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BASIC STATISTICS OF JAPAN, 2011

(Numbers in parentheses refer to the OECD average)[1]

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	127.8		Population density per km²	338.2	(34.3)
Under 15 (%)	13.1	(18.4)	Life expectancy (years, 2010)	83.0	(79.7)
Over 65 (%)	23.3	(14.9)	Men	79.6	(76.9)
Foreign (%, 2010)	1.3		Women	86.4	(82.5)
Latest 5-year average growth (%)	0.0	(0.5)	Latest general election	December 2012	

ECONOMY

Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	5 909.0		Primary	1.2	(2.5)
In current prices (billion YEN)	470 623.2		Industry, including construction	26.1	(27.9)
Latest 5-year average real growth (%)	-0.1	(0.8)	Services	72.7	(69.6)
Per capita, PPP (thousand USD)	34.5	(35.4)			

GENERAL GOVERNMENT

Per cent of GDP

Expenditure	42.0	(43.6)	Gross financial debt	210.6	(103.5)
Revenue	33.1	(36.9)	Net financial debt	127.4	(66.1)

EXTERNAL ACCOUNTS

Exchange rate (yen per USD)	79.6		Main exports (% of total merchandise exports)	
PPP exchange rate (USA = 1)	106.8		Machinery and transport equipment	58.3
In per cent of GDP			Manufactured goods	13.3
Exports of goods and services	15.1	(52.7)	Chemicals and related products, not	
Imports of goods and services	16.1	(49.7)	elsewhere specified	10.3
Current account balance	2.0	(-0.7)	Main imports (% of total merchandise imports)	
Net international investment position			Machinery and transport equipment	20.8
(2010)	52.5		Manufactured goods	8.6
			Mineral fuels, lubricants and related materials	32.1

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate (%) for 15-64 year olds	71.1	(64.8)	Unemployment rate (%)	4.6	(7.9)
Men	81.0	(73.0)	Youth (%)	8.2	(16.2)
Women	61.0	(56.8)	Long-term unemployed (%)	1.6	(2.6)
Average worked hours per year	1728	(1776)	Tertiary educational attainment		
Gross domestic expenditure on R&D			25-64 year-olds (%, 2010)	44.8	(30.7)
(2010 % of GDP)[2]	3.3	(2.4)			

ENVIRONMENT

Total primary energy supply per capita			CO_2 emissions from fuel combustion		
(toe)	3.6	(4.3)	per capita (tonnes, 2010)	9.0	(10.1)
Renewables including hydro (%)	3.4	(8.2)	Water abstractions per capita (dam^3, 2007)	0.7	
Fine particulate matter concentration			Municipal waste per capita (tonnes, 2008)[3]	0.4	(0.5)
(urban, PM10, $\mu g/m^3$, 2008)	27.1	(22.0)			

SOCIETY

Income inequality (Gini coefficient,			Education outcomes (PISA score, 2009)		
late 2000s)	0.329	(0.314)	Reading	520	(493)
Relative poverty rate (%, late 2000s)	21.7	(17.7)	Mathematics	529	(496)
Public and private spending (% of GDP)			Science	539	(501)
Health care (2009)	9.5	(9.7)	Share of women in parliament		
Pensions (2009)	10.6	(8.2)	(%, February 2013)	11.3	(25.3)
Education (excluding tertiary, 2009)	3.0	(4.0)	Net official development assistance (% of GNI)	0.2	(0.4)

Better life index: *www.oecdbetterlifeindex.org*

1. Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exists for at least 29 member countries.
2. 2010 for the OECD.
3. 2009 for the OECD.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

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Executive summary

Main findings

After two severe shocks – the 2008 global financial crisis and the 2011 Great East Japan Earthquake – Japan fell into recession for the third time in five years. The public debt ratio has risen steadily for two decades, to over 200% of GDP. Strong and protracted consolidation is therefore necessary to restore fiscal sustainability, which is Japan's paramount policy challenge. However, this will slow nominal GDP growth, making fiscal adjustment still more difficult. Hence, exiting deflation and boosting Japan's growth potential are key to addressing the fiscal predicament. In this light, the new government's resolve to revitalise the economy through a three-pronged strategy combining bold monetary policy, flexible fiscal policy and a growth strategy, is most encouraging.

Stopping and reversing the rise in the debt-to-GDP ratio is crucial. Stabilising the public debt ratio by 2020 may require, depending on the evolution of GDP and interest rates, an improvement of the primary fiscal balance from a deficit of 9% of GDP in 2012 to a surplus as high as 4% by 2020. Controlling expenditures, particularly for social security in the face of rapid population ageing, is key. Substantial tax increases will be needed as well, although this will also have a negative impact on growth. Given the size and duration of fiscal consolidation, Japan faces the risk of a marked rise in interest rates, threatening a banking system that is highly exposed to Japanese government debt.

Ending 15 years of deflation is a priority. The Bank of Japan's new commitment to a 2% inflation target and "quantitative and qualitative monetary easing" is welcome. The planned doubling of the monetary base, through expanded purchases of government bonds with longer maturities and private assets, is aimed at achieving the inflation target in about two years. Aggressive monetary easing will boost growth and inflation, in part through a weaker yen, although Japan is not targeting the exchange rate.

Reconstruction from the tragic 2011 disaster highlights some of the structural reform challenges facing Japan. Reform of agriculture, an important sector in the Tohoku region, is a priority. The high level and distortionary nature of agriculture support imposes heavy burdens on consumers and taxpayers, undermines the dynamism of the farming sector, complicates Japan's participation in comprehensive bilateral and regional trade agreements, and entails environmental costs. The reduced role of nuclear power following the Fukushima accident calls for accelerating the development of renewable energy over the long run. This would be facilitated by fundamental reform of the electricity sector to reduce the negative impact of integrated, regional monopolies and the lack of an effective price mechanism.

Boosting labour force participation and productivity are essential. With the working-age population projected to fall by 40% by 2050, measures are needed to make the most of Japan's human resources, including women, older persons and youth. The tax and social security systems and inadequate childcare facilities create work disincentives for secondary earners, primarily women. For older workers, mandatory retirement at age 60 ends careers prematurely, especially as Japan has the highest life expectancy in the world. Educational reforms are needed to help boost productivity, beginning with more investment in pre-primary education. Japanese universities do not rank high in international comparison in many respects, including in their contribution to innovation.

Fiscal consolidation may adversely affect inequality and poverty. Both have risen in recent years, with Japan's relative poverty rate now the sixth highest in the OECD. The redistributive powers of the tax and benefit systems are weak in Japan, while the high share of low-paid, non-regular workers contributes to inequality. Labour market dualism is driven in part by higher employment protection for regular workers, encouraging firms to hire non-regular workers to enhance employment flexibility, and by the lower labour cost of non-regular workers. The reliance on private, after-school lessons, particularly in *juku*, perpetuates inequalities, as their high costs makes participation dependent on family income.

Key recommendations

The full implementation of the three-pronged strategy, which is aimed at exiting deflation and revitalising the Japanese economy, is of the utmost importance, particularly to restore fiscal sustainability, but also because of the ramifications for the world economy.

Restore fiscal sustainability

- Target a primary budget surplus large enough to stabilise the debt ratio by 2020 and set out a detailed and credible plan, including spending goals by category and a timetable for tax hikes, to reach the target.
- Implement the planned hike in the consumption tax rate in two stages to 10% by 2015, while maintaining a single rate to avoid the distortions associated with multiple rates.
- Reform social security programmes, including hiking the pension eligibility age, to contain spending growth.
- Rely primarily on the consumption tax but also on other indirect taxes, such as environment-related levies, as well as the broadening of personal and corporate income tax bases, to boost government revenue.
- Use the Council on Economic and Fiscal Policy as an expert body to guide and monitor fiscal consolidation.

End deflation through aggressive monetary policy aimed at the 2% inflation target

- Implement the "quantitative and qualitative monetary easing" to achieve the new 2% inflation target as early as possible.
- Maintain an expansionary policy stance until inflation has durably reached the 2% target level.

Following the Great East Japan Earthquake, step up efforts to revitalise Japan

Reform agriculture and promote Japan's integration in the world economy

- Shift from market price supports to decoupled payments, while phasing out supply control measures.
- Promote the consolidation of farmland to lower production costs.
- Liberalise border measures on agricultural goods as domestic reform advance, thereby facilitating participation by Japan in comprehensive regional and bilateral trade agreements, including the Trans-Pacific Partnership.

Promote green growth and restructure the electricity sector

- Offset the decline in nuclear power by expanding the role of renewable energy through green growth policies, including a strong and consistent price on carbon through a carbon tax in combination with an emissions trading system.
- Create a more competitive electricity sector by reducing the dominance of the ten regional monopolies through ownership unbundling of generation and transmission and expanding the wholesale market.
- Ensure the independence of the new Nuclear Regulatory Agency and create an independent regulator for the electricity sector to promote competition.

Promote growth by increasing labour force participation and raising productivity through education reforms

- Increase female participation by reforming the tax and social security systems, encouraging better work-life balance, increasing the availability of affordable childcare and breaking down labour market dualism.
- Encourage greater use of flexible employment and wage systems, in part by abolishing mandatory retirement at age 60, to lengthen the careers of older workers.
- Improve tertiary education by strengthening competition through increased transparency about performance and internationalisation of universities, while expanding their role in innovation.

Promote social cohesion by reducing income inequality and relative poverty

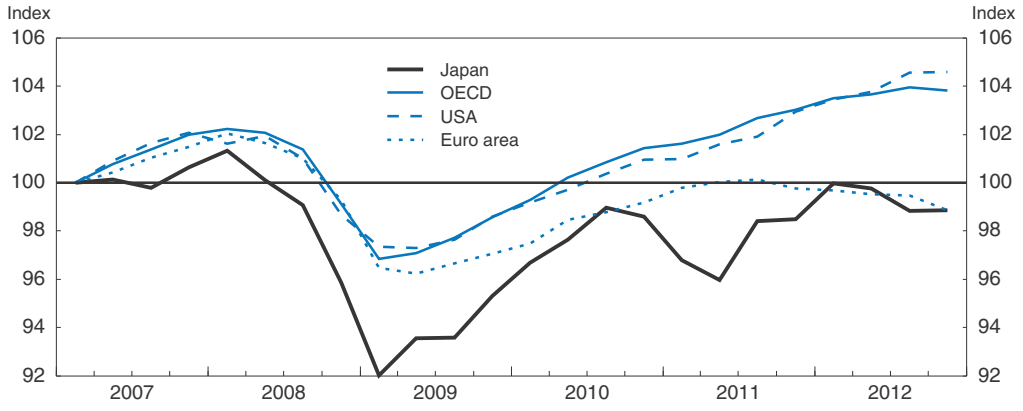
- Break down labour market dualism by upgrading training programmes and increasing the social insurance coverage of non-regular workers and reducing effective employment protection for regular workers.
- Enhance the redistributive power of tax and benefit systems by increasing the share of net benefits received by low-income persons, while providing training and incentives to leave assistance for those able to work.
- Introduce an earned income tax credit, while enhancing transparency about income.
- Reduce reliance on private, after-school lessons, particularly in *juku*, and ensure access to high-quality early childhood education and care for children from low-income families.

Assessment and recommendations

The 2011 Great East Japan Earthquake – the worst disaster in Japan's post-war history – killed around 20 000 people and caused enormous physical damage. Japan's initially strong recovery from the earthquake and tsunami stalled in mid-2012, leaving output 2½ per cent below the peak recorded in 2008 prior to the global economic and financial crisis (Figure 1). Japan has experienced three recessions in five years. The key challenges are to achieve sustained growth and fiscal sustainability following these two shocks.

Figure 1. **Japan has faced two major shocks since 2008**

Real GDP levels in an index with the first quarter of 2007 set at 100



Source: OECD Economic Outlook Database.

StatLink http://dx.doi.org/10.1787/888932797461

More than two decades after the collapse of the 1980s asset price bubble, Japan remains stuck in deflation, with asset and consumer prices continuing to decline despite a virtually zero policy interest rate and the central bank's quantitative easing (QE) measures. Sluggish output growth and rising public spending, due in part to population ageing, have pushed gross public debt above 200% of GDP, raising serious concerns about fiscal sustainability. Eliminating the primary budget deficit – estimated at 9% of GDP in 2012 (on a general government basis) – implies large-scale fiscal consolidation that will hold back nominal GDP growth, making it difficult to stabilise the public debt ratio. Meanwhile, structural problems, including rapid population ageing and weak integration in the world economy, reduce growth potential. Political instability, with six prime ministers since 2008, has hindered economic policy making.

The new government has pledged a three-pronged strategy of bold monetary policy, flexible fiscal policy and a growth strategy that encourages private-sector investment to

exit from deflation and revitalise Japan. The government has promised that it will spell out a new growth strategy by mid-2013, followed by a new medium-term fiscal strategy. The new growth strategy should include bold reforms to substantially increase potential growth, which is currently about ¾ per cent per annum according to OECD estimates.

Resolving Japan's debt problem requires achieving robust nominal output growth, through gains in productivity and sustained inflation, thereby reversing the decline in nominal GDP, which has fallen at a ¾ per cent annual rate during the past decade. Given the complexity and magnitude of these problems, as well as the growing risk that they pose to the stability of both Japan and the world economy, it is time to reassess policy approaches. Fiscal consolidation remains a priority, especially following the fiscal stimulus in early 2013. The burden for sustaining growth therefore falls on monetary and structural policies. The new "quantitative and qualitative monetary easing" should be implemented to meet the new 2% price stability target, although this may not be enough. Pushing ahead with structural reform on a broad front is equally imperative to achieve sustained growth.

The banking sector also faces risks. With government bonds accounting for a fifth of its assets, a rise in interest rates would hit bank balance sheets. The International Monetary Fund (IMF) concluded that major banks could handle "moderately large shocks to government bond prices", although they could pose "sizable risks" to regional banks (IMF, 2012a). The BoJ has estimated that a 2 percentage-point rise in interest rates in line with inflation would result in capital losses equivalent to 2.5% of GDP for banks, "inducing banks to tighten their lending attitudes to restore their capital adequacy ratios" (BoJ, 2012).

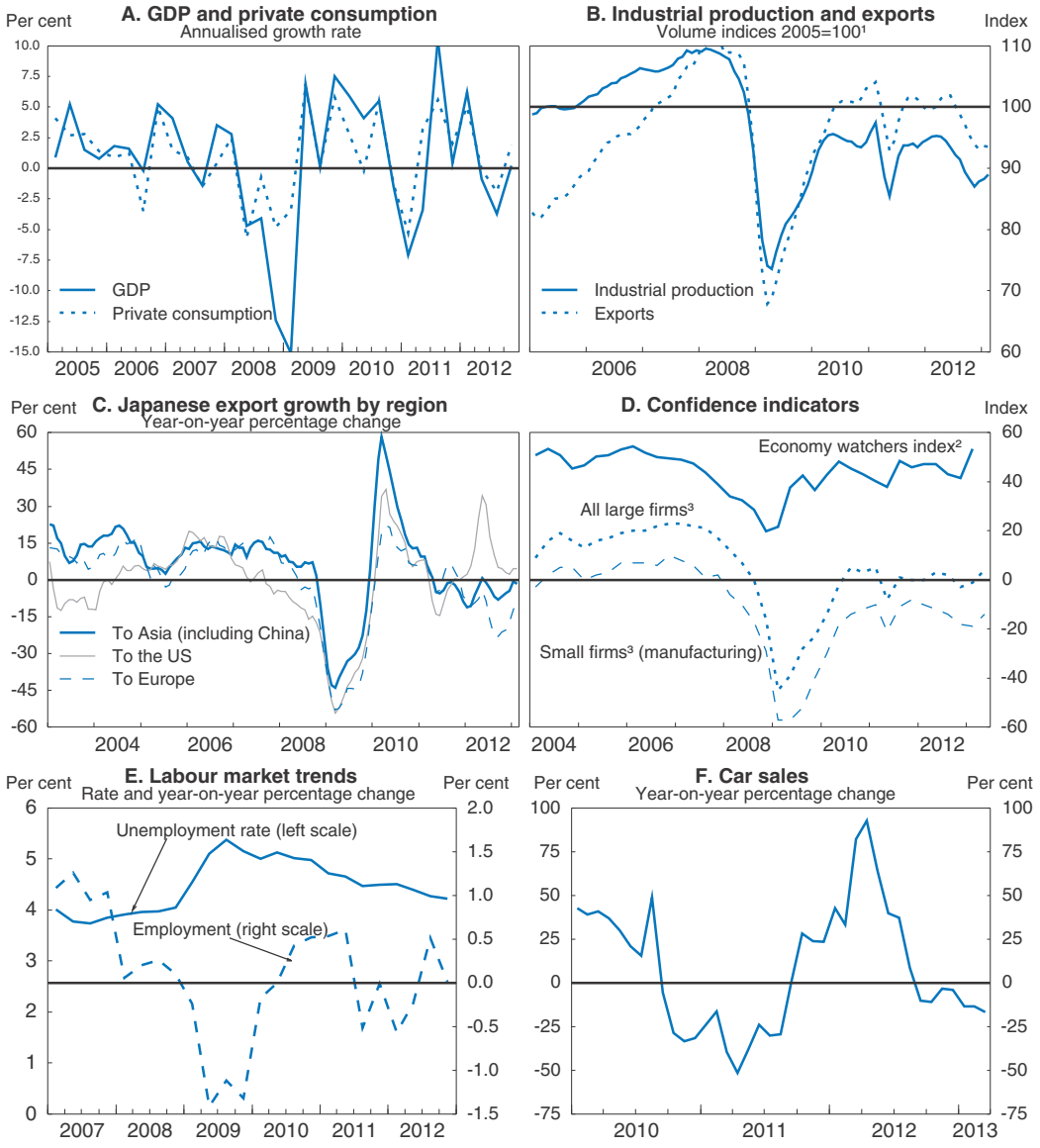
The 2011 tragedy highlights the importance of enhancing Japan's growth prospects through structural policies. In particular, the reconstruction of farming areas in the Tohoku region that was devastated by the earthquake and tsunami should serve as a model for the nation (Reconstruction Headquarters, 2011), while also facilitating Japan's participation in bilateral and regional trade agreements. Similarly, the Fukushima nuclear accident and the reduced reliance on nuclear power make it even more important to accelerate the transition towards green growth by developing renewable energy resources, while reforming the electricity power system.

A range of other structural policies, notably boosting labour force participation and improving education, are also priorities to promote growth and address the fiscal imbalance. At the same time, the authorities should take into account the effect of fiscal consolidation on social cohesion in the context of rising income inequality and relative poverty. Policy reforms, particularly to break down labour market dualism (see the chapter on labour market reforms in the 2011 *OECD Economic Survey of Japan*) and to address problems in the education system (see the education chapter in the 2011 *Survey*), are a priority to promote inclusive growth and should be accompanied by measures to improve outcomes on a range of well-being indicators.

A policy-driven expansion

The decline in output in the second and third quarters of 2012 (Figure 2) was primarily due to weak external conditions. Exports fell sharply (Panel B), reflecting Japan's concentration in capital and intermediate goods and in discretionary consumer products (Thorbecke, 2012). In addition, exports suffered from the strong yen, which in mid-2012 was 45% above its 2007 level in nominal effective terms and 24% in real terms (Figure 3), reflecting capital inflows to Japan, a "safe haven" during global financial turbulence.

Figure 2. **Recent macroeconomic developments in Japan**



1. Data are three-month moving averages of seasonally-adjusted industrial production and exports.
2. A survey of workers, such as taxi drivers and shop clerks, whose jobs are sensitive to economic conditions. The index ranges from 100 (better) to zero (worse), with 50 indicating no change.
3. Diffusion index of "favourable" minus "unfavourable" conditions.

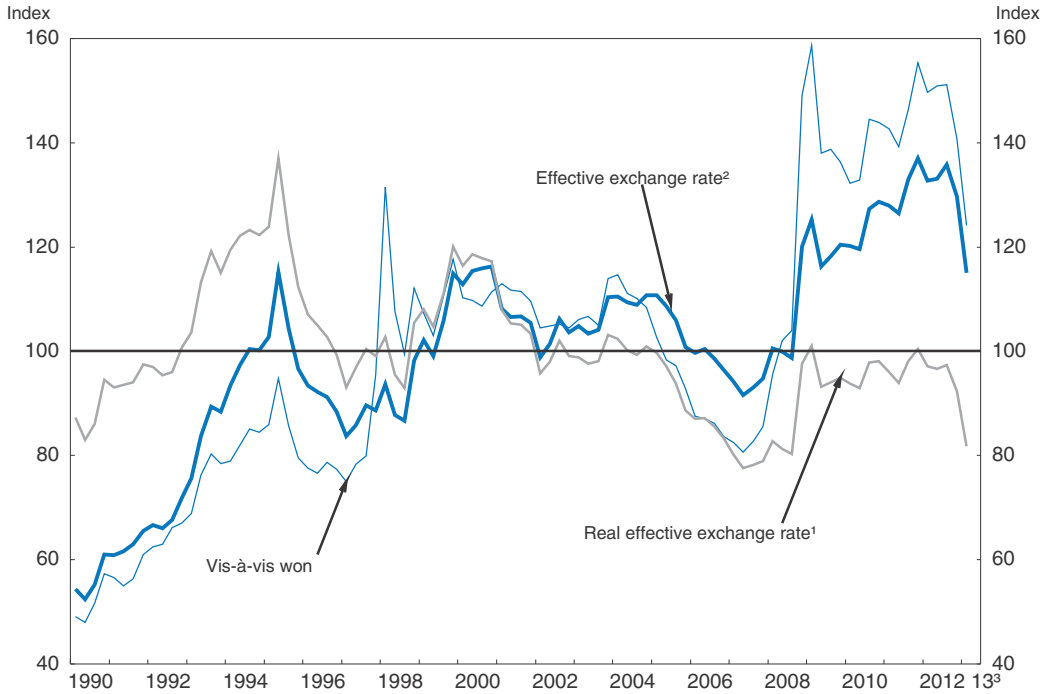
Source: OECD Economic Outlook Database, Ministry of Economy, Trade and Industry, Bank of Japan and Cabinet Office.

