and unlikely to enter fast-track career streams where workers are groomed for higher management. The Act on the Promotion of Women's Participation and Advancement in the Workplace came into force in April 2016, mandating large companies (more than 300 employees) to publicly release data regarding women's participation and advancement and to formulate action plans to improve gender equality. By closing gender gaps in labour force participation, Japan can boost its labour force and promote economic growth. If female employment rates were to converge with male employment rates over the next 20 years, it would increase GDP by almost 20% over two decades (OECD, 2012). Japan's G20 commitment to reduce the gender gap by 25% by 2025 is therefore a step in the right direction (OECD, ILO, IMF and World Bank, 2014).

Fertility rates are persistently low

Total fertility rates (TFRs) in Japan have been below 2 children per woman since 1975 and have oscillated around 1.4 children per woman since 1995 (OECD, 2016b). Working women find it hard to combine work and family life, and their employed partners contribute little time to unpaid work, including child and elder care (Figure 7.1). Unlike in most OECD countries, childbirth out of wedlock is uncommon in Japan, but both marriage and parenthood are increasingly postponed. At 30.1 years of age, the mean age of first childbirth in Japan is among the highest in the OECD. Housing and education costs, and high costs of child-rearing in general, are among the top reasons why parents have fewer children than they consider as ideal (NIPSSR, 2011). Other OECD countries such as France and Sweden, manage to combine high female employment rates among women aged 25-54 with TFRs close to 2 children per woman. These countries provide a continuum of supports for families with young children (including parental leave and childcare), and they do not have a widespread culture of long working hours.

As part of Prime Minister Abe's second set of three arrows launched, in September 2015, the Japanese government has been improving support to promote better work-life balance for parents, with a view to raising fertility to the desired birth rate of 1.8. For example, the government increased the rate of replacement pay during parental leave from 50% to 67% for the first six months and extended entitlement to non-regular workers, subject to eligibility criteria such as employment for at least one year on a continuous basis with the current employer. The government also expanded the availability of childcare facilities and increased financial support for children in low-income households. In particular, child benefits to sole-parent families have been increased to help reduce the child poverty rate which, at 16%, is above the OECD average of 13%.

High-quality care for children and the elderly will make it easier for women to return to work

Despite improvements, public spending on early childhood education and care (ECEC) is estimated to be around 0.5% of GDP in 2015, less than half of what Denmark, France or Sweden invest in this area. There are still capacity constraints, high fees and long waiting lists for day-care facilities, especially in the Tokyo metropolitan area. Without high-quality, affordable ECEC, women are not be able to return to work with confidence that their children are being well cared for. And for the children's sake, it is important that they spend those hours in a high-quality learning environment.

The educational impact of early childhood education shows up clearly by age 15 in the OECD's Programme for International Student Assessment (PISA). Across OECD countries, students who attended pre-school for one year or more scored more than 30 points higher in reading than those who did not – the equivalent of nearly an extra year of schooling. Disadvantaged children have the greatest potential to benefit from ECEC, because their abilities are often less developed, and there is therefore more scope to catch up. These gaps are not only evident in reading, mathematics and general knowledge. Children from lower income households also often have less developed emotional and social skills. OECD work on the Social Outcomes of Learning shows that the important and positive influence of early childhood education on social skills and personality traits can also lead to broader benefits to society.

With population ageing, the demand for elder care is increasing. The government aims to promote a better balance between work and long-term care commitments, so that workers do not have to leave the workplace to care for a family member. In 2016, it increased the rates of replacement pay for those taking leave to care for the elderly from 40% to 67%. But further investment in long-term care facilities may be unavoidable in order to address care needs as well as to stimulate greater workforce participation among female workers.

Incentives to work should be similar for both parents

Policy design of parental leave could be made more flexible by facilitating taking leave on a part-time basis for a few hours per day by both fathers and mothers (Adema et al., 2015). Moreover, the Japanese tax/benefit system should be reformed to provide both parents with equal incentives to work and pursue a career (OECD, 2013c). Spouses with earnings below around JPY 1 million (about 30% of average earnings) are still exempt from income tax. If their earnings are below JPY 1.3 million, they are covered by pension and health care insurance without making contributions.