StatLink http://dx.doi.org/10.1787/888932797480

According to the IMF (IMF, 2012b), the yen was "moderately overvalued" by up to 10% in mid-2012. Moreover, the yen appreciated by 82% over the same period relative to the Korean won, which is crucial given the competition between Japanese and Korean products in world markets. Japanese exports to China, which account for a quarter of Japan's total exports, and other Asian countries fell, reflecting slower growth and political tension with China (Panel C). Finally, the intensification of the euro area crisis last year contributed to a double-digit fall in Japanese exports to the European Union.

Figure 3. **The yen remains well above its average since 1990 in nominal, but not real, terms**

Average of 1990-2012=100



1. Deflated based on consumer price indices.
2. Trade-weighted, *vis-à-vis* 49 trading partners.
3. The rate shown for the first quarter of 2013 is the average of January and February.

Source: OECD Economic Outlook Database and Bank of Japan.

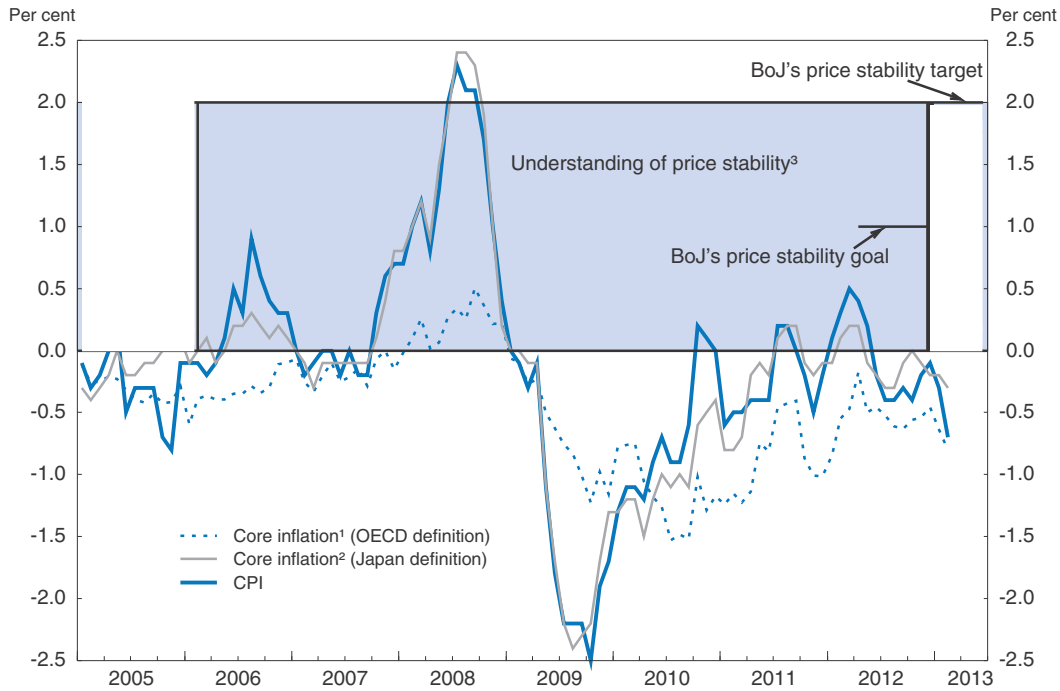
How to read this figure: An increase in the line denotes a stronger currency (an exchange rate appreciation). The effective exchange rate is the average of 49 countries with which Japan trades, as opposed to bilateral exchange rates between two countries, such as the exchange rate of the yen against the Korean won shown in the figure. Real effective exchange rates adjust for inflation differences between Japan and its trading partners. A rise in the real effective exchange rate implies that Japan loses price competitiveness.

StatLink http://dx.doi.org/10.1787/888932797499

The deteriorating global environment affected domestic demand, which had been spurred by reconstruction spending following the 2011 disaster. In 2012, an estimated 1½ per cent of GDP was spent on reconstruction. However, falling exports reduced industrial production, which is now nearly one-fifth below its 2008 peak (Panel B), in turn weakening business investment. Falling confidence, particularly among small firms, also held back investment (Panel D). Despite weakness in the business sector, employment increased in the second half of 2012 (Panel E), sustaining private consumption, which was also boosted by government subsidies for the purchase of environment-friendly vehicles. Indeed, car sales surged by 59% in the first half of 2012, accounting for about half of the rise in private consumption, before slowing in the second half (Panel F). Against this backdrop, the unemployment rate in early 2013 is around 4¼ per cent, compared to its 2007 trough of 3.7%, while, deflation continues (Figure 4). The short-lived expansions following the two shocks left Japan with an output gap estimated at 1% of GDP at the end of 2012.

Figure 4. **Deflation continues**

Year-on-year percentage change



1. Excludes food and energy.
2. Excludes only fresh food.
3. Of the Bank of Japan's Policy Board members.

Source: Bank of Japan and *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932797518

Growth is projected to resume during 2013-14, although there are large downside risks

Exports stabilised in late 2012, leading to faster output growth in the first quarter of 2013, driven by a rebound in industrial production. As exports regain momentum, sustained by the projected pick-up in world trade growth, so will investment by Japan's cash-rich business sector. Recent developments have led to an upward revision in Japan's outlook. *First*, the new government announced a 10.3 trillion yen package (2.2% of GDP) in January 2013 (see below). *Second*, the yen has depreciated by 15% against the dollar since mid-November, when national elections were announced. *Third*, equity prices have risen by about 30% over the same period.

With these positive factors, output is now projected to grow by around 1½ per cent in both 2013 and 2014, despite the waning contribution from public reconstruction spending and the expected fiscal consolidation in 2014 (Table 1). Domestic demand will be affected by the planned hike in the consumption tax rate, but the impact is likely to be partially offset by a fall in the household saving ratio. With the output gap expected to close, inflation is projected to move into positive territory during 2013.

While the outlook has improved, many downside risks, domestic and external, overshadow this projection. The key risk is that the three-pronged strategy will not be fully implemented. In particular, with very high public debt, any decision to delay fiscal consolidation could result in a run-up in long-term interest rates, with negative

Table 1. **Short-term economic projections**[1]

	2010	2011	2012	2013	2014
Demand and output (volumes)					
GDP	4.7	-0.6	2.0	1.4	1.4
Consumption					
Private	2.8	0.5	2.4	1.2	1.2
Government	1.9	1.5	2.7	1.1	-0.4
Gross fixed investment	-0.2	1.1	4.5	3.2	0.4
Public[2]	0.1	-6.9	12.5	2.1	-15.7
Residential	-4.8	5.5	2.9	11.3	-2.3
Business	0.7	3.3	2.0	1.7	6.3
Final domestic demand	2.0	0.8	2.8	1.6	0.7
Stockbuilding[3]	1.0	-0.5	0.0	-0.2	0.1
Total domestic demand	2.9	0.3	2.9	1.4	0.8
Exports of goods and services	24.4	-0.4	-0.3	-0.3	8.5
Imports of goods and services	11.1	5.9	5.3	0.3	4.1
Net exports[3]	1.7	-0.9	-0.9	-0.1	0.6
Inflation and capacity utilisation					
GDP deflator	-2.2	-1.9	-0.9	-0.7	1.1[4]
CPI	-0.7	-0.3	0.0	-0.1	1.8[4]
Core CPI[5]	-1.2	-0.9	-0.5	-0.5	1.7[4]
Unemployment rate	5.0	4.6	4.3	4.2	4.1
Output gap	-0.5	-1.5	-0.2	0.4	1.1
Memorandum items:[6]					
World trade growth	12.8	6.0	2.7	3.6	6.4
Net government lending[7]	-9.5	-9.6	-10.2	-10.2	-7.7
Net primary balance[7]	-8.8	-8.8	-9.3	-9.2	-6.4
Gross debt (% of GDP)	193.3	210.6	219.1	228.3	232.6
Net debt (% of GDP)	113.1	127.4	135.9	145.1	149.4
Household saving ratio (%)	2.0	2.3	0.8	1.0	0.6
Current account (% of GDP)	3.7	2.0	1.0	1.0	1.6

1. Demand and output and inflation and capacity utilisation indicators are historical data for 2010 to 2012. Projections for 2013-2014 are based on the 18 March exchange rate of 95.3 yen per dollar.
2. Including public corporations.
3. Contribution to GDP growth.
4. Including the planned hike in the consumption tax rate from 5% to 8% in April 2014. Excluding the tax hike, the CPI and core CPI are projected to rise at an annual rate of about ½ per cent in the final quarter of 2014.
5. The core CPI is the OECD definition, which excludes both food and energy.
6. OECD estimates for 2012, except for the current account.
7. Per cent of GDP, excluding one-off factors.

Source: OECD Analytical Database and OECD estimates and projections.

implications for the financial sector, fiscal sustainability and growth. Indeed, a 100 basis-point rise in interest rates would boost the budget deficit by about ½ per cent of GDP over five years (Cabinet Office, 2010). In addition, the emergence of a temporary current account deficit in late 2012 has raised concerns that over the longer run Japan may become dependent on foreign investors to finance its budget deficit. However, a current account surplus of about 1½ per cent of GDP is projected in 2014. Japan's energy supply also remains a question mark, as 48 nuclear reactors (out of a total of 50) have suspended operations. On the external side, there is uncertainty about developments in the euro area, which had contributed to the yen's strength, and in China. Looking beyond 2014, fiscal consolidation will affect growth, given that, on some estimates, the multiplier on tax increases may be

around -0.5 (Cabinet Office, 2010), although there is considerable uncertainty attached to such estimates. Moreover, the impact may be partially mitigated by other factors, such as improved confidence and an expansionary monetary stance (Blöchliger *et al.*, 2012).

Monetary policies to support growth and end deflation

Deflation lowers nominal GDP, thereby boosting the debt ratio and threatening fiscal sustainability. The GDP deflator has dropped by about 13% since 2001 and the monthly core consumer price index (CPI) registered year-on-year growth in only 12 months over that period. If inflation had been even 1% since 2001, the annual average nominal GDP growth rate would have been 1¾ per cent over the decade and the public debt ratio would have been about 160% of GDP rather than more than 200%, according to this mechanical calculation. Of course, actual figures would depend on a number of factors. The falling price level has other undesirable effects, such as keeping the real interest rate significantly positive at a time when ample slack would call for negative real rates. Indeed, a Taylor rule calculation by the OECD suggested that a policy interest rate of around minus 4% would have been appropriate in 2012. Given the deleterious effects of deflation, achieving price stability should be a top priority.

Past measures by the Bank of Japan

The BoJ has taken a number of steps to that end, in addition to gradually cutting the policy interest rate to "virtually zero" (0 to 0.1%) by October 2010 (Table 2). In 2009, it introduced a "funds-supplying operation" that lends money to banks (against collateral) for three months at the policy interest rate. In October 2010, the BoJ launched an "asset purchase programme", focused primarily on government securities but also including private assets, such as corporate bonds. The size of this programme has been steadily ratcheted up. In December 2012, the target size of purchases by the end of 2013 was boosted to 101 trillion yen (21% of GDP), including the funds-supplying operation.

The unconventional QE measures pursued since 2001 likely contributed to the decline in long-term bank lending rates (Figure 5), which fell even during the longest expansion in Japan's post-war history (2002-08). A recent study found that the BoJ's policy had a positive effect on economic activity (Berkmen, 2012), aided by the improvement in the banking sector and corporate deleveraging. However, going forward, it is very difficult to quantify the exact impact of additional unconventional measures.

With credit growth still weak, the BoJ introduced the Growth-Supporting Funding Facility in June 2010 to directly encourage banks to lend to firms by providing long-term funding at low costs. The scheme was aimed at firms in growth industries, such as the health and environment sectors. It provides financial institutions with one-year loans that can be rolled over up to three times. The total amount of funds was expanded from 3 trillion yen (1.2% of outstanding private bank loans to non-financial private firms) to 5.5 trillion yen. Nearly 3.5 trillion yen has been disbursed thus far. Major banks' lending has recently begun to increase year-on-year, though this largely reflects a pick-up in overseas loans. As with other non-conventional measures, the scheme could risk postponing needed restructuring in the banking and business sector by supporting non-viable

Table 2. **A chronology of major monetary policy measures in Japan**

2009	**December**	The BoJ introduces a new "funds-supplying operation", with the total amount of loans set initially at 10 trillion yen (2% of GDP).
	December	The BoJ clarifies its "understanding of medium to long-term price stability", initially set at 0 to 2% in 2006, by stating that the understanding is inflation "in a positive range of 2% or lower, and the midpoints of most Policy Board members' understanding are around 1%".
2010	**March**	The amount of the funds-supplying operation is doubled to 20 trillion yen (4% of GDP).
	June	The BoJ introduces a new "fund-provisioning measure", amounting to 3 trillion yen, aimed at encouraging banks to lend to growth sectors.
	August	The amount of the funds-supplying operation is raised to 30 trillion yen (6% of GDP).
	October	The BoJ introduces the "comprehensive monetary easing", in which it: *i)* Reduces the policy rate from 0.1% to between 0 and0.1%. *ii)* Pledges to "maintain the virtually zero interest rate policy until the Bank judges, on the basis of the understanding of medium to long-term price stability, that price stability is in sight". *iii)* Establishes an "asset purchase programme", which includes the 30 trillion yen funds-supplying operation and 5 trillion yen (1% of GDP) of assets purchases, divided between Japanese government securities (3.5 trillion yen) and private assets (1.5 trillion yen).
2011	**March**	The asset purchase programme is expanded to 40 trillion yen (8% of GDP).
	June	The amount of the fund-provisioning measure for growth industries is raised to 3.5 trillion yen (0.7% of GDP).
	August	The asset purchase programme is expanded to 50 trillion yen (10% of GDP).
	October	The asset purchase programme is expanded to 55 trillion yen (11% of GDP).
2012	**February**	The asset purchase programme is expanded to 65 trillion yen (14% of GDP).
	February	The BoJ introduces a ''price stability goal in the medium to long term'' of a positive range of 2% or lower, while setting a goal of 1% "for the time being".
	March	The amount of the fund-provisioning measure for growth industries is raised to 5.5 trillion yen (1.1% of GDP).
	April	The asset purchase programme is expanded to 70 trillion yen (15% of GDP).
	September	The asset purchase programme is expanded to 80 trillion yen (17% of GDP).
	October	The asset purchase programme is expanded to 91 trillion yen (19% of GDP).
	October	The BoJ announces plans to establish a new fund-providing measure to stimulate bank lending without setting an upper limit to the total amount of funds supplied.
	October	The government and the BoJ release a joint statement of the "measures aimed at overcoming deflation".
	December	The asset purchase programme is expanded to 101 trillion yen (21% of GDP).
2013	**January**	The BoJ sets a 2% price stability target that it will try to reach "at the earliest possible time". The BoJ adopts "open-ended" easing and boosts the target for purchases to 111 trillion yen (23% of GDP) in 2014.
	January	The government and the BoJ release a joint statement on overcoming deflation and achieving sustainable economic growth.
	March	Haruhiko Kuroda is approved as BoJ governor, with Kikuo Iwata and Hiroshi Nakaso as vice governors.
	April	The BoJ launches "quantitative and qualitative monetary easing".

Source: Bank of Japan.

companies. In addition, the decision to target specific sectors gives the scheme an industrial-policy orientation, raising concerns about resource misallocation and fairness.

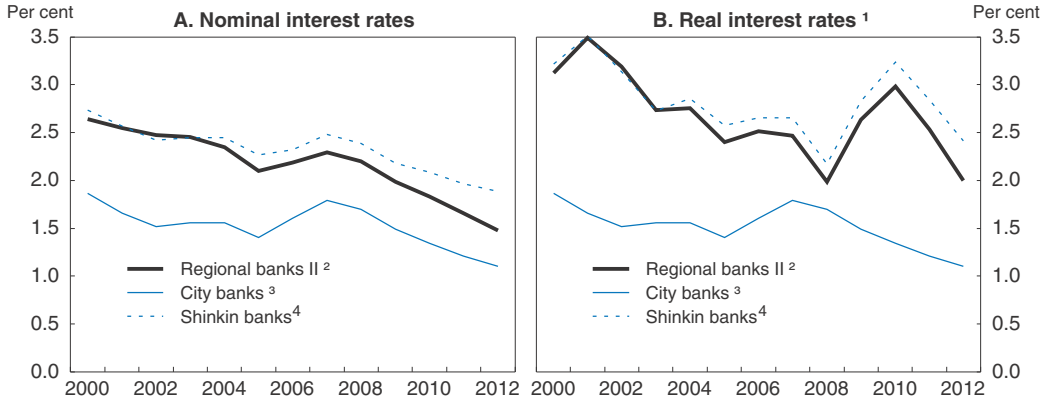
In 2012, the BoJ announced the introduction of the Stimulating Bank Lending Facility to provide unlimited long-term funds at 0.1% to financial institutions, beginning in June 2013. If banks' high financing costs or limited access to funds are indeed the main obstacle to credit expansion, such facilities can be effective in stimulating credit. This could be the case for banks with weak balance sheets. However, Japanese banks generally have strong balance sheets and lending attitudes of financial institutions are accommodative, even for small firms, according to the March 2013 Tankan Survey.

Directions for monetary policy

Core CPI is currently falling at a rate of about ¾ per cent (year-on-year), faster than its average of around ½ per cent over the past decade. In January 2013, the BoJ replaced its 1% price stability goal with a 2% price stability target, and the central bank and the government will regularly review the progress in achieving the target. The increase in the

Figure 5. **Interest rates on bank loans have fallen**

Average long-term (more than 12 months) interest rates



1. Nominal interest rate less current core inflation (OECD definition).
2. A total of 41 banks, serving primarily local corporations, individuals and public-sector bodies.
3. The six major national banks.
4. A total of 270 co-operative regional financial institutions, serving primarily SMEs and local residents.

Source: Bank of Japan.

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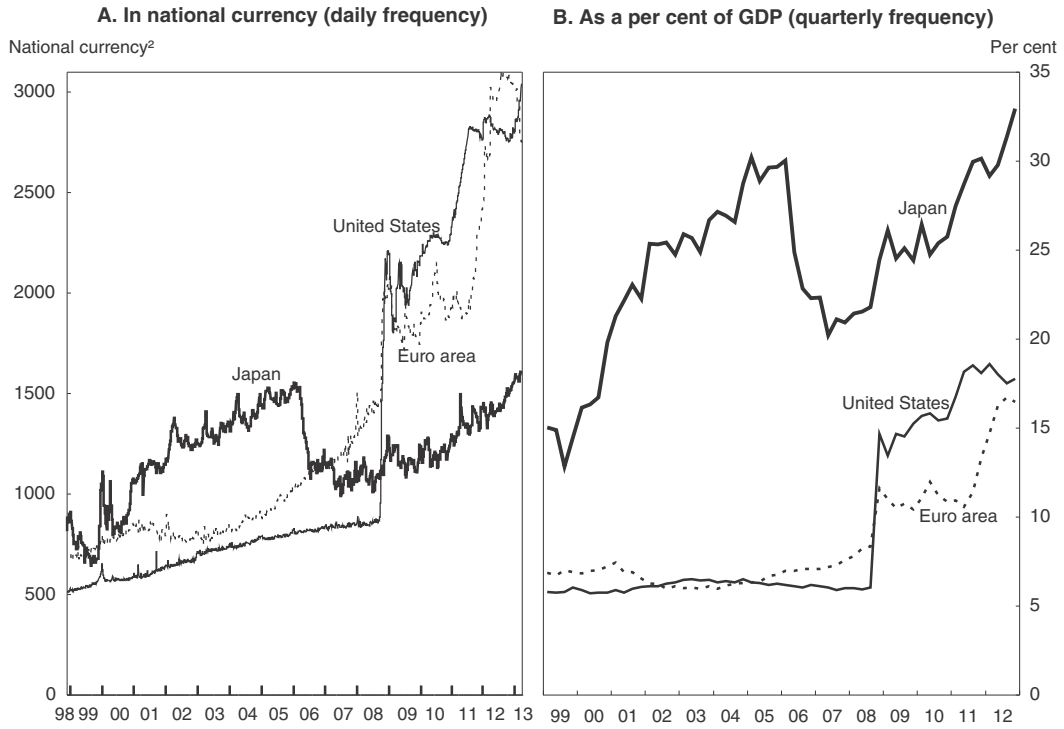
inflation target to 2%, the mid-point of most target zones of inflation-targeting central banks in the OECD, is welcome (see the macroeconomic chapter in the 2011 *OECD Economic Survey of Japan*). The higher target, if achieved, would help reduce the towering public debt ratio and reduce the risk of falling back into deflation. In a January 2013 joint statement, the government and the BoJ agreed to strengthen policy co-ordination to "overcome deflation early and achieve sustainable economic growth with price stability".

- The BoJ stated that it will "pursue monetary easing and aim to achieve this target at the earliest possible time", although it believes that achieving price stability depends on "efforts by a wide range of entities".
- The government promised to "not only flexibly manage macroeconomic policy but also [to] formulate measures for strengthening competitiveness and potential growth".

While this is certainly imperative, the central bank needs to achieve positive inflation even in the absence of higher potential growth, which may take time to achieve. Inflation is ultimately determined by monetary policy, allowing for changes in velocity and price stickiness, even if Japan's working-age population and potential growth are falling.