Above all, Japanese labour market institutions need changing

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 who return to work and part-time workers can flow into regular employment more easily. Importantly, the culture of long working hours needs to be curtailed so that workplaces become attractive to both fathers and mothers. Senior managers should lead by example, by taking their own holidays or, for example, by making middle managers accountable for male and female employees actually using their parental leave entitlements, on a full-time or part-time basis.

Key recommendations

- Reform the tax/benefit system so that both parents have broadly similar financial incentives to work.
- Further promote take-up of parental leave by facilitating leave-taking on a part-time basis among fathers and mothers.
- Refocus funding and policies to expand affordable access to quality early childhood education and care, prioritising disadvantaged groups and working mothers.
- Work with social partners to reduce the influence of seniority in remuneration systems and increase the role of performance indicators, while breaking down the duality of the labour force.
- Work together with social partners to make workplace conditions more conducive to work and family life (e.g. by encouraging workers to take leave entitlements and curtailing the culture of long working hours).

8 Fostering green growth

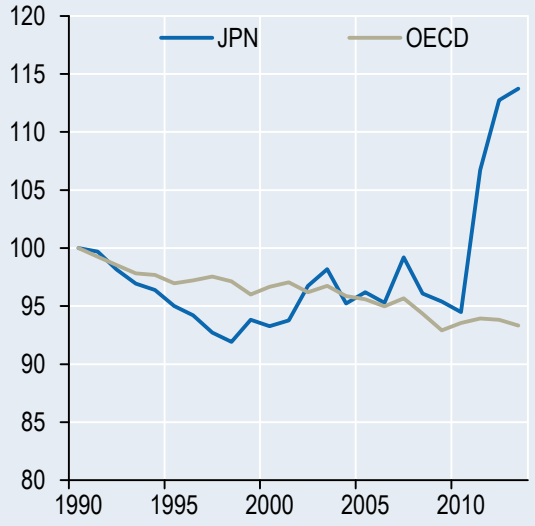
Until 2011, Japan had achieved lower greenhouse gas emissions per unit of GDP than the OECD average and high energy efficiency. The 2011 nuclear accident that led to the shutdown of Japan's 43 nuclear reactors has resulted in greater reliance on imported thermal energy and a dramatic increase in the carbon intensity of Japan's energy mix, presenting a significant additional challenge to Japan's climate change mitigation efforts. While Japan has made progress on greening growth and improving environmental performance, further efforts should focus on reducing greenhouse gas emissions, improving the management of water and addressing resource efficiency.

Addressing the climate change challenge is key

Since 2011, the carbon intensity of Japan's energy mix has increased significantly (Figure 8.1). In absolute terms, Japan is one of the largest greenhouse gas (GHG) emitters among OECD countries (1.408 MtCO2e in 2013), with the main sources being energy (89%) and industrial processes (6%). Japan's Intended Nationally Determined Contributions aim to reduce the country's GHG emissions by 26% from 2013 levels by 2030. Japan's efforts through the Joint Crediting Mechanism can be used to help achieve this target.

FIGURE 8.1. **THE CARBON INTENSITY OF JAPAN'S ENERGY MIX JUMPED AFTER THE FUKUSHIMA ACCIDENT**

Energy sector carbon intensity, 1990 = 100



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 (2015), "Indicators for CO_2 emissions (Edition 2015)", IEA CO_2 Emissions from Fuel Combustion Statistics, http://dx.doi.org/10.1787/6330205c-en.

The share of fossil fuels in Japan's total primary energy supply increased from 85% in 1990 to 95% in 2014. Renewables increased by only 1.4 percentage points between 1990 and 2014 to reach 4.9% – the fourth lowest in the OECD and about half of the OECD average of 9.2% (IEA, 2016; OECD, 2016d). Moreover, renewable energy has increased only modestly under the Feed-in-Tariff system introduced in 2012, and the fixed long-term contracts at high prices under the system risk creating a serious financial burden on consumers and the government. Expanding the role of renewables and enhancing their cost efficiency will be essential.