The BoJ pioneered the use of QE between 2001 and 2006, expanding the size of its balance sheet and helping achieve positive inflation by 2007 (Figure 6). Despite the persistence of deflation since 2009, the BoJ's response to the crisis was relatively small. As a share of GDP, the BoJ's balance sheet rose by 11.5 percentage points in the period to end-2012, the lowest of the four major central banks (Table 3), although the size of central bank balance sheets does not fully capture the current degree of monetary accommodation. Given that Japan is the only country to suffer sustained deflation, the scale of QE in Japan should have been relatively large. While the balance sheet as a share of GDP is relatively high, this reflects the fact that the Japanese public likes to hold banknotes. Indeed, banknotes in circulation amount to 17% of GDP in Japan, versus less than 7% in the United States and the United Kingdom (Standard & Poor's, 2012). The BoJ should also continue to

Figure 6. **A long-term comparison of central bank balance sheets**[1]



1. Defined as central bank liabilities.
2. Billions of dollars and euro for the United States and the euro area, respectively, 100 billion yen for Japan.
Source: Thompson Financial.

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focus on improving the transmission of monetary policy, in part by effectively implementing the lending facilities.

The impact of QE has been limited thus far by its focus on government bonds with relatively short maturities. Indeed, in the BoJ's asset purchase programme, government

Table 3. **An international comparison of central bank balance sheets**

	Size of balance sheet		
	August 2008	December 2012	Per cent increase
A. Nominal amounts			
Bank of Japan (trillion ¥)	109.9	158.4	44.1
Bank of England (billion £)	93.2	410.4	340.3
Federal Reserve (billion $)	870.7	2 854.1	227.8
European Central Bank (billion €)	1 449.1	3 018.2	108.3
			Percentage-point increase
B. As a share of GDP			
Bank of Japan	22.1	33.6	11.5
Bank of England	6.5	26.0	19.5
Federal Reserve	6.0	18.0	12.0
European Central Bank	15.7	31.9	16.2

Source: Thompson Financial and OECD calculations.

bonds (with one to three years remaining to maturity) and treasury bills accounted for 90% of the 76.1 trillion in assets to be purchased by the end of 2013 (Table 4). In addition, the share of private assets - commercial paper, corporate bonds, exchange-traded funds (ETFs) and real estate investment funds (J-REITS) – was only 10%. Central bank purchases of assets that are imperfect substitutes for the asset supplied (central bank reserves) may have a larger impact, by strengthening the "portfolio rebalancing effect" and by reducing long-term and other risk premia. This implies that quantitative measures may be more potent if a ten-year government bond is purchased rather than a three-month government bill and still more potent if a ten-year corporate bond is purchased.

Table 4. **The composition of the Bank of Japan's asset purchase programme**

In trillion yen and per cent

	Initial amount[1]	Per cent of total	Actual purchases[2]	Per cent of total	Target purchase[3]	Per cent of total
Asset purchases						
Government debt subtotal	3.5	70.0	31.1	82.7	68.5	90.0
Government bonds[4]	1.5	30.0	22.1	58.8	44.0	57.8
Treasury discount bills	2.0	40.0	9.0	23.9	24.5	32.2
Private-sector assets subtotal	1.5	30.0	6.5	17.3	7.6	10.0
Commercial paper	0.5	10.0	1.9	5.1	2.2	2.9
Corporate bonds	0.5	10.0	3.0	8.0	3.2	4.2
Exchange-traded funds	0.45	9.0	1.5	4.0	2.1	2.8
Real estate investment trust	0.05	1.0	0.1	0.3	0.1	0.2
Sub-total	5.0	100.0	37.6	100.0	76.1	100.0
Funds-supplying operation	30.0		27.0		25.0	
Total	35.0		64.6		101.1	

1. Announced in October 2010.
2. As of November 2012.
3. Target for the end of 2013.
4. With one to three years of remaining maturity.

Source: Bank of Japan.

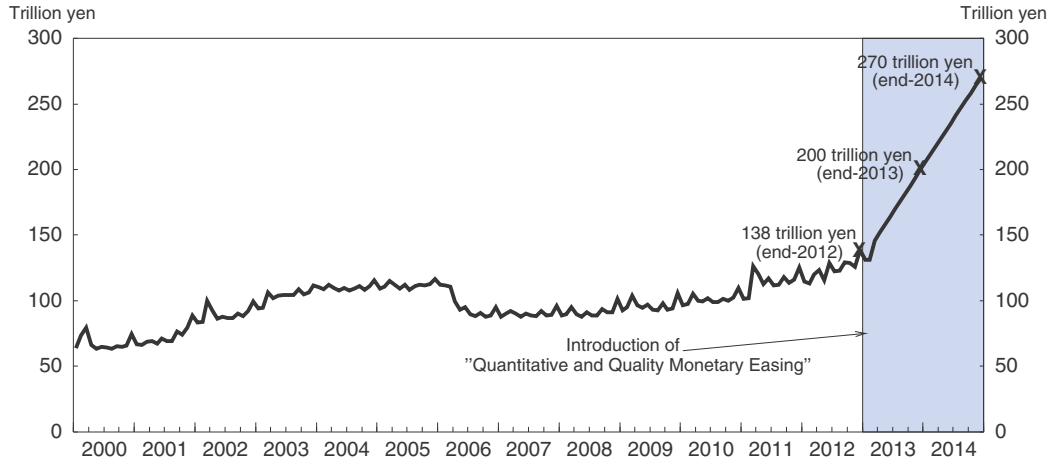
The Bank of Japan's new monetary policy framework

In order to increase the scale and improve the effectiveness of QE, the BoJ announced a historic change in the monetary policy framework in April 2013 to achieve the 2% inflation target over a time horizon of about two years. The new approach, "quantitative and qualitative monetary easing", focuses on the size of the monetary base (currency and commercial banks' reserves with the central bank), which it plans to double from 138 trillion yen (28% of GDP) at the end of 2012 to 270 trillion yen at the end of 2014 (Figure 7). Such a target requires nearly doubling purchases of government bonds to 7.5 trillion yen (1.5% of GDP) per month. The scope for QE will be expanded by the temporary suspension of the "banknote principle", which limited the central bank's holdings of long-term bonds to the outstanding balance of banknotes issued. The BoJ also plans to enhance its dialogue with market participants to smoothly achieve the doubling of the monetary base.

In addition to increasing the scale of QE, the new policy framework aims at enhancing its effectiveness by changing the composition of the assets purchased:

- The BoJ will purchase government bonds of all maturities. The objective is to increase the average remaining maturity of its government bond holdings from slightly less than three years to about seven years, matching the average maturity of the total stock of

Figure 7. **The monetary base target**



Source: Bank of Japan.

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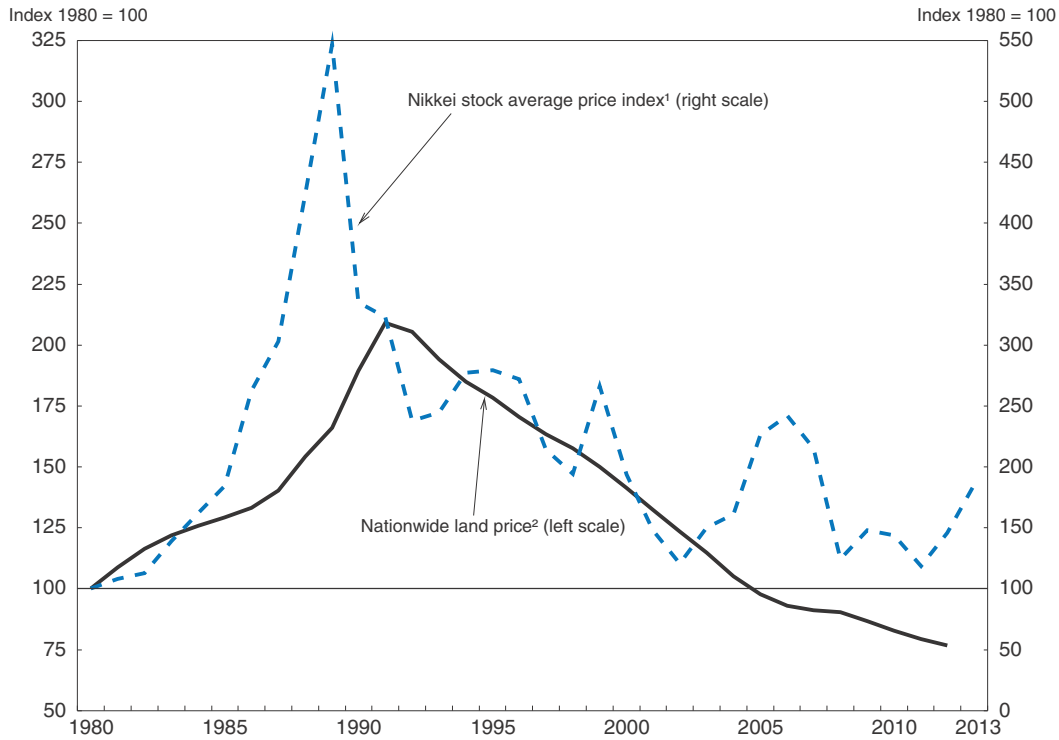
outstanding government bonds. Such an approach will further decrease interest rates across the yield curve.

- The BoJ will also increase purchases of private assets in order to reduce risk premia. Purchases of ETFs and J-REITs will boost the Banks' holdings of these assets at an annual pace of 1 trillion yen and 30 billion yen, respectively.

Moreover, the BoJ has promised to maintain the policy as "as long as it is necessary for maintaining the [inflation] target in a stable manner". Such a commitment would help avoid premature monetary tightening, as occurred in 2006 when the central bank ended QE while both headline and core inflation were negative. With two interest hikes by early 2007, core inflation peaked at only 0.4% in mid-2008, leaving Japan vulnerable to a return to deflation in the wake of the global financial crisis.

In principle, if non-traditional policies remain in place too long, inflation might overshoot. Moreover, it could slow restructuring by extending the lives of non-viable enterprises and fuelling asset price bubbles. Thus far, this does not seem to have been the case in Japan. Although Japan has had a virtually zero policy rate since 1999 (with the exception of 2006-08), the long-run downward trend in asset prices has continued (Figure 8). Nationwide land prices have fallen for 21 consecutive years, including a 3.3% drop in 2012, with all sub-categories (commercial, residential and industrial) recording declines. Moreover, the stock price index is less than a third of its 1989 peak and well below its level at the onset of the 2008 global financial crisis, despite its rebound in recent months. As for restructuring, bankruptcy rates are high. During the first half of 2012, a period of strong output growth, around 11 500 firms (with debts of more than 10 million yen) faced legal liquidation, compared to around 8 500 during 2001, a recession year. Long-term lending rates for small firms are still as high as 2½ per cent, although relatively low in a historical perspective (Figure 5).

Figure 8. **Japanese asset prices have been on a downward trend during the past two decades**



1. The Nikkei stock price index averages the price of 225 individual stocks listed on the Tokyo Stock Exchange.
2. Land prices on 1 January of each year for all uses (residential, commercial and industrial).

Source: Ministry of Land, Infrastructure, Transport and Tourism and Nikkei Indexes.

StatLink http://dx.doi.org/10.1787/888932797575

Box 1. **Summary of monetary policy recommendations**

- Implement "quantitative and qualitative monetary easing" to achieve the new 2% inflation target as early as possible.
- Maintain an expansionary monetary policy stance until inflation has durably reached the 2% target level.

The Great East Japan Earthquake: From tragedy to economic revitalisation

The March 2011 earthquake, the fifth strongest in recorded world history, inflicted an enormous human toll and was the costliest disaster in Japan's post-war history. The estimated 3½ per cent of GDP in property damage, concentrated in the Tohoku region, does not include the costs of the accident at the Fukushima nuclear plant triggered by the tsunami, leading to the suspension of operations at all of Japan's nuclear power plants, which had supplied nearly a third of electricity. The disaster caused a major economic contraction in Japan that spilled over to the world economy by disrupting global supply chains. Following the disaster, the government launched a ten-year reconstruction programme, focusing on the prefectures of Fukushima, Miyagi and Iwate. Reconstruction spending of around 17 trillion yen (3.6% of GDP) has already been approved, close to the 19 trillion yen envisaged for FY 2011-15. It is estimated that more than 10 trillion yen thereof was spent in 2011-12. The new government expanded the five-year spending target

to 25 trillion yen, with some of the extra spending in the January 2013 fiscal package and the FY 2013 budget.

The direct impact of the reconstruction on the national economy is limited by the small size of the three prefectures, which together account for 4% of Japan's GDP and population. Rather than just rebuilding devastated areas, reconstruction should aim to increase the dynamism of the national economy and boost potential growth towards the 2% target in the *Strategy to Revitalise Japan*. As the government stated, "The reconstruction of the disaster-afflicted areas plays a leading role in the revitalisation of a vibrant Japan, and the disaster areas cannot be truly rebuilt unless Japan's whole economy is revitalised" (Reconstruction Headquarters, 2011).

Two issues in the reconstruction of the Tohoku region stand out:

- Agriculture's share of the labour force in Tohoku is double the national average. The Basic Guidelines for Reconstruction call for reconstruction to make agriculture in Tohoku "serve as a model for the nation".
- The Fukushima nuclear accident revealed weaknesses in the electricity sector. Moreover, the plan to reduce the role of nuclear power creates a void that will need to be filled by alternative energy sources, including renewables. The Tohoku area has significant potential in renewable energy.

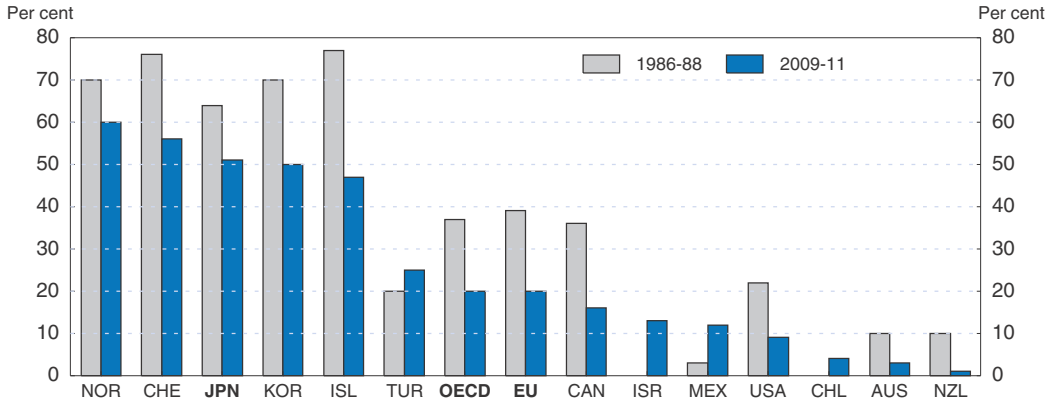
Reforming agriculture and promoting Japan's integration in the world economy

Although Japan's agricultural sector is small, it is one of the major topics of discussion concerning Japan's participation in comprehensive international trade agreements. The 2011 *Basic Policy and Action Plan for Revitalising the Food, Agriculture, Forestry and Fisheries Industries* announced by the previous government aims at bolstering the competitiveness of farmers over the next five years to create an agricultural sector compatible with high-level economic partnership agreements (EPAs). In March 2013, the new government decided to take part in the negotiations for the Trans-Pacific Partnership (TPP) Agreement, while promising to take every effort to defend the interests of Japanese agriculture.

During the past half century, agriculture's share of GDP dropped from 9% to 1%, while its share of the labour force shrank from 28% to 4%. Meanwhile, the cultivated land area has fallen by a quarter, while part-time farming has become the norm. Food self-sufficiency, a key objective for the government, fell from 79% in 1960 to 39% in 2010 in calorie terms. Agriculture faces a number of challenges:

- Productivity in land-intensive agriculture is low, largely reflecting the small average farm size of only 2 hectares, compared to the European Union (14 hectares) and the United States (170 hectares) (MAFF, 2012a). Small farms reflect the land reform following World War II, Japan's mountainous terrain, the production adjustment programme that allocates output of rice to specific farmers and subsidies that make small-scale farming profitable.
- High levels of commodity-specific support on certain products impose heavy burdens on consumers and taxpayers. The overall level of assistance, as measured by the Producer Support Estimate, was 51% in Japan in 2009-11, about double the OECD average (Figure 9). Higher prices boosted consumer spending on agricultural products to 1.8 times above what it would have been in the absence of government policies.

Figure 9. **The Producer Support Estimate for Japan is one of the highest in the OECD**



Note: Producer support is the annual monetary value of gross transfers from consumers and taxpayers arising from policies that support agriculture, regardless of their nature, as a per cent of the value of gross farm receipts. Countries are ranked according to their 2009-11 levels. Chile, Israel and Slovenia excluded from the OECD total in 1986-88. The EU figure is the EU12 for 1986-88 and the EU27 for 2009-11.
Source: *OECD PSE/CSE Database 2012.*

StatLink http://dx.doi.org/10.1787/888932797594

- Border measures, including the tariff of 341 yen per kilo of rice, which amounted to a 780% tariff rate in 2012, isolate farmers from international competition and complicate Japan's participation in comprehensive regional and bilateral trade agreements.

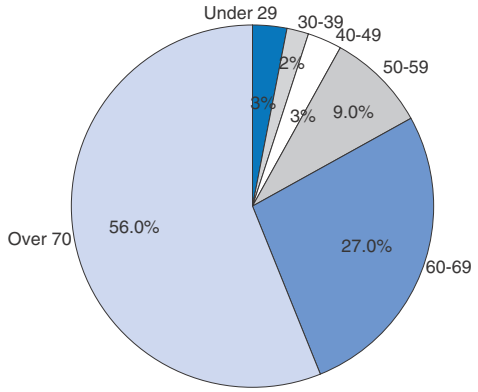
Still, some parts of the agricultural sector are thriving. In particular, vegetables increased their share of agricultural output from 9% in 1960 to 28% in 2010, exceeding the share of rice. Vegetables are a labour-intensive sector with business-oriented farms that receive relatively little government support and are not necessarily large-scale. A more open and competitive environment is essential to secure the growth and competitiveness of agriculture and promote Japan's integration in the world economy. Demographic factors create an opportunity for farm consolidation and other reforms to boost productivity. Indeed, in 2010, the average age of farmers was 66 and 56% of rice farmers were over 70, while another 36% were between 50 and 70 (Figure 10). Only 8% were under age 50.

The 2010 *Basic Policy on Comprehensive Economic Partnerships* stressed that Japan must implement "bold policies that will realise the full potential of the agricultural sector". Bold agricultural reform to revitalise the agricultural sector should begin promptly, given the urgent need to boost Japan's growth potential and the advanced average age of farmers. A reform agenda should include the following:

- The production adjustment programme should be phased out over a fixed and relatively short time period, thereby increasing the share of rice production by efficient farmers and reducing its production cost. The impact of lower rice prices should be mitigated by transitory income payments to large farmers.
- Support for farmers should be shifted away from market price supports – the most distortive type of support – toward payments decoupled from production and based on environmental services, such as water-buffering to prevent flooding. The degree of decoupling of producer support remains far below the European Union and the United States (Figure 11). Decoupled payments have proven to be more efficient and effective in improving farm income and the environmental performance of agriculture, as well as

Figure 10. **Japan's farm work force is elderly**

The age distribution of rice farmers in 2010



Source: Ministry of Agriculture, Forestry and Fisheries (2010).

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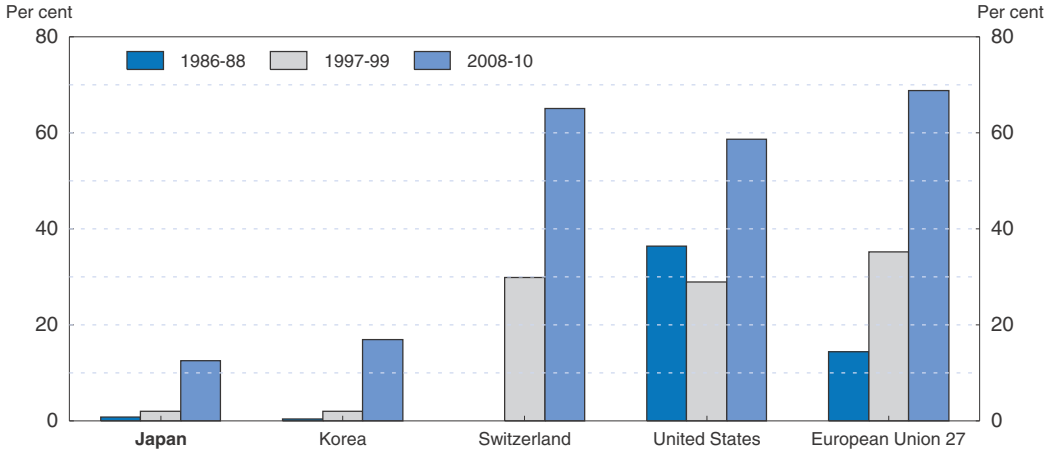
being more transparent. Moving away from market price supports would shift the burden from consumers to taxpayers, while lowering the overall cost of agricultural support according to an OECD study (OECD, 2009a).

- Farm consolidation needs to make progress, in line with the government's goal of having a majority of farms with 20-30 hectares in flat regions of Japan. Indeed, the government estimates that land productivity on rice farms of 10 to 15 hectares is double that on farms of 0.5 to 1 hectare, the current average. Land markets should become more dynamic, notably by lifting obstacles to land transactions for farming. The prohibition on non-agricultural corporations owning farmland should be abolished to leave open all options for attracting labour, capital and technology to agriculture, while ensuring that land-use

Figure 11. **The degree of decoupling in Japan is one of the lowest in the OECD**



Source: OECD (2012a).

How to read this figure: Decoupled support refers to assistance to farmers that does not influence agricultural production. A low level of decoupling means that agricultural policies have a large impact on production. Zero decoupling would mean that the production impact of agricultural policies is as if all support were provided through market price supports.

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regulation limits the shift of farmland to other uses. At the same time, taxation ought to be reformed so as to discourage the holding of idle agricultural land near urban areas.

These reforms are essential for significantly increasing Japan's integration in the world economy. The 2010 New Growth Strategy set an objective of doubling the cross-border flow of people, goods and capital into Japan by 2020 by reducing barriers. However, the 2010 *Basic Policy on Comprehensive Economic Partnerships* acknowledged that Japan is falling behind other countries in establishing high-level EPAs, as discussed in the chapter on the New Growth Strategy in the 2011 *OECD Economic Survey of Japan*. Moreover, the government set a target of lifting the share of Japan's trade covered by EPAs from 19% to 80% by 2020. Moving to a more market-based agricultural sector would allow Japan to reduce import protection. To achieve these goals, the government should step up its efforts to conclude EPA negotiations with Australia, launch negotiations with the European Union and achieve regional economic partnerships such as the China-Japan-Korea FTA and the Regional Comprehensive Economic Partnership. Reducing trade barriers would also promote foreign direct investment (FDI), given that openness to trade is positively correlated with the stock of FDI (2006 *OECD Economic Survey of Japan*). The stock of inward FDI in Japan was only 3.8% of GDP in 2011, the lowest in the OECD.

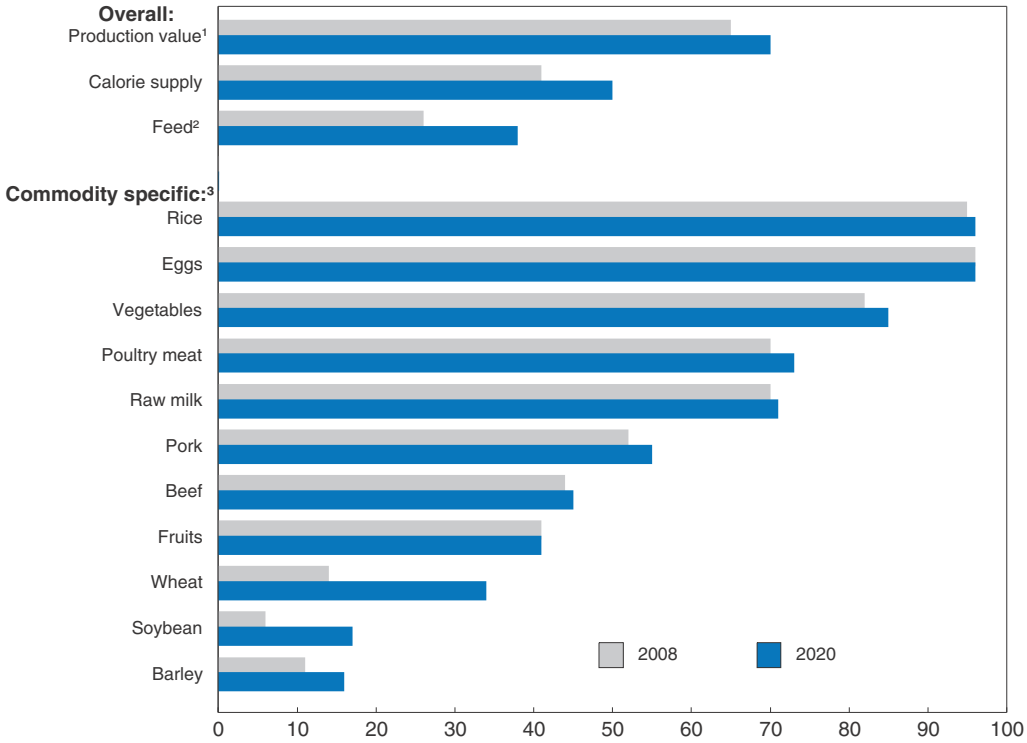
The *Basic Policy on Comprehensive Economic Partnerships* stresses the need to increase Japan's food self-sufficiency, while promoting high-level EPAs and the revitalisation of the agricultural sector. A more complete opening of the agricultural sector would tend to reduce food self-sufficiency, at least in the short run, in contrast with the government's goal of raising it from 41% in 2008 to 50% by 2020 in terms of calories consumed (Figure 12). The objective should instead be food security, which would best be achieved by a comprehensive strategy that includes a competitive, efficient farm sector, complemented by emergency reserves and agreements to promote stable trading arrangements, while preserving the agricultural resource base. Increasing the number and coverage of EPAs with food-exporting countries is one of the ways to stabilise and diversify food imports by establishing long-term relationships, thus reducing reliance on the more volatile spot markets.

Promoting green growth and restructuring the electricity sector

The 2011 disaster and nuclear problems opened the door to a new energy policy, as they raised fundamental questions about the electricity system's ability to prevent and respond to accidents. In particular, the system has had difficulty coping with the shortages caused by the accident and the suspension of operations of nuclear power plants. Electricity surpluses in some regions could not be transferred to areas with shortages due to inadequate interconnection facilities, reflecting a market structure dominated by ten regional, vertically-integrated monopolies that supply 92% of total electricity consumption. In addition, the absence of market mechanisms to modify supply and demand in line with current conditions forced the government to rely on inefficient policies, such as rolling blackouts and across-the-board cuts, to cope with shortages.

The weaknesses confronted since the disaster have long been apparent, prompting the government to introduce reforms since 1995. These were intended, in part, to reduce the price of electricity, which in the industrial sector is the second highest in the OECD area (Figure 13), thus reducing Japan's competitiveness. However, the impact of liberalisation has been limited thus far, as reflected in the continued dominance of the regional monopolies.

Figure 12. **Japan's targets for food self-sufficiency in 2020**



1. Assuming that prices in 2020 remain unchanged at 2008 levels.
2. In terms of total digestible nutrients.
3. In terms of weight.

Source: Ministry of Agriculture, Forestry and Fisheries (2012b).

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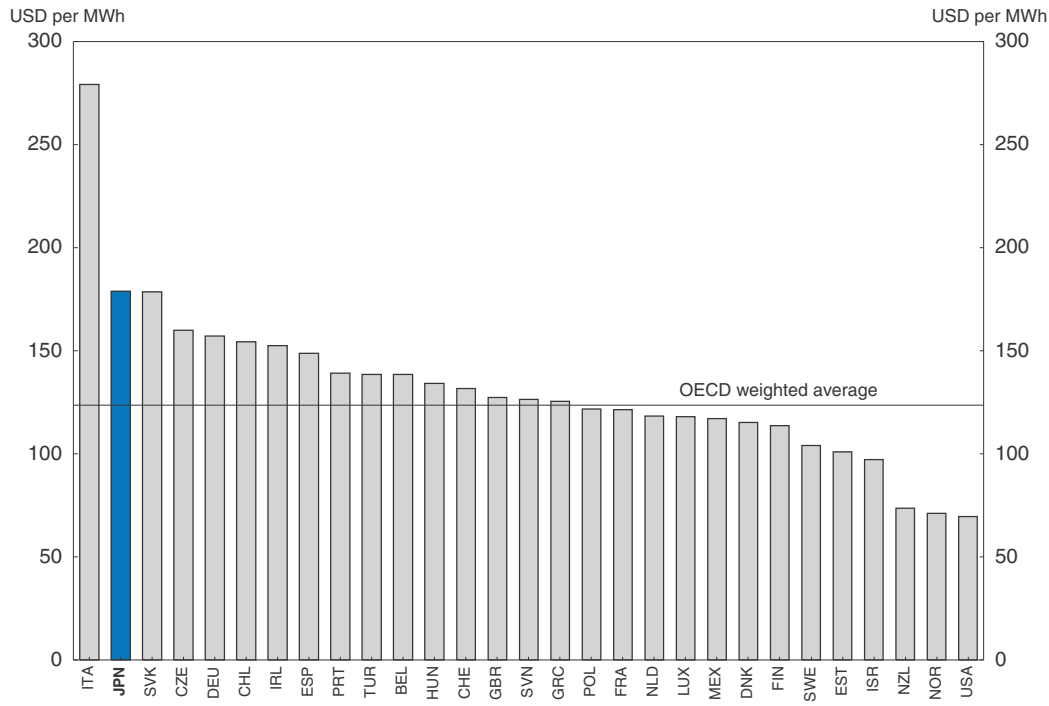
Promoting green growth by increasing the size of the renewables market

The Fukushima accident undermined public confidence in nuclear safety and the long-term energy strategy, which had envisaged an increase in nuclear power to 50% of electricity generation in the 2030s. The suspension of operation of nuclear power plants has been offset thus far by increased use of thermal plants and energy conservation. In September 2012, the previous government announced a plan to launch a green energy revolution, consistent with a phasing-out of nuclear power by the 2030s (NPU, 2012a). However, such a policy would impose heavy burden on consumers. For example, four studies published by the National Policy Unit projected that household electricity prices would rise by 90% to 110% if nuclear power were completely replaced by renewables, although 10% to 65% of the impact on households' electricity bills would be offset by reduced consumption.

A green energy revolution would promote green growth via investment and employment in renewables. Due in part to Japan's highly segmented market, renewable energy has played a small role in Japan, accounting for only 2.8% of electricity (excluding hydro), only half of the OECD average of 6.3%. Moreover, the share of renewable energy increased by only 1.4 percentage points in Japan between 1990 and 2011, compared to the OECD average of 4.5 points, despite the introduction of a Renewable Portfolio Standard (RPS) in 2003. In 2012, the RPS was replaced by a feed-in-tariff programme, which allows producers of electricity from renewable resources to sell electricity at a fixed long-term price guaranteed by the government. In the long run, pricing carbon through a carbon tax

Figure 13. **Japan's electricity price in the industrial sector was one of the highest in the OECD in 2011**

Price in 2011 converted to US dollars using market exchange rates



Source: OECD/IEA, *Energy Prices and Taxes 2012*.

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in combination with an emissions trading system is the key to promoting the use of renewables (see the chapter on green growth in the 2009 *OECD Economic Survey of Japan*).

Energy conservation should also be part of the strategy to cope with reduced output from nuclear power in Japan, which has achieved a high level of energy efficiency. In 2011, energy intensity in Japan (measured as energy inputs per unit of GDP) was the ninth lowest among OECD countries and less than two-thirds of the average of OECD countries. In 2012, the previous government set goals of reducing electricity use by 10% from its 2010 level by 2030 and total energy use by 19%. In addition to promoting renewables, a strong and consistent carbon price would also promote energy conservation. For example, a study by the National Institute for Environmental Studies estimated that doubling household electricity charges would reduce consumption by 30% (NPU, 2012b). In addition to a carbon price, specific measures to increase energy efficiency in the transport and building sectors are important.

Promoting green growth and conservation requires a clear long-run policy commitment that encourages private investment (Jones and Yoo, 2012). The lack of any legal framework or commitment to increase the share of renewables in Japan creates uncertainty that may hinder private-sector involvement. The uncertainty is heightened by the opposition to phasing out nuclear power, particularly by the business sector, as it may further increase electricity prices.

A more market-oriented electricity sector

The disaster also revealed the shortcomings of the electric power system. To create a more market-oriented system, the liberalisation process, which stopped in 2005, should be

resumed. The 2012 government reform programme includes measures to activate the wholesale market, which remains insignificant as the regional monopolies have little incentive to purchase or sell electricity in the wholesale market to independent "power producers and suppliers" (PPS), who have a market share of less than 3%. In particular, the transmission charge imposed on the PPS by the regional monopolies prevents some potential competitors from joining the market, even though the charge is regulated by the government. Japan introduced accounting unbundling in 2003 to boost competition (see the competition chapter in the 2004 *OECD Economic Survey of Japan*). However, it has been ineffective as generation, transmission and retailing remain in the hands of the vertically-integrated monopolies, allowing them to use cross-subsidisation to discourage entry by potential competitors (IEA, 2008). To counter such behaviour, the government has proposed "legal" or "management" unbundling. However, this may not be enough. A better approach to enhance competition would be ownership unbundling to separate generation and transmission and eliminate any incentives for cross-subsidisation.

In addition to ownership unbundling, other policies are needed to enlarge the wholesale market by boosting the number of participants. Expanding interconnection capacity between regions would help bring in more players, while at the same time improving the capability to cope with electricity supply disruptions in certain regions by utilising surpluses in other areas. Furthermore, price flexibility is important (IEA, 2005). Japan should introduce real-time pricing to allow prices to change flexibly in line with the market situation.

Finally, it is crucial to establish independent regulators that are separate from government ministries. Regulatory failure has been identified as a factor in the nuclear accident in 2011, as the Nuclear Industry Safety Agency (NISA) was subordinate to the Ministry of Economy, Trade and Industry (METI), which promoted the nuclear industry. NISA was separated from METI and incorporated in a new Nuclear Regulatory Authority (NRA) under the Ministry of the Environment in 2012. In addition, the law clearly stipulates that the Minister does not have the authority to supervise the NRA's regulatory activities in order to assure its independence. Establishing an independent regulator for electricity would help overcome the vested interests of the regional monopolies and promote a competitive market open to new entrants.

Box 2. **Summary of recommendations to use reconstruction to revitalise Japan**

Reforming agriculture and promoting Japan's integration in the world economy

- End the production adjustment programmes over a fixed and relatively short time period to allow farmers to decide how much and where to produce, thus allowing efficient farmers to increase production, while reducing production costs.
- Provide temporary support payments to large farmers to compensate for the fall in rice prices resulting from the phasing out of the production adjustment programmes.
- Shift from market price supports to decoupled payments targeted to key policy objectives, thereby reducing the overall cost of agricultural policies and shifting the burden from consumers to taxpayers.
- Promote the consolidation of farmland so as to cut production costs by lifting obstacles to land transactions.

Box 2. **Summary of recommendations to use reconstruction to revitalise Japan** *(cont.)*

- Remove border measures on agricultural products as agricultural reform advances, thus accelerating Japan's participation in comprehensive regional and bilateral trade agreements and encouraging inflows of FDI.
- Ensure food security supply through a more competitive and diversified agricultural sector, stable imports from a diversified group of countries, emergency reserves and conservation of the agricultural resource base.

Promoting green growth and restructuring the electricity sector

- Promote an increased role for renewables through the feed-in-tariff system to provide appropriate incentives, while ensuring a strong and consistent price on carbon through a carbon tax in combination with an emissions trading system.
- Introduce ownership unbundling to create a level playing field between regional monopolies and new entrants.
- Expand interconnections and introduce real-time pricing to promote a competitive, nationwide electricity market.
- Ensure the independence of the new Nuclear Regulatory Agency and create an independent regulator for the electricity sector to promote competition.

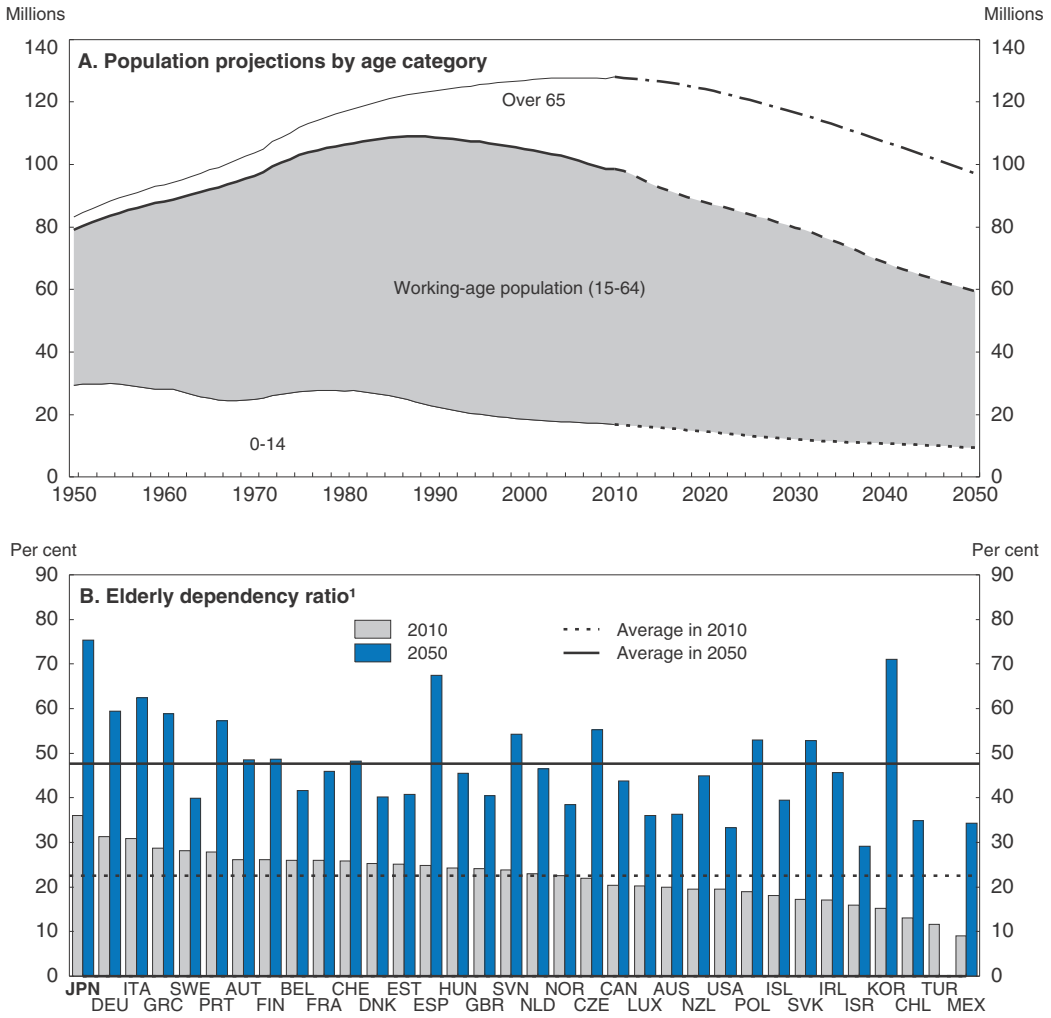
Other policies to promote growth: Raising labour force participation and improving education

In addition to the reconstruction-related reforms discussed above, measures to boost labour force participation and to improve education are needed to sustain growth in the face of rapid population ageing. The working-age population is projected to fall by nearly 40% by 2050 (Figure 14), and Japan's elderly dependency ratio will remain the highest in the OECD area through 2050 (Panel B). The ratio of working-age persons to the elderly will plummet from 2.8 in 2009 to 1.3 in 2050. Easing controls on immigration, in line with the objective in the *Strategy to Revitalise Japan* to double the number of high-skilled foreigners in Japan by 2020, would help promote economic growth. Promoting the entry of foreign workers would also help mitigate the demographic adjustment. The priority, though, is to boost labour participation by making the most of Japan's human resources, including women, older persons and youth. Achieving the 2% real growth target set by the *Strategy* also requires boosting labour productivity, which was 25% below the top half of OECD countries in 2011 (OECD, 2013). To narrow the gap, Japan needs structural reforms, particularly in services (see the chapter on services in the 2008 *OECD Economic Survey of Japan*) and to improve the education system while increasing its contribution to innovation.

Increasing the labour force participation rate

The participation rate of prime-age women (between 25 and 54) rose from 65% in 1994 to 72% in 2010. Nevertheless, it was still the fifth lowest in the OECD area, as around 60% of female workers still withdraw from the labour force when their first child is born (see the labour chapter in the 2011 *OECD Economic Survey of Japan*). This results in an M-shaped pattern of female labour participation by age group, although it has become flatter since 1994. However, the increase in participation has been driven by a rising number of non-

Figure 14. **Japan's population, already the oldest in the OECD, is ageing rapidly**



1. The over-65 population as a share of the working-age (15 to 64) population.

Source: National Institute of Population and Social Security Research, *Population Projection for Japan* (2012 version), and *OECD Demography and Population Database*.

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regular workers, suggesting a relatively tenuous connection to the labour market. The government should address the factors discouraging female labour participation by:

- Enhancing the availability of affordable and high-quality childcare.
- Reforming the tax and benefit system to remove disincentives to work for secondary earners.
- Improving work-life balance, notably by reducing long working hours and increasing working-time flexibility, in part by better enforcing the Childcare and Family Care Leave Law.
- Breaking down labour market dualism. Women employed as regular workers prior to leaving careers for children are likely to end up as non-regular workers, making employment less attractive (see below).

The employment rate for the 60-to-64 age group rose from 53% in 2006 to 57% in 2010, although most firms set mandatory retirement at age 60. Mandatory retirement is a key element of traditional Japanese labour practices, given that the steep seniority-based wage profile makes older workers expensive. Mandatory retirement also enables firms to dismiss unproductive regular workers in the context of high employment protection. The government has introduced measures to encourage workers to remain longer at firms, including a 2013 law requiring that firms keep all workers who wish to work until 65, although this increases the risk attached to hiring regular workers, thereby encouraging non-regular employment. Instead, Japan should move toward a more flexible employment and wage system that is based more on ability rather than age to encourage productive workers to remain employed. The policy priority is to abolish the right of firms to set a mandatory retirement age at 60, which would help to weaken the link between seniority and wages.

Japanese youth have been hit by the deterioration in the labour market during the past 15 years, which has reduced the share of new graduates hired. Consequently, a rising share of youth is employed as non-regular workers, unemployed or out of the labour force. Indeed, the participation rate for youth (aged 15 to 24) was 42% in 2011, compared with an OECD average of 47% (OECD, 2012g). At the same time, the share of firms that have hired non-regular workers due to difficulty in finding regular workers rose from 11.6% in 1999 to 17.8% in 2010, suggesting a problem of mismatch, which should be addressed through better vocational education and by creating qualifications that are recognised by firms (see the labour chapter in the 2011 *OECD Economic Survey of Japan*).