Environmentally-related taxes will be important to reduce GHG emissions and achieve other important environmental objectives, such as pollution reduction. Revenues from such taxes have been stable in Japan and averaged 1.69% of GDP between 1994 and 2012 (just below the OECD average of 1.76% of GDP). Environmentally-related taxes, such as the Tax for Climate Change Mitigation introduced in 2012, have the beneficial side effect of increasing government revenues for promoting measures for energy efficiency and conservation (see Chapter 2). To ensure effectiveness, this type of initiative should be aligned across other ongoing efforts, such as the reform of the electricity system, and could be increased.

Clarity regarding the future of nuclear power is much needed

As Japan considers how it will meet its stated targets to reduce carbon emissions, the role of nuclear power in the country's energy future will be central to its review. Before the tragic earthquake and tsunami of March 2011, Japan operated 54 reactors and relied on nuclear power for about one-third of its electricity. It had planned to expand its use of nuclear power to about 40% of electricity generation by 2017 as part of its energy strategy. After the tragic event, all of Japan's nuclear power reactors were shut down for years as regulations were revised and sweeping changes made to improve safety at all

of Japan's plants. Today, only two reactors are in commercial operation, and the country has been required to import large quantities of very expensive fossil fuels to replace the energy that had been produced by nuclear power.

With the reform of Japanese nuclear regulation, nuclear safety requirements in Japan are now the most stringent in the world. Japan's regulator is proceeding carefully to review reactors for restart: 23 of Japan's nuclear power reactors are in various stages of the review process, and several plants are expected to return to operation in 2016. The government's plan to eventually produce at least about 20% of Japanese electricity from nuclear appears realistic, though it is not yet clear whether this will be sufficient to meet the country's climate change goals. In any event, public acceptance of restarting nuclear plants is slow in coming. Also, considerable uncertainty is being created by decisions made by lower courts and by the onset of a planned major reform of Japan's electricity markets. This national legislation is critical to provide much-needed clarity.

Further improving resource efficiency will require an integrated policy approach

Japan has achieved a 40% improvement in resource productivity (measured in GDP per tonne of domestic material consumption) since 1990. 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 can only be achieved through a more integrated policy approach that takes account of the full life cycle of materials and that is based on the principles of sustainable materials management. In Japan, additional efforts could focus on strengthening policies on up-stream 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 rather than on achieving further energy recovery, which is already very high (75%) compared to other OECD countries.

Water policy innovation can help enhance system sustainability

Empirical evidence confirms that investment in water security to ensure access to safe water and improved sanitation contributes to sustainable growth (Sadoff et al., 2015). The water supply and sanitation system is well developed in Japan. The technical performance of the system is high, with high levels of compliance with quality standards and a low level of water leakage. A number of innovative approaches to water supply and sanitation have also been implemented, such as payment for ecosystem services (which can reduce the cost of water treatment) and on-site sanitation.

However, the system faces challenges that need to be addressed to secure access to quality services and make the best use of water resources and available public finance. In particular, the infrastructure of the water and sanitation sector is ageing, and current levels of investment are not sufficient to replace and upgrade water infrastructure. Addressing these challenges by promoting private sector participation would put the water supply and sanitation sector on a more sustainable footing. Although the legal system has been amended to allow private sector participation, progress has been slow and fragmented. A thorough review of the policy framework for investment could help overcome barriers to private sector investment in water services.

Key recommendations

- Continue supporting renewable energy while ensuring cost-effectiveness and improving the flexibility of the Feed-in-Tariff system (e.g. pricing mechanisms, frequency and methodologies for baseline cost estimation).
- Further consider the importance and additional potential for environmental taxes to reduce GHG emissions and pollution, while ensuring policy alignment across other ongoing efforts, such as the reform of the electricity system.
- Develop integrated production and consumption policy approaches, consistent with fostering economic growth, based on the full life cycle of materials.
- Review the policy framework to ensure it encourages private sector investment in water supply and sanitation services and contributes to the development of an innovative and competitive industry.