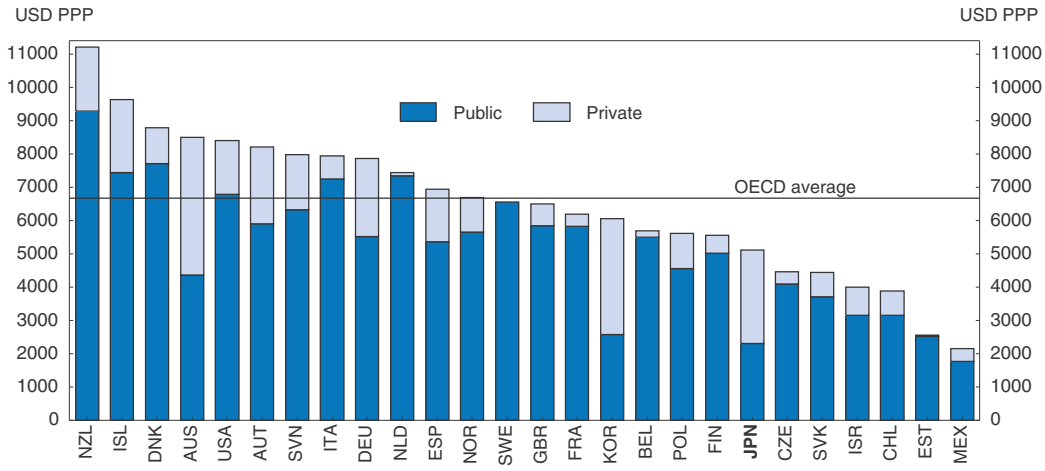
It is also important to expand vocational training, which plays a relatively small role in Japan, given the emphasis on firm-based training. Indeed, public spending on training in Japan was only 0.3% of GDP in 2010, less than half of the OECD average of 0.7% (OECD, 2012g). Programmes included in the Job Card initiative should be expanded, conditional on their success in improving participants' employment outcomes. Finally, it is important to address labour market dualism which, as in other OECD countries, hinders the integration of youth in the labour market.

Upgrading the education system to increase human capital

Japan is a top performer in education, as discussed in the education chapter of the 2011 *OECD Economic Survey of Japan*. The quality, as reflected in the OECD's PISA assessment of 15-year-olds, is one of the highest in the OECD, while the share of the adult population that has completed tertiary education is the second highest at 43%. Nevertheless, educational outcomes, which play a key role in productivity growth, could be improved by greater public investment in pre-primary education, which was the second lowest in the OECD in 2009 (Figure 15). Integrating childcare and kindergarten would improve the quality of education in childcare, while allowing cost savings by merging the two parallel systems. Allowing a greater role for private institutions, which are subject to controls, including price ceilings, would help reduce the childcare shortage. In the longer term, Japan should move toward a voucher system that encourages suppliers to compete in providing the services demanded by parents. At the primary and secondary levels, granting more autonomy to schools and expanding the scope for school choice by students would encourage schools to excel.

In contrast to secondary schools, universities in Japan do not stand out in international comparisons, suggesting scope to improve quality. Restructuring in the face

Figure 15. **Spending per student on pre-primary education was low in Japan in 2009**



Note: The bars show public (bottom part) and private (top part) education spending in US dollars, adjusted for price level differences across countries, for children too young for primary school. Annual spending is based on the number of students, calculated on a full-time basis.
Source: OECD (2012f), *Education at a Glance 2012*.

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of the shrinking number of high school graduates should be driven by increased transparency about the quality of tertiary institutions, including the labour market outcomes of their graduates, to strengthen competition and upgrade performance. Stepping up the internationalisation of universities, which have a relatively small share of foreign students, could also help boost performance, as would attracting leading foreign tertiary institutions to Japan. The share of foreign students in Japan amounted to only 3.2% in 2008, far below the OECD average of 8.5%, and very few foreign higher education institutions operate in Japan.

R&D spending in Japan was the fifth highest in the OECD area, at 3.3% of GDP in 2010. However, the university sector, which employs a majority of PhDs in the natural sciences, plays a limited role, accounting for only 5.7% of R&D spending and performing 12.9% of R&D (Table 5). The wide gap reflects the large share of financing from the government for university-based R&D (53.6%). However, only 2.6% of the R&D performed at universities was financed by firms (Panel B), reflecting weak linkages between universities and the business sector. Increasing the quality of universities and promoting greater co-operation with firms would help accelerate innovation and growth. Universities apply for patents for only 24% of their technologies, compared to 51% in the United States and 61% in Europe (see the education chapter in the 2011 *OECD Economic Survey of Japan*). The role of universities could be strengthened by enhancing the mobility of researchers between universities, firms and government research institutes and raising the share of government R&D funding for universities that is competitively financed.

Table 5. **Flows of R&D funds in 2010**

A. R&D funding

		Allocation of R&D spending by sector performing it			
	Share of total R&D spending	Government	Universities	Business enterprises	Total
Government[1]	18.0	56.3	38.4	5.3	100.0
Universities	5.7	0.4	99.4	0.2	100.0
Business enterprises	75.9	0.6	0.4	99.0	100.0
Foreign sources	0.4	4.6	1.8	93.6	100.0

B. Sector performing R&D

		Funding source for R&D performed				
	Share of total R&D performed	Government	Universities	Business enterprises	Foreign sources	Total
Government[1]	10.6	95.3	0.2	4.2	0.2	100.0
Universities	12.9	53.6	43.7	2.6	0.1	100.0
Business enterprises	76.5	1.2	0.0	98.2	0.5	100.0

1. Includes private non-profit institutes.

Source: OECD R&D Statistics Database.

Box 3. **Summary of recommendations to boost labour participation and improve the education system**

Encouraging labour market participation of women, the elderly and youth

- Reform aspects of the tax and social security system that reduce work incentives for secondary earners.
- Increase the availability of affordable, high-quality childcare and encourage better work-life balance, in part by reducing working hours and enforcing the Childcare and Family Care Leave Law.
- Reduce labour market dualism, which makes employment less attractive, particularly to women and youth, through a comprehensive strategy that includes upgrading training programmes, increasing the social insurance coverage of non-regular workers and reducing effective employment protection for regular workers.
- Encourage greater use of flexible employment and wage systems to improve working conditions for older workers, in part by abolishing the right of firms to set mandatory retirement at age 60.
- Emphasise practical training, combining on-the-job and classroom learning, in part through expanding the Job Card system, to equip youth with the skills needed in the labour market.
- Improve vocational education, in part by creating a standard qualifications system that is recognised by firms.

Improving educational outcomes

- Invest more in early childhood education and care to expand quality and integrate childcare and kindergarten.
- Expand the autonomy of primary and secondary schools and increase school choice to encourage schools to excel.

Box 3. **Summary of recommendations to boost labour participation and improve the education system** *(cont.)*

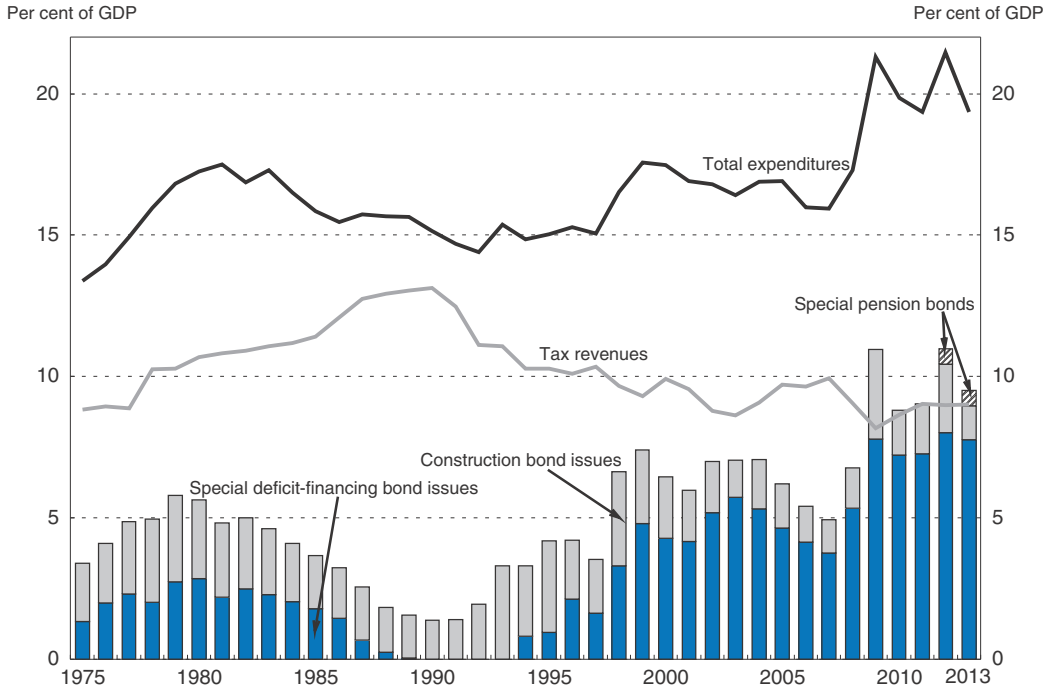
- Improve the quality of the tertiary sector by increasing transparency about performance to strengthen competition.
- Promote the internationalisation of the tertiary sector by increasing the number of foreign students and encouraging the establishment of more foreign tertiary institutions in Japan.
- Enhance the role of the tertiary sector in innovation, in part through greater co-operation between universities and the business sector, including enhanced labour mobility of researchers.

Restoring Japan's fiscal sustainability

The three-pronged strategy to achieve robust nominal income growth through inflation and reforms to boost real growth is essential to address Japan's fiscal predicament, which has reached a critical point after two decades of budget deficits. For the central government, borrowing exceeded tax revenue in FY 2009-10 and again in the FY 2012 initial budget (Figure 16). In the initial budget for FY 2013, tax revenue exceeds borrowing if special pension bonds are excluded. On a general government basis, the

Figure 16. **The gap between central government expenditure and tax revenue is widening**

Central government general account as per cent of GDP[1]



1. The final outcome for FY 1975-2011, the revised budget for FY 2012 (including the government's contribution to the basic pension system and the special pension bonds to finance it), and the initial FY 2013 budget. Reconstruction spending and bond issuance are excluded for FY 2011-13.

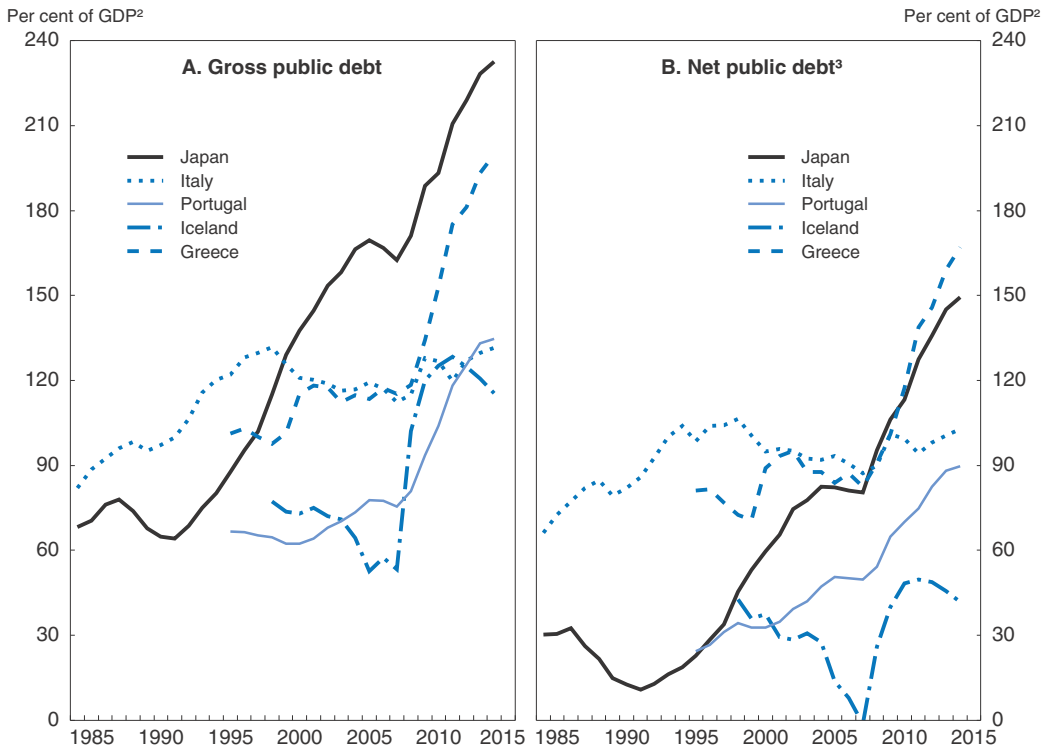
Source: Ministry of Finance and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932797727

budget deficit (excluding one-off factors) is projected to remain at around 10% of GDP in 2012 and 2013.

For more than 20 years, the net and gross debt-to-GDP ratios have risen almost without interruption. Gross public debt is projected to rise further into uncharted territory, to around 230% of GDP by 2014 (Figure 17). Likewise, net public debt has increased sharply, and is now the second highest in the OECD after Greece (Panel B). The impact of such high debt on government interest payments has been mitigated thus far by exceptionally low interest rates, currently at less than 1%. A number of factors have kept interest rates low, including persistent deflation, the risk aversion of investors after a prolonged period of sluggish economic growth, the "home bias" that keeps savings in Japan, and ample household financial assets. The central bank has increased its holdings of government bonds to 11.6% of the outstanding stock. Commercial banks hold 38.2%, making them vulnerable to a rise in interest rates.

Figure 17. **Public debt in selected OECD countries**[1]



1. The five countries with the highest gross debt ratios (gross liabilities divided by GDP) in the OECD area in 2010.
2. OECD estimates for 2012 and projections for 2013-14.
3. Net debt is gross debt less financial assets held by the government.

Source: *OECD Economic Outlook*, No. 92 and revised OECD estimates and projections for Japan for 2012-14.

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However, the deflationary equilibrium – large government deficits financed at low rates by Japanese savers – will not last forever. The government estimates that the effective interest rate (interest payments divided by gross debt) on its bonds will rise to 2% by the end of the decade, but much larger increases are possible. A significant rise in the long-term interest rate would compound Japan's fiscal predicament and hurt the economy and the financial institutions holding government bonds.

The Fiscal Management Strategy

The immediate challenge is to reduce the budget deficit to forestall, or at least limit, any rise in the long-term interest rate. In the longer term, the debt-to-GDP ratio must be reduced. In 2010, Japan launched the Fiscal Management Strategy, which included numerical targets to enhance its credibility:

- *A short-term target*: Limiting new government bond issuance to the previous fiscal year, excluding reconstruction and special pension bonds. In practice, this has meant limiting issuance to the FY 2010 level of around 44 trillion yen (9% of GDP).
- *A medium-term target*: Reducing the primary budget deficit of central and local governments, which was 6.4% of GDP in FY 2010, by half by FY 2015. To meet the target, central government primary spending (*i.e.* not including interest and debt repayments), excluding reconstruction spending, was to be kept at the level of the previous fiscal year for the following three years.
- *A long-term target*: Achieving a primary budget surplus for central and local governments by FY 2020 and putting the public debt ratio on a downward trend from FY 2021.

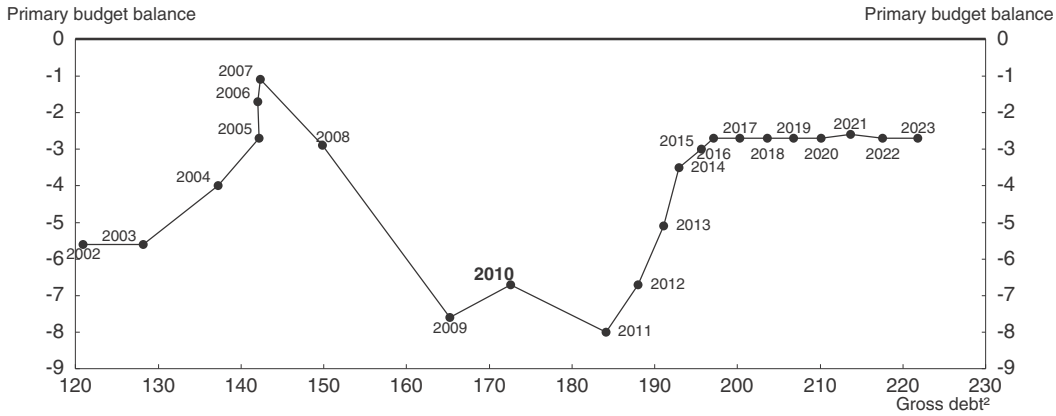
The Diet passed legislation in 2012 to raise the consumption tax rate in two stages, from 5% to 8% in April 2014, and to 10% in October 2015. Although the tax hike is conditional on "an improvement in economic conditions", which is to be assessed based on a range of factors, it is crucial that Japan follow through on the tax hike to maintain confidence in its public finances and achieve its FY 2015 target of halving the primary fiscal deficit. The doubling of the tax rate will generate revenue equivalent to almost 13.5 trillion yen (about 2.7% of projected GDP in 2015), of which about one-fifth will be used to improve the social security system through increased outlays for childcare, health care and pensions. The remainder is to be used to finance existing social outlays, thereby reducing the deficit. With the tax hike, Japan appeared to be on track to reduce the primary budget deficit to 3.2% of GDP by FY 2015, based on the government's long-term projection (Figure 18).

In January 2013, the new government announced a 10.3 trillion yen (2.2% of GDP) fiscal package that includes additional funds for the reconstruction of the Tohoku region and disaster prevention (3.8 trillion yen), social spending and regional revitalisation (3.1 trillion yen) and measures to promote industrial competitiveness and innovation (3.1 trillion yen). Financing the package will require around 5 trillion yen (1% of GDP) of additional bond issuance (Government of Japan, 2013). The economic impact of the package on growth will facilitate a decision to implement the consumption tax hike as planned.

Given signs of renewed growth in early 2013 (noted above), the fiscal stimulus package raises a number of concerns. *First*, with public works spending accounting for almost half of the fiscal package, there is concern that it will provide only a temporary boost to growth, while increasing government debt, although the package includes projects aimed at enhancing growth potential. Between 1990 and 2008, Japan introduced 15 fiscal stimulus packages containing public works spending, amounting cumulatively to 15% of 2011 GDP, without much positive impact on its growth potential (Brückner and Tuladhar, 2010). *Second*, the additional borrowing to finance the package requires breaking the 44 trillion yen ceiling on bond issuance and the 71 trillion yen ceiling on primary spending in FY 2012, adding to uncertainty as the new government prepares a new basic reform programme for economic and fiscal management for mid-2013 and raising risks of an adverse reaction in the government bond market. The government's decision in January 2013 that it will maintain the fiscal targets for FY 2015 and FY 2020 noted above is a positive sign. *Third*,

Figure 18. **The primary budget balance is projected to remain in deficit through 2023**

Central and local government in per cent of GDP[1]



1. Based on the government's prudent scenario of nominal GDP growth of 1½ per cent.
2. The definition of gross public debt in this figure consists of central and local government bonds and loans by the "Special Account for Local Allocation and Local Transfer Tax". It is thus less than the OECD figure, which is general government based on SNA93. The difference between the Cabinet Office and OECD figures is primarily due to short-term bonds, the social security fund's debt and other liabilities that are not accounted for by the Cabinet Office.

Source: Cabinet Office (2012).

How to read this figure: The vertical axis shows the central and local government primary deficit (that is, the difference between revenues and spending, excluding net interest payments on the public debt), divided by GDP. For example, in 2011, the primary deficit was 8% of GDP, and gross debt was 184%.

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even if the package in FY 2012 lifts growth, it further enlarges the primary deficit, thereby increasing the already-large amount of fiscal consolidation needed to achieve the FY 2015 primary deficit target of 3.2% of GDP. Past experience in OECD countries shows that even a short delay in consolidation increases the required tightening of the underlying primary balance to reach prudent debt levels (OECD, 2012c).

Even before the January 2013 fiscal package, Japan was not on track to achieve the target of a primary budget surplus in FY 2020. Instead, the deficit was projected to stabilise at around 3% in the government's "prudent growth" scenario, which assumed nominal GDP growth of 1½ per cent (Figure 18). Under this scenario, the public debt ratio was estimated to rise further to 261% of GDP on a general government basis (Table 6). A primary budget that is close to balance is unlikely to be sufficient to stabilise the debt ratio, let alone put it on a downward trend. Instead, this may require a primary surplus (on a general government basis) of almost 4% of GDP, given that public debt is projected to be 2.6 times GDP and assuming that the nominal interest rate is 1½ percentage points above the nominal growth rate, the average gap since 1980 and close to the 1.2 point gap in FY 2020 assumed in the government's long-term projection.

In this scenario, Japan would need additional fiscal consolidation of around 7% of GDP to stabilise the debt ratio by 2020, moving from the projected primary deficit of 3% of GDP to a primary surplus of almost 4%. However, the amount of fiscal consolidation that is needed and the level at which the debt ratio are stabilised are sensitive to nominal output growth (Table 6). Were nominal GDP to keep declining at the ¾ per cent annual rate of the past 10 years, the primary budget would have to improve by 7.5% of GDP (from a 3% of GDP deficit to a surplus of 4.5%) in 2020 (assuming that the gap between nominal growth and

Table 6. **An illustration of debt dynamics**

On a general government basis through 2020[1]

A. Level at which debt-to-GDP ratio is stabilised (% of GDP)[2]

Gap between interest rate and nominal growth[3]	**Nominal GDP growth rate** (per cent at annual average rate through 2020)				
	-0.75	**1.5**	**3.0**	**5.0**	**10.0**
0.0	284	248	227	202	153
1.5	298	**261**	239	213	161
3.0	314	274	251	224	169
4.5	330	288	264	235	178

B. Improvement in the primary budget surplus needed to stabilise the debt-to-GDP ratio (% of GDP)

Gap between interest rate and nominal growth[3]	**Nominal GDP growth rate** (per cent at annual average rate through 2020)				
	-0.75	**1.5**	**3.0**	**5.0**	**10.0**
0.0	3.0	3.0	3.0	3.0	3.0
1.5	7.5	**6.9**	6.6	6.2	5.4
3.0	12.4	11.2	10.5	9.7	8.1
4.5	17.9	16.0	14.9	13.6	11.0

1. General government (central and local government, plus social security) is the appropriate measure as it determines the evolution of government debt.
2. The calculations are anchored on the projection of a debt ratio of 230% of GDP in 2014 (*OECD Economic Outlook*, No. 92).
3. In percentage points in 2020. The average gap during the past 30 years was 1.5 points and the government projects a 1.2 point gap in 2020. The interest rate is the government's effective borrowing rate.

Source: OECD Economic Outlook Database and OECD calculations.

the interest rate remained at 1.5 percentage points). In this case, debt would stabilise at 298% of GDP. If nominal growth were 3% instead, an improvement of 6.6% in the primary balance would stabilise the debt ratio at 239% of GDP, illustrating the importance of higher nominal growth in reducing the amount of necessary fiscal consolidation and the level at which debt is stabilised. The gap between the interest rate and nominal growth is also crucial. For example, if the gap were to double to 3 percentage points, the required fiscal consolidation would be 10.5% of GDP, assuming 3% nominal growth.

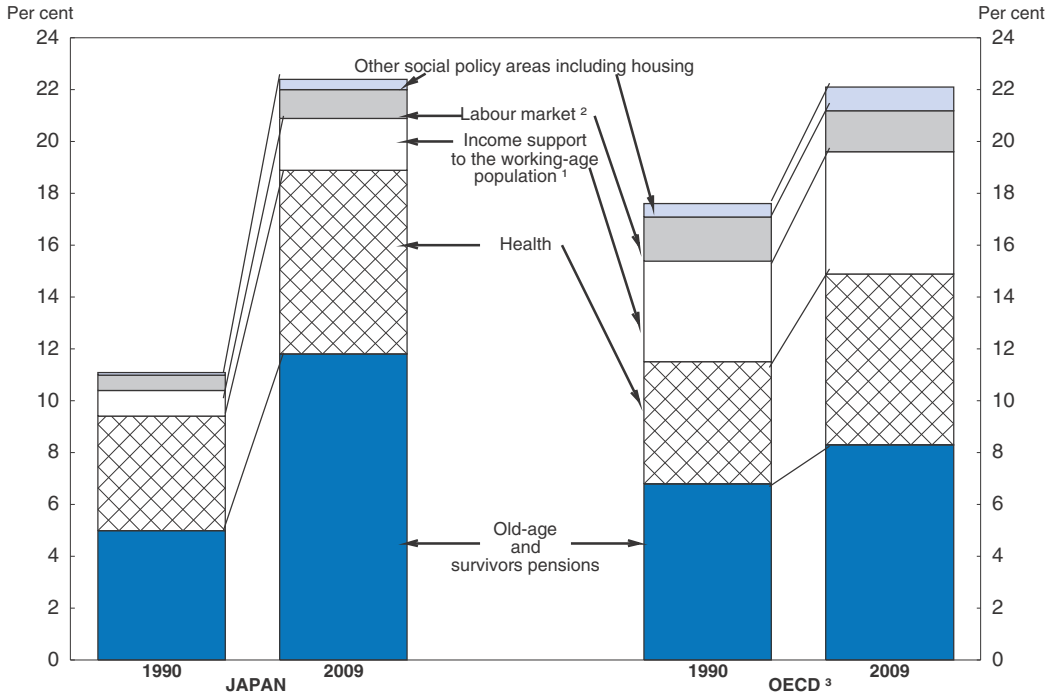
Sustaining fiscal consolidation to achieve Japan's long-term goals

The fiscal challenge is heightened by the continuing rise in social spending driven by population ageing and the new initiatives to be financed by the 2014-15 tax increase. Reforms to control social spending, which doubled from 11% of GDP in 1990 to 22% in 2009 (Figure 19), should focus on pension and health spending, which together accounted for 9 percentage points of the rise. The chapter on health care in the 2009 *OECD Economic Survey of Japan* identified a number of policies to contain spending:

- Promote the shift of long-term care away from hospitals toward more appropriate institutions using the fee schedule and closer monitoring of the classification of patients in hospitals.
- Improve the payment system by reforming the diagnosis procedure combination, which sets an overall fee based on the illness, so as to strengthen incentives for hospitals to increase efficiency.
- Expand the use of generic medicine by making it the standard for reimbursement.
- Introduce gatekeepers to reduce the number of unnecessary consultations with specialists.

Figure 19. **Public social spending has risen rapidly, driven by pensions and health care**

Each category of social spending is shown as a per cent of nominal GDP



1. Includes the spending categories "Incapacity related" and "Family".
2. Includes the spending categories of "Active labour market programmes" and "Unemployment".
3. Weighted average of 34 OECD countries.

Source: OECD Social Expenditure Database.

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Pension reform is also urgent, as the share of the population contributing to the mandatory basic pension continues to decline. The best option would be to raise the pension eligibility age, which would reduce the fiscal burden while increasing the labour participation of older persons (Sutherland *et al.*, 2012) and improving intergenerational equity. The hike in the pension eligibility age to 65 should be accelerated, followed by further increases achieved by linking it to longevity. Ensuring the sustainability of the pension system could also be achieved by reducing pension benefits and raising contributions. However, pension benefits are already low, with a replacement rate that is the fifth lowest in the OECD area (OECD, 2011d). Further reducing it would increase poverty among the elderly. As for the contribution rate, raising it beyond the 18.3% rate planned by 2018 could weaken work incentives.

Government spending in Japan, excluding social security outlays, was the fifth lowest in the OECD at 27% of GDP in 2010, compared to an OECD average of 33%, suggesting limited scope for major spending cuts. Consequently, revenue increases are inevitable to stabilise the debt ratio. Further hikes in the consumption tax, which is a value-added tax (VAT), should be the major source of additional revenue. A VAT is a relatively stable revenue source and is less harmful for economic growth, as it imposes fewer distortions on employment and investment (see the tax reform chapter in the 2008 *OECD Economic Survey of Japan*). Even with the hike to 10% in 2015, Japan's VAT rate would still be only about half of the OECD average of 19%.

Given that a one-point hike in the consumption tax rate generates revenue equivalent to about ½ per cent of GDP, achieving a 4% primary surplus entirely through the consumption tax would require boosting the rate to around the European average of 22%. To moderate the impact on growth, a smooth pattern of hikes is preferable. Moreover, it is important to maintain a single rate, relying on other policies to address the equity implications of a higher VAT (see below). A multiple-rate VAT would be less effective in reducing the regressive impact and would require a higher standard rate. Moreover, it would introduce a number of problems: *i)* higher administrative and compliance costs; *ii)* opportunities for fraud; and *iii)* distortions in consumption decisions. In addition to the consumption tax, environmental taxes, which are relatively low in Japan, would be a good source of revenue, as they would also help achieve environmental objectives, such as cutting greenhouse gases and pollution, while promoting green growth. Finally, there is scope to broaden direct tax bases, which are too narrow, by limiting tax allowances and exemptions. This would boost revenue from personal and corporate income tax from its current level of around 8% of GDP toward the OECD average of 11%.

Improving the fiscal policy framework

Given the unprecedented size of its debt ratio and the risk of higher interest rates, Japan needs a detailed and credible medium-term plan of spending cuts and tax increases, accompanied by improvements in the fiscal policy framework (as discussed in the fiscal chapter in the 2011 *OECD Economic Survey of Japan*). The establishment of independent fiscal councils in many OECD countries in recent years has helped to improve fiscal policymaking (OECD, 2012b). The resurrection by the new government of Japan's Council on Economic and Fiscal Policy (CEFP), which played an important role in past consolidation efforts, could be an important step in this regard. The CEFP, which includes four private-sector members in addition to economic ministers and the Bank of Japan governor, will prepare the new government's *Basic Policy for Economic and Fiscal Management* by mid-2013. A strong role for the private-sector members may compensate for the absence of an independent fiscal council, enabling it to play a useful role in evaluating progress in fiscal consolidation and helping to strengthen confidence in Japan's fiscal position. In addition, budget procedures should be improved through a multi-year budgeting plan, while fiscal targets need a stronger legal foundation to strengthen their credibility.

Box 4. **Summary of recommendations to restore fiscal sustainability**

- Target a primary budget surplus large enough to stabilise the debt ratio by 2020 and set out a detailed and credible plan, including spending goals by category and a timetable for tax hikes, to reach the target, thereby maintaining confidence in the fiscal situation and preventing a run-up in interest rates.
- Implement the government's plan to double the consumption tax rate in two stages to 10% by 2015.
- Maintain a single rate for the consumption tax to avoid the distortions associated with multiple rates.
- Reform social security programmes, particularly in health and long-term care, to limit spending pressures.

Box 4. **Summary of recommendations to restore fiscal sustainability** *(cont.)*

- Enhance the sustainability of the public pension programme by accelerating the rise in the pension eligibility age and then linking it to longevity.
- Rely primarily on the consumption tax and other indirect taxes, such as environment-related levies, as well as the broadening of income tax bases, to boost government revenue.
- Improve the fiscal policy framework through a multi-year budgeting plan and a stronger legal basis for fiscal targets, while using the Council on Economic and Fiscal Policy to guide the fiscal consolidation.

Promoting social cohesion

Fiscal consolidation needs to take into account the social impact. As in most OECD countries, income inequality and relative poverty have risen in recent years in Japan, reflecting structural changes, such as technological progress, resulting in widening wage dispersion (OECD, 2011a), and the increase in single-person households. In Japan, three other factors are especially important: *i)* the redistributive impact of the tax and benefit systems in offsetting inequality has been weak; *ii)* Japan's dualistic labour market increases wage dispersion; and *iii)* the education system relies heavily on private spending, resulting in inequality in educational outcomes. The associated social problems show up in quality-of-life indicators.

Strengthening the redistributive impact of Japan's tax and benefit systems

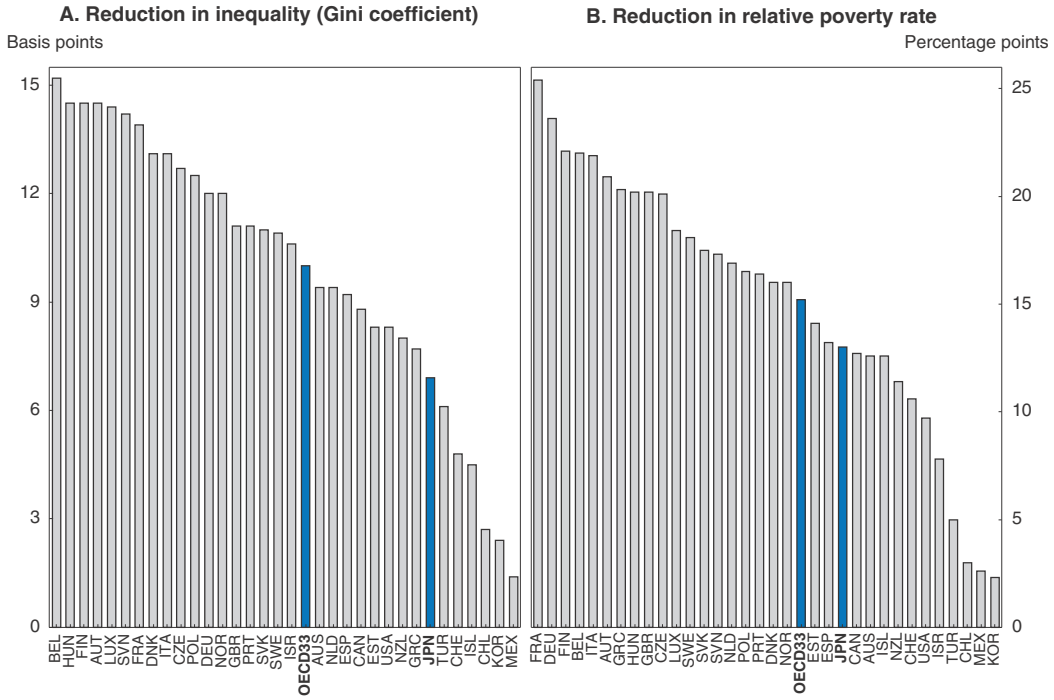
Japan is one of only two OECD countries, along with Israel, where the lowest income decile has suffered an absolute decline in their real income since the mid-1980s, thus boosting income inequality. Japan's tax and benefit systems reduced income inequality, as measured by the Gini coefficient, by only seven basis points (cutting the coefficient from 0.39 to 0.32) in 2008, the seventh-lowest reduction in the OECD (Figure 20), leaving Japan's Gini coefficient above the OECD average. Likewise, the impact of the tax and benefit systems on relative poverty, which was the sixth highest in the OECD, was relatively small. Japan is the only OECD country where the poverty rate for all working households and all households with children is higher after taking account of taxes and benefits. Moreover, the relative poverty rate for working single parents is the highest in the OECD at around 60%, resulting in a high incidence of child poverty and raising the risk of poverty being perpetuated across generations.

The net transfer to the lowest income quintile in Japan through cash benefits and taxes boosted their total income only 13% above their market income, the fifth lowest in the OECD area and less than a quarter of the average (Figure 21). The low level of transfers reflects two factors. *First*, while total public social spending matches the OECD average of 22% of GDP, spending on the working-age population (2% of GDP) is far below the OECD average (5%). Social spending in Japan is instead concentrated on pensions and health care, which are largely focused on the elderly (Figure 19). *Second*, the distribution of benefits and the tax burden is the least progressive in the OECD.

The government plans to increase the progressivity of the tax system by raising the top rates of the personal income tax and the inheritance tax, while reducing the basic deduction for the inheritance tax. However, given that cash transfers account for three-quarters of the reduction in income disparities in the OECD area, well-targeted social

Figure 20. **The impact of taxes and transfers on income inequality and poverty is weak in Japan**

Working-age population in the late 2000s



Source: OECD (2011a).

How to read this figure: The Gini coefficient is a measure of income inequality that ranges from 0 (all individuals have the same income, or complete equality) to 1 (one individual has all the income). The relative poverty rate is the percentage of households whose income is less than half median income. Panel A shows the reduction in income inequality, as measured by the Gini coefficient, due to taxes and transfers. Panel B shows the same for relative poverty. For Japan, taxes and transfers reduce the Gini by about seven basis points (cutting the coefficient from 0.39 to 0.32), and the relative poverty rate by about 13 percentage points.

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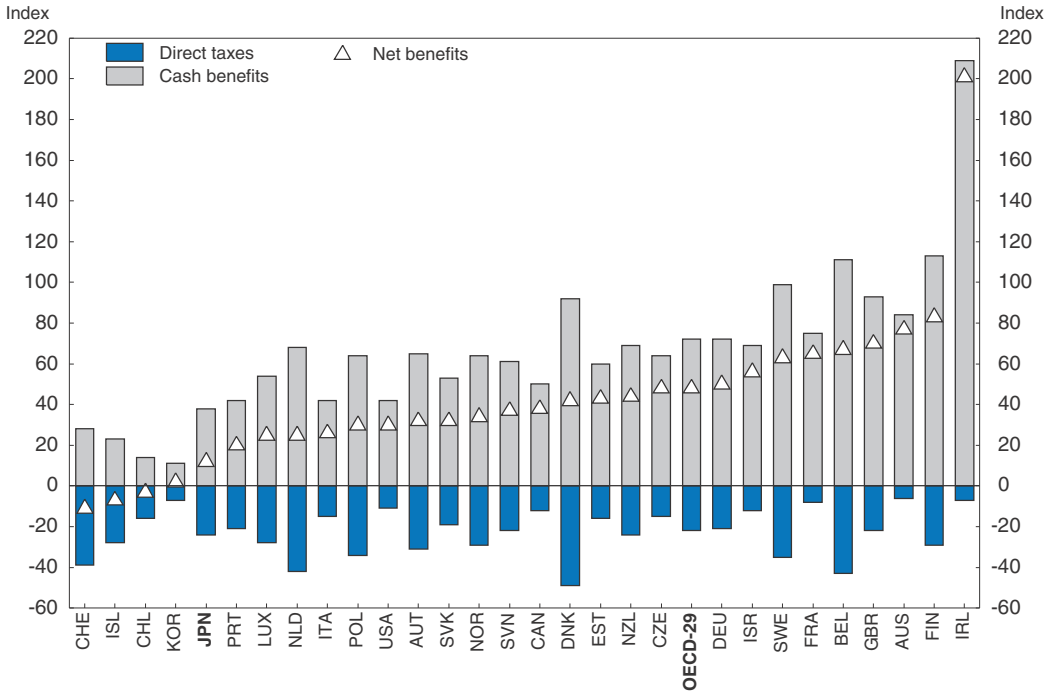
spending is essential to promote inclusive growth (Joumard and Pisu, 2012). Japan should carefully design such policies to avoid wasteful spending and negative incentives for work.

The number of recipients of the Basic Livelihood Protection Programme (BLPP), which provides cash and a package of in-kind benefits to those living under the absolute poverty line, reached a record high of 3% of the population in 2012, with benefits increasing to 0.8% of GDP in the FY 2012 budget. Still, it is important to ensure that eligibility requirements, notably the asset test and the presence of relatives capable of providing support, do not prevent the provision of assistance to those in need. The "Life Support Strategy" announced in 2012 correctly focuses on: *i*) strengthening job support for those capable of working but lacking vocational skills; *ii*) preventing the perpetuation of poverty through generations; and *iii*) promoting incentives to leave public assistance. It is important to co-ordinate the BLPP with the "second safety net" introduced in 2009 to provide income support primarily to former non-regular workers who are enrolled in training programmes but do not receive unemployment benefits.

The main priority is to introduce an earned income tax credit (EITC), which is likely to be effective in promoting work and assisting low-income persons in Japan, given its relatively wide earnings distribution, low taxes on labour and low benefits for the non-

Figure 21. **Assistance to low-income households is small in Japan**

Taxes paid by and benefits for the bottom 20% of households headed by working-age persons in the late 2000s[1]



1. Countries are ranked by the impact of the redistribution system on household income, *i.e.,* by net benefits (benefits minus taxes). For the three countries with negative net benefits, taxes exceed benefits.

Source: OECD (2011a).

How to read this figure: On the vertical axis, 100 represents the market income of the poorest 20% of households. The bars above the horizontal axis show cash benefits received by this group and the bottom bars the taxes they pay. The triangles are the top bar minus the bottom bar, or benefits less taxes. For three countries, taxes exceed benefits, so the triangle is below zero. For Japan, the triangle shows that net benefits (benefits minus taxes) amount to 13% of market income for the poorest 20% of households.

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employed (see the fiscal policy chapter in the 2011 *OECD Economic Survey of Japan*). In particular, an EITC would mitigate the regressive impact of the consumption tax hike. An EITC should be accompanied by effective labour market activation measures to help the unemployed find jobs that would allow them to receive the EITC and a single identification number for taxpayers and those contributing to social security to enhance transparency about income, particularly of the self-employed.

Breaking down labour market dualism

A recent OECD study concluded that structural reforms can also have an important influence on inequality outcomes, in particular through education and labour market policies (Koske *et al.*, 2012). Japan's labour market is segmented between regular and non-regular workers, primarily part-time, fixed-term and dispatched workers (*i.e.* workers sent from private employment agencies). The share of non-regular workers has nearly doubled since 1990 to 34% of total employment in 2012, as firms hire non-regular workers to achieve

greater employment flexibility and to reduce labour costs (see the labour market chapter in the 2011 *OECD Economic Survey of Japan*). However, it creates a number of equity concerns:

- *A significant wage gap*: Non-regular workers were paid only 60% as much per hour as regular workers (excluding bonus payments) in 2009. Even after adjusting for workers' type of job and educational attainment, the wage gap between full and part-time workers is 54.8% for men and 69.5% for women, making it a major cause of rising income inequality (Cabinet Office, 2009).
- *Less firm-based training*: The short tenure of non-regular workers reduces the incentive for firms to invest in training them, thus reducing their human capital accumulation and earning power. Only about a quarter of firms provided systematic on-the-job training to non-regular workers, less than half the proportion for regular workers.
- *Less coverage by the social safety net*: Around 35% of non-regular workers are not covered by employment insurance, even though they face precarious employment and consistently higher unemployment rates. Moreover, less than half of non-regular workers are covered by employee pension insurance.
- *Limited mobility between regular and non-regular employment*: Non-regular employment is not a pathway to regular employment, heightening concern about the equity impact of dualism. One study found that only about 10% of non-regular workers become regular workers.

Not surprisingly, the government's 2012 survey on well-being found that the happiness level reported by non-regular workers is below that of regular workers and the self-employed (ESRI, 2012).