9 Rethinking regional policy to cope with a shrinking population

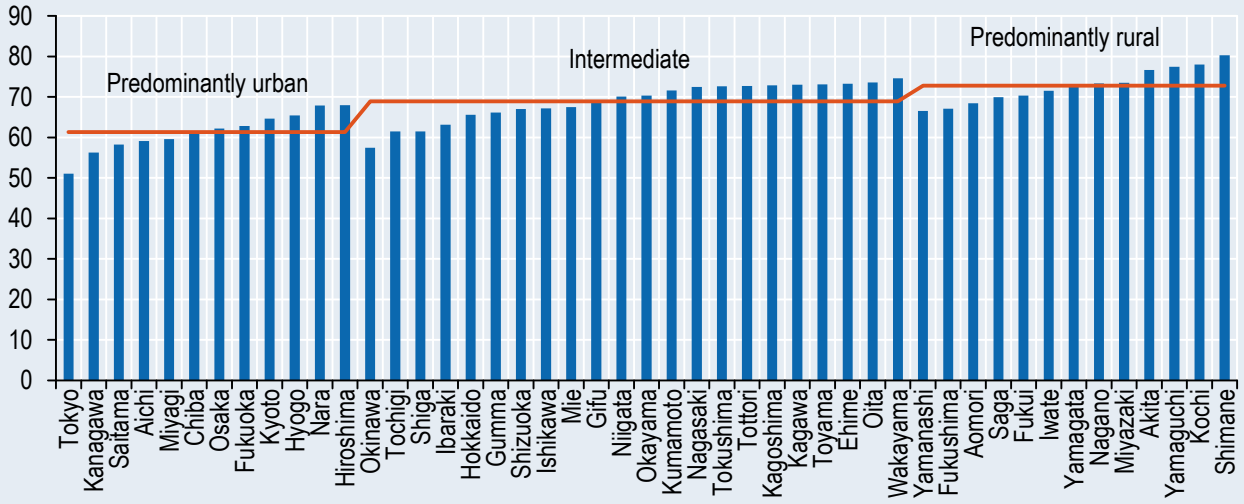
Regions and cities matter to Japan's demographic and productivity challenges over the medium and long term. Larger Japanese cities typically have lower fertility rates, and higher elderly dependency ratios tend to be in rural regions. Boosting Japan's national productivity will also largely depend on Japanese cities reaching their potential by maximising agglomeration benefits. Against this backdrop, the Japanese government recently adopted a new ten-year National Spatial Strategy. It is set within a view of spatial development to 2050, which underscores the determination to implant a comprehensive and long-term approach and, in particular, to heighten the sense of urgency surrounding these issues in regions and cities.

Population shrinking poses both challenges and opportunities

Japan's population is set to shrink substantially for decades to come. This development is not neutral in space. Some areas face more severe challenges for inclusiveness and growth than others (Figure 9.1). Predominantly rural regions are ageing faster than cities and are facing population decline, despite their relatively higher total fertility rate. The government projects that more than 60% of the inhabited grid squares will lose over half of their current population by 2050 and around 20% will become uninhabited. Only 2% of the inhabited grid squares are projected to experience population growth. This includes the Tokyo, Osaka and Nagoya metropolitan areas, which currently account for almost half of the country's population and GDP.

The economic consequences of demographic change are myriad and complex, but they are not all negative. Clearly, they include shrinking domestic markets and some loss of scale economies in certain activities, as well as fiscal pressures generated by increased age-related spending and rising dependency ratios (see Chapter 2). Rural areas and smaller cities will undoubtedly face rising costs for elder care and service provision over the medium and long term. The concentration of population and economic activities also raises questions about the viability of many smaller cities and rural communities. But population decline could also create opportunities for Japan, provided the right policies are in place. Such opportunities include more space-intensive activities, more flexibility in land use, less congestion, lower housing costs and, in some respects, less environmental pressure.

FIGURE 9.1. **AGEING AFFECTS RURAL PREFECTURES MORE THAN URBAN ONES**
Population aged 65+ as a percentage share of the population aged 15-64



Note: The red line depicts the averages for the three types of prefectures.

Source: OECD (2015), "Metropolitan areas", OECD Regional Statistics (database), http://dx.doi.org/10.1787/data-00531-en.

Spatial policy needs a long-term vision and a multi-faceted approach

Given the dramatic impact of demographic change on the settlement pattern, spatial policy in Japan is now of tremendous importance. The government is currently working to put in place a transversal approach, co-ordinating across policy sectors and levels of government with the help of such instruments as the National Spatial Strategy (NSS) and the revitalisation strategy.

The NSS extends to 2050, underscoring Japan's determination to take a comprehensive and long-term approach to spatial development. Though the great majority of Japan's subnational governments are already grappling with the consequences of demographic change, many are still reluctant to tackle it head-on. Plans and programmes are too often based on unrealistic forecasts, reflecting the hopes of individual communities that they will somehow continue to grow, even as the country's population drops. One of the emphases of the NSS is therefore concerned with ensuring that regions and cities prepare for the future in a realistic way. The NSS also reflects a desire to overcome institutional inertia and the tendency of bureaucratic structures to operate within narrowly defined sectoral policy agendas when addressing such cross-cutting challenges as demographic change

Effective regional planning allows smart shrinking

Many, perhaps most, of Japan's cities, towns and other settlements will shrink in size. The policies that will be needed for "smart shrinking" will require effective regional planning capable of sustaining prosperity even as communities grow smaller. The most visible by-product of urban depopulation is vacant land, and the management of vacant sites to turn them into assets is critical to a shrinking community's prosperity. In this sense, population decline could also create opportunities, if the right policies are in place.

Japan is at the forefront of some areas, such as designing public transport systems for areas with low population densities, with innovation particularly in fields like demand-responsive transport. In other areas, the experiences of declining European and US cities can provide valuable lessons. They have pioneered a wide range of options for managing vacant sites so as to avoid creation of visual and environmental disamenities and safety hazards. These options include urban green infrastructure programmes, unconventional arrangements for allowing entrepreneurs and others to use such sites temporarily and community redevelopment programmes. Effective spatial planning can help to ensure that such initiatives serve to maintain overall coherence and attractiveness of the urban space. Redundant infrastructure capacities may in some cases have alternative uses, pointing to benefits of rationalising such infrastructures and services at a regional scale, rather than municipality by municipality.

How compact the settlement pattern should be depends on local circumstances

The NSS aims to sustain a settlement pattern that facilitates the realisation of agglomeration economies while avoiding abandonment of large parts of the national territory. A more

compact settlement pattern in Japan can indeed help to improve efficiency of service delivery and reduce costs. But the principle has to be applied at different scales. For example, densification policies are not needed across all cities. With the right policies in place, a reduction in density would actually allow for provision of more urban green space, something that is lacking in many large Japanese cities, such as Nagoya, Fukuoka or Tokyo. The critical point is not that all places should be very densely populated, but that downsizing be managed in ways that preserve the coherence of places, facilitate efficient service delivery and avoid "perforated cities" – patchworks of settled and abandoned areas.

A Japan in which cities and towns are shrinking will need to be networked

Better connectivity among towns and cities, as well as within them, can help offset to some extent the loss of agglomeration potential that will occur as the population declines. But connectivity will depend only partly on improved connective infrastructure; at least as important will be better horizontal co-ordination across municipalities and prefectures. And it is not just a matter of collaboration among public bodies. Better networking of people and firms should facilitate innovation and the exchange of ideas, as well as goods and services.

The NSS emphasises the need to strengthen the connections between nearby cities that are losing population in an effort to sustain urban centres capable of offering a full range of urban amenities and services and to strengthen agglomeration dynamics. While the NSS vision is at the national scale, it promotes a bottom up process to account for the diversity across Japanese regions and municipalities. The government has been working to create co-operation contracts among local governments that facilitate policy co-ordination among them and, in many cases, the concentration of key urban facilities or functions in core cities that can then support service provision to the surrounding population. These efforts are welcome and should be reinforced. Earmarked grants may also have an important role in supporting this kind of cross-jurisdictional co-operation, provided they are used sparingly to advance key revitalisation initiatives and are implemented in a whole-of-government perspective.