Revisions to the labour law in 2012 introduced tighter restrictions on the use of non-regular workers. *First*, the dispatch of workers for employment lasting less than 31 days was prohibited and the dispatching agency must disclose the gap between the fees it receives and the wages paid to the workers. *Second*, workers on fixed-term contracts can become regular workers after five years in a firm. However, restrictions on non-regular workers tend to increase the costs of employment flexibility and lower overall employment, without addressing the fundamental causes of dualism. Moreover, further restricting the use of dispatched workers would promote the use of other types of non-regular workers, as occurred when restrictions on fixed-term contracts were introduced in Korea (OECD, 2012e). In Japan, further restricting the use of dispatched workers may increase the number of part-time employees, who on average receive lower wages and have less chance of achieving regular status. Instead, a comprehensive strategy aimed at reducing the factors that encourage firms to hire non-regular workers is needed, including increasing social insurance coverage and reducing effective employment protection for regular workers, while upgrading training programmes for non-regular workers.

Promoting social inclusion through the education system

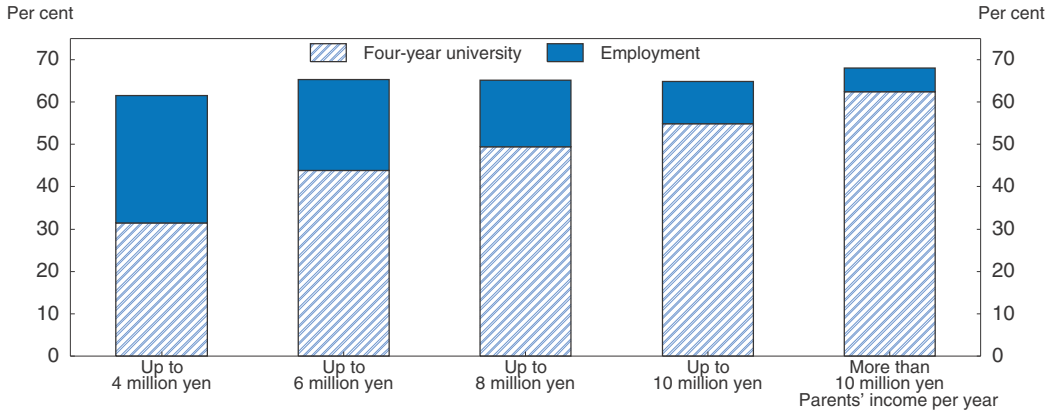
A number of education policy changes are needed to promote social cohesion, beginning with increased investment in early childhood education and care for children from disadvantaged families, who receive less intellectual development at home. A second concern is the heavy reliance on private, after-school tutoring, particularly in *juku*. Indeed, three-quarters of 15-year-olds participated in after-school lessons in math in Japan in 2009, the second-highest share after Korea, imposing heavy financial burdens on families. The average expenditure per student for after-school lessons more than doubled in real terms

between 1985 and 2007, reaching around 11% of per capita income (see the education chapter in the 2011 *OECD Economic Survey of Japan*).

Not surprisingly, family income is a key determinant of spending on *juku* (Oshio and Seno, 2007). Educational results, in turn, are positively related to spending on after-school lessons, making family income a key determinant of educational outcomes and admission to prestigious universities, which offer significantly higher returns. For high school graduates with parents earning less than 4 million yen per year, a third enter four-year universities and another third begin working (Figure 22). In households earning more than 10 million yen, almost two-thirds enter university, more than ten times more the share entering the labour market. University attendance, in turn, is a critical factor determining employment status (including regular or non-regular) and income.

Figure 22. **Family income plays a key role in determining students' path following high school graduation**

Per cent of high school graduates



Source: Ministry of Education, Culture, Sports, Science and Technology (2009).

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Policies to limit reliance on expensive, after-school lessons are thus a priority to reduce the importance of economic factors in determining students' educational performance. *First*, it is important to improve the performance of schools, given that parents cite low quality as a reason for sending their children to *juku*. *Second*, reducing the importance of multiple-choice exams – an area where *juku* are most effective for entrance to high school and university – would reduce their role. In any case, *juku* are likely to continue to play an important role, making it important to improve the access of low-income families to such opportunities by, for example, offering inexpensive after-school lessons in schools, as in Korea.

University tuition fees, which are the fifth highest in the OECD area, create concern about access for low-income students. Only about one-third of students received public loans in 2009, compared to more than three-quarters in a number of OECD countries with lower tuition fees. Japan should expand the loan system to complement its means-tested grant system.

Promoting well-being and social progress

There is growing recognition that GDP and other economic indicators alone cannot fully portray people's well-being, which depends on other factors, including security, leisure, income distribution and the environment. In the 11 dimensions identified as essential to well-being in the OECD Better Life Initiative, Japan ranked significantly above the OECD average in four (Figure 23):

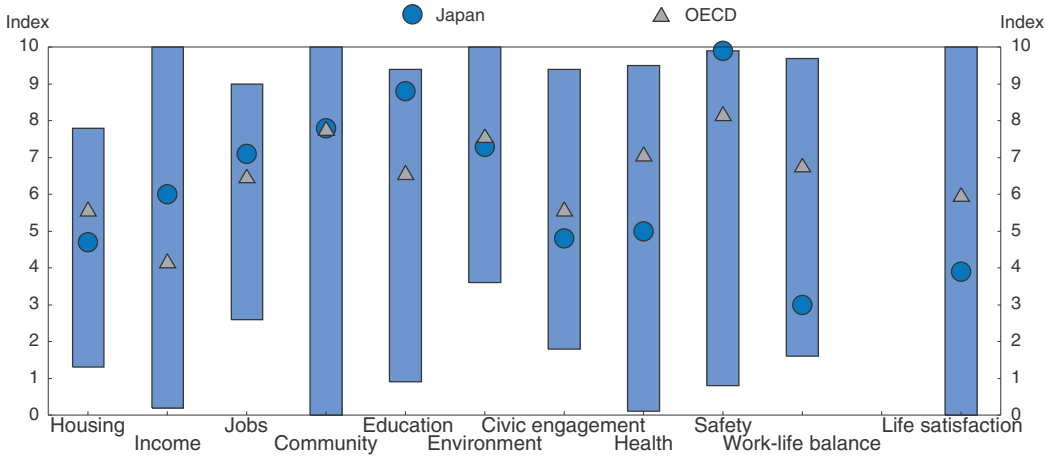
- *Income and wealth*: While per capita income is only slightly above the average, household financial wealth is the fourth highest in the OECD.
- *Jobs*: Japan has a relatively high employment rate and a low long-term unemployment rate.
- *Education*: Japan is near the top in the PISA assessment and in the share of adults with a university education.
- *Personal security*: The homicide and personal assault rates are among the lowest in the OECD.

However, Japan was lagging on other indicators, including:

- *Work-life balance*: Japan ranked 32nd among OECD countries, reflecting workplace practices, including long working hours, which also contribute to the very low fertility rate.
- *Health*: Despite Japan's life expectancy, the longest in the OECD, the self-evaluation of personal health status is low in Japan, which may reflect work-related stress stemming from the problems in work-life balance.
- *Housing*: Japan ranked 25th, with 77% of people reporting that they are satisfied with their current housing situation, compared to the OECD average of 87%.
- *Environment*: Japan ranked 23rd, reflecting concerns about air pollution.

Overall, only 40% of the Japanese said that they were satisfied with their life, well below the OECD average of 59% (Figure 23). This may point to genuine problems in Japanese society, or might instead reflect a cultural reluctance to report high scores. Further research

Figure 23. **How does life compare in Japan?**[1]



1. The rectangles represent the maximum and minimum scores of OECD countries.
Source: OECD (2011b).

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is needed in this area. Japan has put improving the quality of people's lives high on its political agenda, including the development of well-being measures in the New Growth Strategy. Around 130 indicators have been developed to assess well-being, focusing on economic and social conditions, physical and mental health, and social relatedness. Based on these indicators, the government conducted a survey in March 2012 (ESRI, 2012), with a second one planned in February 2013. The priority will be to link these indicators to government policies in order to improve people's lives and foster social progress.

Box 5. **Summary of recommendations to reduce income inequality and poverty**

- Enhance the redistributive power of the tax and benefit systems by increasing the share of net benefits received by low-income households.
- Introduce an earned income tax credit, initially for wage earners, while expanding it to the self-employed as transparency about their income is enhanced.
- Ensure adequate coverage of public assistance and co-ordinate the Basic Livelihood Protection Programme and the "second safety net".
- Provide training programmes for recipients of public assistance who are capable of working, while ensuring that there are incentives to leave assistance.
- Implement a comprehensive strategy to break down labour dualism, including increasing the social insurance coverage of non-regular workers and reducing effective employment protection for regular workers, while upgrading training programmes.
- Ensure access to high-quality early childhood education and care for children from low-income families.
- Reduce reliance on private, after-school lessons, particularly in *juku*, in part by increasing the quality of schools, and increase the accessibility of after-school lessons for students from low-income families.
- Expand public loans for tertiary education to encourage students from low-income households to invest in higher education.
- Build on the national surveys of well-being to identify the priorities and policies to improve well-being.

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ANNEX 1

Progress in structural reforms

A. Taking stock of structural reforms: Improving health care to limit costs and raise quality

Recommendations in the 2009 and 2011 OECD Economic Surveys of Japan	Actions taken or proposed by the authorities
Containing the growth of spending and financing it efficiently	
Promote the shift of long-term care away from hospitals toward more appropriate mechanisms using the fee schedule and closer monitoring of the classification of patients in hospitals.	The government failed to reach its target of increasing the number of beds in nursing homes by 160 thousand during 2009-11 despite changing the reimbursement of medical costs for long-term care patients in acute-care beds by basing it on their daily medical status.
Improve the payment system by reforming the Diagnosis Procedure Combination (DPC), extending its use more broadly and modifying the reimbursement for outpatient care to reduce the number of consultations.	The number of hospitals adopting the DPC system increased from 1 388 in 2010 to 1 505 in 2012.
Expand the use of generic medicine, for example by moving towards making them the srtandard for reimbursement.	In 2012, medical service fees were revised and prescription forms changed so as to promote the use of generics.
Use monetary incentives, notably higher tobacco taxes, to encourage healthy ageing.	The FY 2012 tax reform stated that the tobacco tax rate needs to be raised in the future but no action has been taken.
Introduce gatekeepers to reduce the number of unnecessary consultations with specialists.	No action taken.
Implement electronic billing to reduce administrative costs.	The adoption rate increased from 82.5% in July 2010 to 91.8% as of January 2013.
Consolidate health insurers to reduce administrative costs and increase quality, while strengthening effective competition for the Social Insurance Medical Fee Payment Fund.	No action taken.
Implement steps to collect and analyse hospital performance.	No action taken.
Relax the rules that prevent equity finance to facilitate the restructuring of the hospital sector.	No action taken.
Implement reform initiatives to address the fragmentation of insurers.	A 2012 law promotes each prefecture's management of the National Health Insurance in order to promote financial stabilisation and reduce disparities in insurance premiums.
Shift toward general tax revenue to finance health care for the elderly to avoid unduly increasing labour costs.	To curb the increase in premiums, the government raised its contribution to the Japan Health Insurance Association (mainly for SME employees) from FY 2010 to FY 2012 and plans to extend the measure for two more years. The planned increase in the consumption tax in FY 2015 will provide 1.6 trillion yen to strengthen medical and long-term care, in part by subsidising the insurance premiums of low-income earners.

Recommendations in the 2009 and 2011 OECD Economic Surveys of Japan	Actions taken or proposed by the authorities
Enhance the quality of health care	
Shorten the drug and medical device lag by reducing the cost of clinical trials in Japan, accepting more overseas results and ensuring that reimbursement levels are appropriate.	Of medical devices approved on the basis of clinical trials, the share of trials performed overseas increased from 62% in FY 2009 to 67% in FY 2011. Regarding drugs, the number of consultations of global clinical trials (a pre-clinical trial process that provides guidance and advice) levelled off in 2009-11 after increasing sharply in previous years.
Expand mixed billing to make treatments not yet covered by public health insurance more affordable, while addressing the inequality in premium payments in promoting equality.	No action taken.
Addressing the imbalances in the health-care system	
Set fees based on rigorous cost and productivity studies.	No action taken.
Reconsider wide usage of measures linking medical university education and the assignment of the working place of doctors.	The government has allowed medical universities to increase enrolments by 437 students in total since FY 2010 if they commit to working after graduation in specific regions.
Ensuring universal coverage in the context of rising relative poverty	
Improve compliance in paying premiums.	No action taken.
Ensure that low-income households – even those not qualifying for public assistance – receive health insurance benefits.	No action taken.

B. Taking stock of structural reforms: Improving policies to address climate change

Recommendations in the 2009 and 2011 OECD Economic Surveys of Japan	Actions taken or proposed by the authorities
Continue efforts to achieve a comprehensive, fair and effective international agreement for the post-Kyoto framework that includes all developed and major developing countries.	The new government has decided to review Japan's goal of reducing greenhouse gas emissions by the COP19 meeting in November 2013.
Price-based instruments	
Shift from voluntary measures to market-based instruments to achieve GHG emission reduction targets in a cost-effective way, and provide a clear price signal to encourage green investment.	No action taken.
Put a price on carbon emissions by introducing a mandatory and comprehensive cap-and-trade ETS to provide a clear signal to market participants to make appropriate investment decisions.	The trial ETS is still in operation.
Make greater use of environmentally-related taxes, particularly by introducing a carbon tax in areas not covered by the ETS.	The rate of the petroleum and coal tax is being increased in three stages by 2016 based on CO_2 emissions.
Use auctions to allocate the ETS permits and link Japan's ETS with those in other countries.	No action taken.
Expand the number and amount of projects in a streamlined and upscaled CDM with a high level of environmental integrity, while avoiding the diversion of ODA funds.	The total number of CDM projects approved by the government increased from 617 in March 2010 to 766 in December 2012.
Phase out inefficient fuel subsidies in line with the G20 initiative in order to ensure an appropriate price for carbon.	No action taken.
Non-price instruments	
Rely on performance-based regulation and, in areas where price instruments are ineffective, technology-based standards.	No action taken.
Improve energy efficiency policies, such as the Top Runner Programme, in the short run, while phasing them out as market-based instruments become effective.	No action taken.

Recommendations in the 2009 and 2011 OECD Economic Surveys of Japan	Actions taken or proposed by the authorities
Promote the innovation and diffusion of energy-saving and abatement technologies by supplementing private-sector R&D with public investment focused on infrastructure and basic research and by sharing the risk with the private sector.	No action taken.
Use transparent and efficient instruments to support the development of renewable energy in the short run, while relying on the pricing of GHG emissions in the long run.	The feed-in tariff system introduced for solar power in 2009 was extended to all renewable energy sources in July 2012.

C. Taking stock of structural reforms: Reforming the labour market

Recommendations in the 2011 OECD Survey of Japan	Actions taken or proposed by the authorities
Breaking down labour market dualism	
Expand the coverage of non-regular workers by workplace-based social insurance systems, notably by improving compliance, to reduce the cost advantages of non-regular workers and improve their security.	The government revised the law in 2012 to expand the coverage of the employee pension scheme for part-time workers in 2016.
Increase training and career consultation to enhance human capital and the employability of non-regular workers as well as to promote their transition to regular employment, thereby improving Japan's growth potential.	In FY 2011, around 51 thousand unemployed participated in the Support System for Job Seekers introduced in October 2011 to assist those who do not receive unemployment benefits. A FY 2012 law requires that fixed-term contracts renewed repeatedly be transformed into open-ended contracts once they reach five years if the employee requests it, although this may encourage firms to let them go rather than shift them to regular status.
Prevent discrimination against non-regular workers.	The FY 2012 revised Worker Dispatch Law requires the dispatching agency to disclose the gap between the fees it receives and the wages paid to the workers and, in deciding the wage of dispatched workers, to consider the balance with workers directly hired by the firms and engaged in the same type of work. Another FY 2012 law prohibits employers from hiring fixed-term workers on unreasonable terms.
Reduce the effective employment protection for regular workers so that firms can realise adequate employment flexibility without hiring increasing numbers of non-regular workers.	No action taken.
Be cautious in legally restricting the use of short-term dispatched workers as it may aggravate the cost of inflexibility and reduce overall employment.	The FY 2012 revised Worker Dispatch Law prohibits the dispatch of workers for employment lasting less than 31 days to promote their employment security and stability, although it may limit their employment opportunities.
Encouraging labour market participation of women, elderly and youth	
Reform aspects of the tax and social security system that reduce work incentives for secondary earners.	The government revised the law in 2012 to expand the coverage of the employee pension scheme for part-time workers in 2016.
Encourage better work-life balance, in part by better enforcing the Childcare and Family Care Leave Law.	The Childcare and Family Care Leave Law, which included the shortening of working hours for parents of young children and the establishment of family-care leave, was extended to employees in all firms in July 2012.
Increase the availability of affordable, high-quality childcare, while avoiding generous child-related transfers that may weaken work incentives.	The government plans to spend an additional 0.7 trillion yen, financed by the planned hike in the consumption tax rate, on ECEC. The FY 2012 law on ECEC promotes the establishment of certified childcare centres in large cities according to demand and provides financial support to various types of childcare.
Encourage greater use of flexible employment and wage systems to improve working conditions for older workers, in part by abolishing mandatory retirement at age 60.	A FY 2012 revision to the labour law requires firms to keep all workers who wish to work until 65, although this reduces flexibility. In addition, the government provides subsidies to firms that expand job opportunities for older workers.
Emphasise practical training, combining on-the-job and classroom learning, in part through expanding the Job Card system, to equip youth with the skills needed in the labour market.	"Employment-type" training, which consists of on-the-job and classroom learning, covered around 11 thousand participants in FY 2011, of which around 8 600 had found regular employment as of January 2012.
Promote the development of a standard system of recognition of acquired skills to ensure effective training.	No action taken.

D. Taking stock of structural reforms: Reforming the education system

Recommendations in the 2011 OECD Survey of Japan	Actions taken or proposed by the authorities
Improve educational outcomes	
Invest more in ECEC to expand quality and quantity.	The government plans to spend an additional 0.7 trillion yen, financed by the planned hike in the consumption tax rate, on ECEC.
Integrate childcare and kindergarten, as outlined in the New Growth Strategy, to enhance the quality of ECEC.	The FY 2012 law on ECEC promotes the establishment of "Centres for ECEC" (*Nintei Kodomo-en*), which provide kindergarten and childcare services, in part by streamlining supervision and financial support.
Expand the role of private providers of ECEC, in part by providing payments directly to families.	The FY 2012 law promotes the establishment of certified childcare centres in large cities according to demand and provides financial support to various types of childcare, such as small centres.
Effectively implement the planned increase in curriculum and school hours, while retaining the advantages of the *yutori* reform.	The government is providing assistance to develop the new courses of study.
Increase the autonomy of schools.	The government is providing guidelines to each board of education to increase the autonomy of schools.
Expand school choice to encourage schools to excel, while increasing information about performance.	The government is providing information to each board of education on experiences with school choice.
Increase transparency about performance, including labour market outcomes of graduates, to strengthen competition.	The 2012 "Action Plan for Higher Education Reform" aims at promoting university reform in part by further promoting disclosure, including information on class syllabi and enrolment.
Promote internationalisation by increasing the number of foreign students.	The 2012 "Action Plan for Higher Education Reform" aims at promoting internationalisation in part by increasing the number of classes taught in English.
Encourage the establishment of more foreign tertiary institutions in Japan.	The 2012 "Action Plan for Higher Education Reform" is encouraging co-operation with foreign institutions.
Increase value for money	
Reduce costs by integrating childcare and kindergarten.	The FY 2012 law on ECEC promotes the establishment of "Centres for ECEC (*Nintei Kodomo-en*)" in part by streamlining supervision and financial support.
Support an efficient framework to cope with school consolidation.	The government is providing information to each board of education on experiences with school consolidation.
Use teachers' time more effectively.	The government encourages local community members to participate in voluntary activities to support education, thus helping reduce the burden on teachers and allow more effective use of their time.
Facilitate the consolidation of the tertiary sector.	No action taken.
Liberalise restrictions, including those on tuition, student caps and programme changes, while assuring equity and quality.	The 2012 "Action Plan for Higher Education Reform" aims at promoting university reform in part by facilitating co-operation between universities on curriculum diversification.
Reduce burdens on household	
Raise the public share of spending on ECEC.	The government plans to spend an additional 0.7 trillion yen, financed by the planned hike in the consumption tax rate, on ECEC.
Reduce dependence on *juku*.	No action taken.
Lower the burden of out-of-school education by developing low-cost alternatives.	No action taken.
Expand public loans for tertiary education to cover a higher share of students.	Public loans increased from 1 trillion yen in FY 2010 to 1.1 trillion yen in FY 2012, covering almost all students who qualify.
Reverse the rising trend in inequality	
Invest more in ECEC to reduce the disadvantages of children from low-income families.	The government plans to spend an additional 0.7 trillion yen, financed by the planned hike in the consumption tax rate, on ECEC.
Reduce dependence on *juku*.	No action taken.
Make the benefits of *juku* more widely available and at lower cost, notably to students from low-income families.	No action taken.
Expand public loans for tertiary education to cover a higher share of students.	Public loans increased from 1 trillion yen in FY 2010 to 1.1 trillion yen in FY 2012, covering almost all students who qualify.
Make repayment of loans income-contingent.	Such a system was introduced in FY 2012.

Recommendations in the 2011 OECD Survey of Japan	Actions taken or proposed by the authorities
Enhance links between labour market and education	
Create vocational qualifications that are recognised by firms, as planned in the New Growth Strategy.	Vocational qualifications were introduced in new growth areas, such as nursing care, environment/energy and agriculture/fishery in FY 2012.
Expand the vocational training role of universities, which are educating an increasing share of young people.	The 2012 "Action Plan for Higher Education Reform" aims at promoting industry-academia co-operation to respond to labour market demands, in part by implementing graduate school programmes co-operatively with the business sector.
Expand the contribution of the tertiary sector to innovation	
Enhance co-operation between university research and industry.	The government is supporting such co-operation through a fund of 45 billion yen in FY 2012.
Increase public investment to create leading universities.	Public investment in programmes to create leading universities increased from 12 billion yen in FY 2011 to 21 billion yen in FY 2012.
Boost the share of public research funds for universities that is allocated competitively.	The 2012 "Action Plan for Higher Education Reform" aims at further allocating research funds on a competitive basis.