Local initiatives, local assets and a focus on local prosperity are key to rural revitalisation

While rural areas face more severe depopulation challenges than other places, many rural communities are pursuing asset-based community development (ABCD) strategies in response to structural change. Rather than simply relying on external support, they are taking advantage of new opportunities to use technology and rural-urban linkages to innovate, attract investment, enter new markets and sustain local prosperity. The most successful strategies so far are those that focus on prosperity rather than population. Many communities do not expect to return to their previous sizes; they may even shrink further. But they are working to establish a basis for future prosperity that will allow them to attract and retain young people, ensuring that, whatever their size, they will have a healthier and more sustainable population structure.

Key recommendations

- Ensure that the hard infrastructure investments are accompanied by appropriate soft policies to promote entrepreneurship, innovation and venture capital investment.
- Make sure that cities outside the top three metropolitan areas can fully benefit from agglomeration benefits by improving horizontal co-operation and connectivity.
- Reinforce efforts to foster co-operation between cities outside the top three metropolitan areas through contracts among local governments that facilitate policy co-ordination and the concentration of key urban facilities or functions in core cities.
- Put in place effective regional planning mechanisms capable of sustaining prosperity even as communities grow smaller.
- Encourage rural areas to make greater use of ABCD strategies in response to structural change.

10 Giving cities the lead on making Japan more resilient

Recent natural disasters, such as the Great East Japan Earthquake in 2011, have highlighted Japan's vulnerability to such events. As a result, the Japanese government has stepped up its efforts to make the country and the people more resilient to future shocks. Given the high concentration of the Japanese population, cities have a key role to play in this process. Important progress has been made to enhance cities' ability to respond to emergencies and manage the recovery process. However, cities' efforts will have more impact if they collaborate more effectively with the national government and other neighbouring municipalities, especially when it comes to building infrastructure for disaster risk reduction. In addition, non-government actors need to become more heavily involved in managing critical risks.

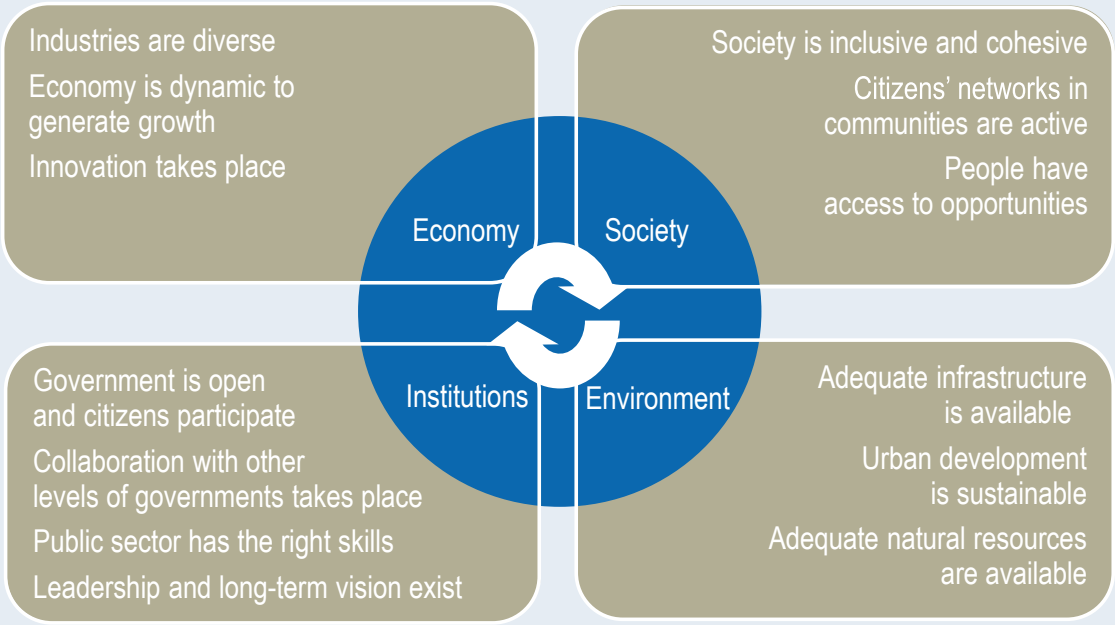
Having resilient cities is crucial for Japan, given the high frequency of disasters

During the past decades, Japan has experienced twice as many disasters annually as the average OECD country. Recent examples include earthquakes (the Great East Japan Earthquake in 2011), volcanic eruptions (the eruption of Mount Sakurajima in 2016), floods (the Kinu River flooding in 2015) and heavy snowfalls, which make resilience a central concern of spatial policies.

At the same time, Japan has the highest concentration of population in metropolitan areas in the OECD. Approximately 70% of the population live in metropolitan areas of at least 500 000, generating the same share of national GDP. The three largest metropolitan areas, Tokyo, Osaka and Nagoya, occupy 5.2% of the country's territory but are home to around 46% of its people and generate around half of Japan's GDP. As cities grow, so will the scale and potential impact of risks that confront these areas, pointing to the importance of resiliency. Large and complex urban systems can be particularly vulnerable to foreseen and unforeseen threats and any sort of shock.

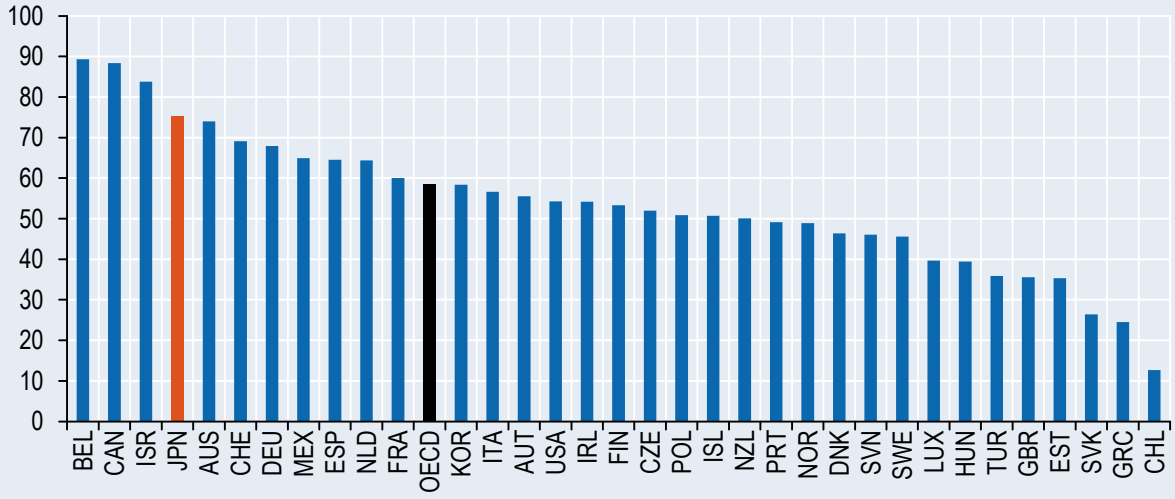
Resilient cities have the ability to absorb, recover from, adapt to and be prepared for past and future shocks. These abilities are driven by economic, social, environmental and governance capabilities (Figure 10.1). Japanese cities have gone through institutional reform to

FIGURE 10.1. **RESILIENT CITIES SHARE A NUMBER OF KEY CHARACTERISTICS**



Source: Adapted from OECD (2014), Overview Paper on Resilient Economies and Societies, Meeting of the OECD Council at Ministerial Level, Paris 6-7 May, 2014, Paris, http://www.oecd.org/mcm/C-MIN%282014%297-ENG.pdf.

FIGURE 10.2. **SUBNATIONAL GOVERNMENTS ACCOUNT FOR A HIGH SHARE OF JAPAN'S TOTAL PUBLIC INVESTMENT**
Subnational government investment in percent of total public investment, 2013



Note: 2012 data for Chile, Japan, Korea and New Zealand; 2011 data for Turkey.

Source: OECD (2015g), Subnational Governments in OECD Countries: Key Data, OECD Publishing, Paris. http://www.oecd.org/regional/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2015.pdf.

better manage the emergency response and recovery process and have developed social networks to integrate local stakeholders. Kobe City is the pioneer city in building resilience. After the Great Hanshin-Awaji Earthquake in 1995, Kobe's reconstruction efforts were driven by its institutional capacity to identify a clear long-term vision in the Kobe Redevelopment Plan and implement reconstruction projects. Recently, Kobe City's innovation capacity led the economic recovery in competitive industrial sectors, such as medical and pharmaceutical industries, to complete their reconstruction. Due to this high exposure, Japan has also been at the forefront of driving international progress on disaster risk management. The successful adoption of the Sendai Framework for Disaster Risk Reduction in March 2015 was spearheaded by Japan and informed by its experiences in building resilience against disasters. It underlines the importance of governance in achieving future disaster risk reduction. The Sendai Framework paved the way for subsequent agreements, notably the Paris COP21 Agreement (December 2015) as well as the 2030 Agenda for Sustainable Development (September 2015), which adopts urban disaster risk reduction as a specific objective.

Building resilient cities requires effective multi-level governance arrangements.

Shocks and chronic pressures are most strongly felt at the local level. However, city governments are not the only actors to meet the challenges, and their efforts will have more impact by working in collaboration with the national government and other neighbouring municipalities. Building resilient cities requires investment in infrastructure to improve disaster risk reduction. Given the ageing of Japan's protective infrastructure (such as levees), investment is needed to upgrade and replace existing infrastructure to preserve the initially-conceived level of protection. Collaboration is particularly important in light of the substantial role that subnational governments play in public investment. In 2013, subnational governments in Japan were tasked with 75% of all public investment, one of the highest shares in the OECD (Figure 10.2).

Participation of local actors can strengthen societies

To strengthen resilience, it has been recognised that not everything can be shouldered by governments alone. Instead, the OECD

Recommendation of the Council on the Governance of Critical Risks (May 2014), suggests adoption of a whole-of-society approach to risk management, which implicates public and private stakeholders in managing critical risks. In view of the transboundary nature of a number of critical risks, international collaboration is recommended to identify the drivers and impacts that can be triggered by a shock in one country and felt across the world in other countries' economies.

A good example is the Tohoku School project, a joint project of the Japanese Ministry of Education, Fukushima University and other local stakeholders, with support of the OECD. The Tohoku School project helped junior and high-school students in the Tohoku area overcome their losses in the wake of the March 2011 tsunami and Great East Japan earthquake, through projects that supported the region's recovery and helped students develop valuable skills for the future of their local communities. The lessons from this project have proven to have a much broader application of educational support – both in the rebuilding efforts that follow a natural disaster and in fostering the competencies, skills and resilience necessary to thrive in the knowledge-driven economy of the 21st century. As a follow-up to Tohoku School, similar projects have been undertaken in Wakayama, Hiroshima, Fukushima and Fukui Prefecture, as well as at the Kosen National Institute of Technology.

Key recommendations

- Make sure that cities work in collaboration with local stakeholders (e.g. universities, communities, businesses and critical infrastructure providers) and their neighbours to establish "resilience thinking" as part of their governance.
- Enhance the National Resilience Strategy by focusing on prioritised infrastructure development to be prepared for future risks, in view of ageing infrastructure, and combining it with soft measures, such as the use of information technologies.
- Continue the effort of risk communication and education in collaboration with government, citizens, students and the private sector, through the World Tsunami Awareness Day on 5 November.
- Enhance the understanding of possible direct and indirect damages caused by disasters so as to enable cities to plan for evidence-based future risk reduction strategies.
- Collaborate and share experiences with other countries in Asia which suffer from natural disasters, such as typhoons and earthquakes, using lessons learned from the Japanese experience of building better and more resilient cities.

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