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Chapter 1

From tragedy to the revitalisation of Japan

The March 2011 Great East Japan Earthquake was the worst disaster in Japan's post-war history. Reconstruction from this tragedy highlights some of the structural reform challenges faced by Japan. Overcoming these challenges should lead to the revitalisation of the economy, in part by making the Tohoku region a model for Japanese agriculture, while restructuring the electricity sector. The high level and distortionary nature of agriculture support imposes burdens on consumers and taxpayers, undermines the dynamism of the farming sector and complicates Japan's participation in comprehensive bilateral and regional trade agreements that would boost its growth potential. The priority is to shift to measures decoupled from production and gradually reduce border measures. The reduced role of nuclear power following the Fukushima accident makes it necessary to accelerate the expansion of renewable energy, which requires setting a strong and consistent price for carbon. It also depends on creating a more competitive electricity sector by reducing the dominance of the ten regional monopolies through ownership unbundling of generation and transmission and expanding interconnection capacity, while introducing real-time pricing.

The Great East Japan Earthquake struck as Japan was pursuing efforts to raise its growth potential, notably through the New Growth Strategy launched in 2010 (see the chapter on the Strategy in the 2011 *OECD Economic Survey of Japan*). Faster growth is essential to raise living standards, address the rising public debt ratio and ensure the sustainability of the social security system in the face of population ageing in Japan, which already has the oldest population in the OECD area. The 2012 Strategy for the Rebirth of Japan retained the earlier Strategy's target of boosting Japan's potential growth rate from around ¾ per cent to 2% during the 2010s.

The March 2011 disaster has compounded the challenges facing Japan and highlighted a number of structural weaknesses. The Great East Japan Earthquake, the fifth strongest in recorded history (Table 1.1), resulted in a powerful tsunami with waves as high as 38 metres. The earthquake and tsunami left more than 19 000 persons killed or missing. In addition to the devastating human toll, property damage was estimated by the government at 16.9 trillion yen (about 3½ per cent of GDP), making it the costliest disaster in Japan's post-war history. The shock to economic activity was immediate: industrial production fell by more than half in March 2011 (month-on-month) in Miyagi prefecture and by more than 30% in Iwate and Fukushima, contributing to a nationwide fall of 16% (Figure 1.1). At the beginning of 2013, Japan's industrial production remained 10% below its pre-March 2011 level. The impact was much greater than the 1995 Hanshin Earthquake, which claimed around 6 000 lives and caused damage estimated at 2% of GDP, although both rank far behind the 1923 Great Kanto Earthquake (Table 1.2).

The government's damage estimate does not include the nuclear meltdown at the Fukushima plant that was triggered by the earthquake and tsunami, forcing the evacuation of hundreds of thousands of residents. The suspension of operations at all of Japan's 50 nuclear power plants, which had supplied nearly one-third of electricity, has been a significant constraint on Japan's recovery from the disaster. The disruption of energy supplies and production supply chains negatively affected not only the Japanese economy, leading to a 4.8% fall in output in the first half of 2011 (at an annual rate), but the world economy as well.

Table 1.1. **Greatest earthquakes in recorded world history**[1]

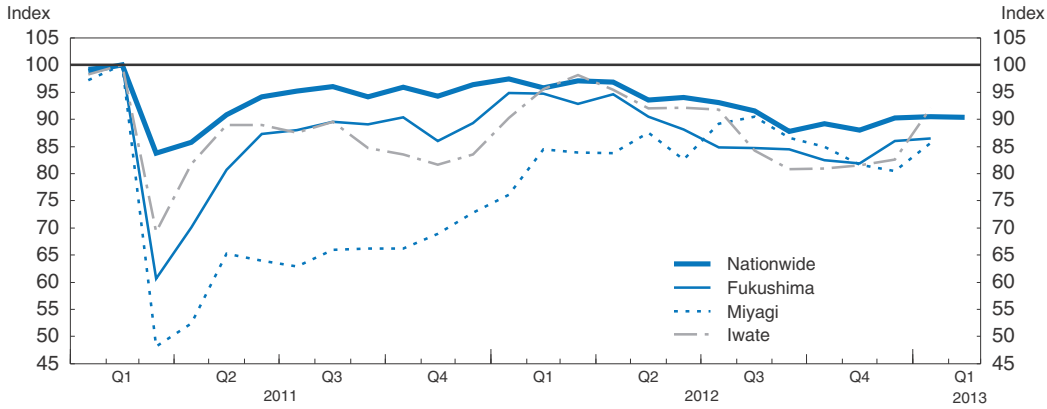
Date	Location	Magnitude	Fatalities[2]	Damage[3]
22 May 1960	Valdivia, Chile	9.5	6	$4 billion
27 March 1964	Alaska, United States	9.2	1	$2 billion
26 December 2004	Sumatra, Indonesia	9.1–9.3	230	n.a.
4 November 1952	Kamchatka, Russia	9.0	n.a.	n.a.
11 March 2011	Great East Japan Earthquake	9.0	19	$260 billion

1. Ranked by magnitude.
2. In thousands.
3. In 2011 USD. Figure given is the midpoint of estimates.

Source: US Geological Survey.

Figure 1.1. **The impact of the Great East Japan Earthquake on industrial production**

Seasonally-adjusted with February 2011 = 100



Source: Ministry of Economy, Trade and Industry, Fukushima prefecture, Miyagi prefecture and Iwate prefecture.

StatLink http://dx.doi.org/10.1787/888932797879

Following the triple disaster – earthquake, tsunami and nuclear accident – the government launched a ten-year reconstruction programme. The reconstruction process offers new opportunities for reform that will have a fundamental and irreversible impact on the Tohoku region. The ideal approach is to identify long-term goals on which to base the reconstruction (OECD, 2012b). While the first priority is rebuilding the devastated area, the focus should shift from short-term reconstruction to long-term economic development, although bottlenecks in the disaster area hinder the implementation of a long-term strategy.

The reconstruction programme is focused on the prefectures of Iwate, Miyagi and Fukushima in the Tohoku region (Figure 1.2), which suffered the greatest losses. Indeed, 99.6% of the persons killed or missing were from those prefectures, as were 96% of the houses that were destroyed. The challenge of reconstructing the three most-affected prefectures is complicated by the long-term decline experienced in the Tohoku region prior to the March 2011 disaster (Table 1.3):

- The population in the three-most affected prefectures fell by 3.4% during the first decade of the 21st century, while Japan's total population increased by almost 1%.

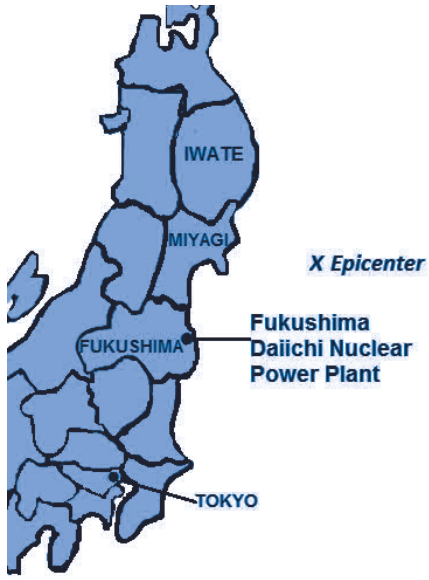
Table 1.2. **Damage to capital stock from major disasters in Japan**

	In trillion yen (current prices)	Per cent of annual GDP
Great East Japan Earthquake (2011)	16.9	3.6
of which:		
Housing and fixed capital of firms	10.4	2.2
Lifeline utilities[1]	1.3	0.3
Social infrastructure	2.2	0.5
Agricultural facilities	1.9	0.4
Other	1.1	0.2
Great Hanshin (Kobe) Earthquake (1995)	9.9	2.0
World War II (1941-45)	64.3	86.0
Great Kanto Earthquake (1923)	4.6	29.0

1. Electricity, gas, water, telecommunications and broadcasting.

Source: Cabinet Office (2011) and Bank of Japan (2011).

Figure 1.2. **The Tohoku region of Japan**



- The population density in the three prefectures, which account for almost one-tenth of Japan's area, is less than one-half of the country as a whole. While 66% of Japanese live in densely-populated districts, only 44.3% of those in the three prefectures do so.
- The rural nature reflects a larger role for farming. In 2010, 5% of the over age-15 population in the three prefectures was engaged in agricultural work, nearly double the nationwide figure. Farming is concentrated in rice production, which accounts for two-thirds of the cultivated area.

Table 1.3. **Characteristics of the three most severely-affected prefectures**

	2000		2010	
	Three prefectures[1]	Japan	Three prefectures[1]	Japan
Population (in millions)	5.9	126.9	5.7	128.1
Population density (per square km)	164.5	340.4	158.9	343.0
Share living in densely-populated areas[2, 3]	43.5	65.2	44.3	66.0
Agriculture's share of work force[2]	5.5	2.8	5.0	2.6
Farm household population as share of total	n.a.	8.2	13.2	5.1
Share of cultivated land devoted to rice[4]	n.a.	41.4	65.7	41.5
Per capita income[5]	2.7	2.9	2.5	2.8
Persons over 65 (as per cent of population)	19.4	17.3	25.1	23.1
Doctors per 100 000 population[6]	180.4	201.5	203.3	224.5

1. The prefectures of Iwate, Miyagi and Fukushima. The prefectures of Aomori, Chiba, Ibaraki, Tochigi and Yamagata, which account for another 11% of Japan's population, were also damaged by the March 2011 disaster.
2. 2005 for 2010.
3. Defined as 4 000 inhabitants or more per square kilometre.
4. In 2009.
5. In million yen at factor cost. Latest year available is FY 2008.
6. 2008 is the latest year available.

Source: Ministry of Internal Affairs and Communications, *Japan Statistical Yearbook 2012* and Ministry of Agriculture, Forestry and Fisheries, *Statistical Yearbook 2012*.

- Economic growth in the three prefectures has lagged behind the national rate. Consequently, the gap in per capita income in the three prefectures widened from 12% below the national average in FY 2000 to 14% below in FY 2008.
- The population of the three prefectures is relatively old, with 25.1% over the age of 65 in 2010 compared to a national average of 23.1%.

In short, with a declining population and a large share of elderly, the three prefectures are on the periphery of Japan but at the forefront of the key challenges facing the country.

While the reconstruction of the Tohoku region requires a wide range of policies, two issues stand out as priorities:

- Agriculture, along with forestry and fisheries, "constitutes the key industry of Tohoku and plays a significant role for local employment", according to the Basic Guidelines for Reconstruction (Reconstruction Headquarters, 2011). It calls for rebuilding agriculture based on a new land-use system and other reforms.
- The nuclear accident at Fukushima revealed a number of weaknesses in Japan's electricity sector. The prospect of a diminished role for nuclear power creates the need for alternative sources of energy, including renewables, such as solar, wind, geothermal, biomass and tides, areas in which the Tohoku area has significant potential. According to the Basic Guidelines, reconstruction should "promote the concentration of industries related to renewable energy systems in the disaster-afflicted regions" (Reconstruction Headquarters, 2011).

While the reconstruction of the Tohoku region is certainly a top priority, its direct impact on the Japanese economy as a whole is limited by the relatively small share of the three prefectures, which together account for 4% of Japan's economic output and 4.5% of its population. Rather than just rebuilding devastated areas, reconstruction should aim to revitalise the entire Japanese economy and boost the potential growth rate towards the 2% target. Indeed, the government recognises the rebuilding of Tohoku as an opportunity to increase the country's growth potential: "The reconstruction of the disaster-afflicted areas plays a leading role in the revitalisation of a vibrant Japan, and the disaster areas cannot be truly rebuilt unless Japan's whole economy is revitalised" (Reconstruction Headquarters, 2011). The disaster-afflicted prefectures support a drastic restructuring.[1] The importance of the disaster as an opportunity for reform is heightened by the limited progress in implementing the 2010 New Growth Strategy. A May 2012 assessment by the government found that only 10% of the 409 measures identified in the Strategy had been successfully implemented (National Policy Unit, 2012c).

The two reform priorities noted above should, therefore, be applied on a nationwide scale. *First*, the Basic Guidelines call for making agriculture in Tohoku "serve as a model for the nation". Boosting the efficiency of the agricultural sector, and in particular, rice, is essential. In addition to lowering the burden on taxpayers and consumers, it would facilitate Japan's participation in comprehensive regional trade agreements, including the Trans-Pacific Partnership (Kawai and Morgan, 2012). *Second*, creating a more market-oriented electricity sector is a key for growth. Failure to reform the electricity sector has left Japan vulnerable to shortages in the wake of the 2011 disaster. From a longer-term perspective, it has saddled Japan with high energy costs that reduce its international competitiveness. After an overview of the reconstruction programme, this chapter examines these areas.

Overview of the reconstruction programme

Reconstruction aims at revitalising economic activities in devastated areas, building disaster-resistant communities and restoring people's life in the communities. Reconstruction spending of around 17 trillion yen (3.6% of GDP) was approved in three supplementary budgets and the FY 2012 budget, an amount close to the 19 trillion yen of outlays targeted for FY 2011-15 in the "Basic Guidelines for Reconstruction". The first two supplementary budgets, which passed in May and July 2011, focused on relief of devastated areas (Table 1.4). The much bigger third budget in November 2011 was largely for reconstruction. As of August 2012, about half of the approved outlays had been spent. The outlays are being financed by reconstruction bonds, which will eventually be redeemed by planned tax increases, notably surcharges on the corporate income tax over FY 2012-14 and on the personal income tax for 25 years beginning in 2013, and other measures such as spending cuts and the sale of some state-owned assets. The new government raised the reconstruction spending total to 25 trillion yen, with additional outlays in the January 2013 fiscal package and the FY 2013 budget (Chapter 2).

Table 1.4. **Supplementary budgets for reconstruction in FY 2011**

Reconstruction-related outlays in billion yen

First supplementary budget (approved on 2 May 2011)[1]	
Disaster relief	483
Removal of debris caused by the disaster	352
Public infrastructure projects	1 200
Loans in response to the disaster	641
Grants to local governments	120
Total	**2 796**
Second supplement budget (approved on 25 July 2011)	
Compensation for damage caused by the nuclear accident	275
Support for people affected by the disaster	377
Reserve fund for recovery and reconstruction	800
Grants to local governments	545
Total	**1 998**
Third supplementary budget (approved on 21 November 2011)[2]	
Disaster relief	94
Removal of debris caused by the disaster	386
Additional public infrastructure projects	1 400
Loans in response to the disaster	672
Grants to local governments	1 600
Grants in response to the disaster	1 500
Nationwide disaster prevention	356
Other expenditure related to the disaster[3]	575
Total	**5 147**

1. Total amount of the first supplementary budget was 4.15 trillion yen.
2. Total amount of the third supplementary budget was 12.1 trillion yen.
3. Includes measures such as subsidies to locate foreign firms in Japan, employment measures, restoration of agriculture, fisheries and forestry, creation of eco-towns, and measures to support SMEs.

Source: Reconstruction Agency (2012a).

A new government agency, the Reconstruction Agency, has been established to co-ordinate all reconstruction policies and to provide a one-stop shop for local governments. The Agency has branches in Iwate, Miyagi and Fukushima prefectures. In addition, two new mechanisms – "Special Zones for Reconstruction" and the "Reconstruction Grants System" – have been introduced to promote the rebuilding of the Tohoku region. Reconstruction efforts facilitated the recovery in industrial production, which by the beginning of 2012 had reached 90% of its pre-disaster level in Iwate and Fukushima prefectures and 75% in Miyagi (Figure 1.1).

Special Zones for Reconstruction

To make use of private-sector dynamism in the reconstruction process, the government introduced Special Zones for Reconstruction in 2011. A total of 227 municipalities located in the "disaster-afflicted zones" – which includes all of Iwate, Miyagi and Fukushima prefectures – can propose the creation of special zones to the central government. Those that are approved by the Cabinet can receive special treatment, notably: *i)* land-use restructuring facilitation; *ii)* relaxation of regulations and administrative procedures; *iii)* financial support; and *iv)* tax reduction. Thus far, 31 zones have been created, with all but three of them located in Iwate, Miyagi and Fukushima prefectures (Table 1.5).

About one-half of the zones include some type of deregulation measures. In some cases, the reforms are clearly linked to recovery from the disaster, such as allowing hospitals to offer care with fewer doctors than generally required by law and extending the period during which small and medium-sized enterprises can operate in temporary structures. Other reforms could have a major impact on disaster-impacted areas but also, if extended beyond, on the rest of the country:

- Relaxing regulations on land use to allow firms/local governments to construct commercial facilities in industrial zones.
- Relaxing the conditions on farmland use, thereby allowing farmers and firms to use it for other purposes than agriculture.
- Relaxing the approval criteria for producing and selling medical devices.

The zones are similar in some respects to the Special Zones for Structural Reform, an initiative launched in 2002, which also allowed special regulatory measures in specific locations, based on proposals from local governments and firms (2011 *OECD Economic Survey of Japan*). However, there are two important differences between the two schemes. *First*, the Special Zones for Structural Reforms did not allow any fiscal support, such as tax exemptions or subsidies, in contrast to the zones for reconstruction. *Second*, the deregulatory measures could be extended to the rest of the country. The zones acted as a testing ground for reforms that could be later introduced at the national level, continued in the zone or rejected, depending on the results. As of the end of 2011, 826 reforms introduced in the 1 171 Special Zones for Structural Reform had been extended nationwide. In contrast, there is no mechanism for extending the deregulation measures in the zones for reconstruction on a nationwide basis. Creating such a mechanism would help make the reconstruction of Tohoku more effective in revitalising the Japanese economy.

Other schemes have been introduced to encourage private investment in Tohoku:

- A 170 billion yen ($1.8 billion) fund was established by the Ministry of Economy, Trade and Industry (METI) to subsidise construction by firms locating in Fukushima prefecture.

Table 1.5. **Special Zones for Reconstruction**

As of 21 December 2012

Prefecture	Reforms implemented	Industries or sectors
Aomori	Tax incentives (local and national corporate tax)	Green innovation manufacturing, food
	Financial incentives (support for interest costs)	Food production
	Financial incentives (support for interest costs)	Refrigeration facilities
Iwate	Deregulation[1]	Medical care services
	Tax incentives (local and national corporate tax), deregulation[2]	Electronic machine manufacturing, drugs
	Deregulation[3]	Commercial establishments
Miyagi	Tax incentives (local and national corporate tax)	Autos, electronics, food, wood, etc.
	Tax incentives (local and national corporate tax)	Agriculture, renewable energy
	Tax and financial incentives	Tourism, fish processing
	Tax incentives (local and national corporate tax)	Commercial, welfare and long-term care
	Deregulation[4]	Agriculture
	Deregulation[1]	Medical care services
	Tax incentives (local and national corporate tax)	Information services
	Tax incentives (local and national corporate tax)	Commercial, tourism
	Deregulation (relaxing regulations on building)	Commercial
	Tax incentives (local and national corporate tax)	Agriculture
	Deregulation (relaxing regulations on building)	Fishery, fish processing
	Tax incentives (local and national corporate tax)	Commercial, restaurant business
	Tax incentives (local and national corporate tax)	Commercial, tourism
Fukushima	Deregulation; relaxing approval criteria	Medical device manufacturing
	Tax incentives (local and national corporate tax)	Transport equipment, electronics, medical devices
	Financial incentives (support for interest costs)	Manufacturing
	Deregulation[1]	Medical care services
	Deregulation[5]	SMEs
	Deregulation[6]	Regional development
	Tax incentives (local and national corporate tax)	Tourism
	Financial incentives (support for interest costs)	Paper manufacturing
	Financial incentives (support for interest costs)	Precision equipment
Ibaraki	Tax incentives (local and national corporate tax)	Autos, material, electronics, etc.
	Delegulation[6]	Regional development
Tochigi	Deregulation[7]	School activity

1. Relaxing the criteria on the number of doctors required at hospitals, thereby allowing hospitals with fewer than the minimum required to provide medical care services.
2. Relaxing the approval criteria for producing and selling medical devices.
3. Relaxing regulations on land use to allow firms/local governments to construct commercial facilities in industrial zones.
4. Relaxing the conditions on farmland use, thereby allowing farmers and firms to use it for other purposes than agriculture.
5. Extending the period allowed for using temporary buildings, thus helping SMEs to restart their activities.
6. Relaxing the conditions for firms to withdraw funds set aside for defined contribution pensions.
7. Extending the period allowed for using temporary buildings, thus ensuring educational opportunity for students.

Source: Reconstruction Agency (2012b).

- METI is also trying to promote inward foreign direct investment (FDI) through the Subsidy Programme for Projects Promoting Asian Site Location in Japan. The ceiling on the subsidy rate has been increased from one-half to two-thirds in FY 2012 in order to attract FDI to Tohoku. Thus far, however, there has not been any new FDI in the disaster-affected area.

Reconstruction Grant System

The Basic Guidelines state that reconstruction will be achieved by "making full use of the capacities of local governments" (Reconstruction Headquarters, 2011). Municipalities

have been drawing up their own reconstruction plans, in consultation with other local authorities and the central government, which offers technical support through research and by providing experts. Promoting effective co-operation between the central and local governments is thus essential to effectively rebuild the Tohoku region.

An "easy-to-use and highly flexible grant system" was established to help finance the reconstruction plans formulated by the 227 municipalities located in the "disaster-afflicted zones". The financing of reconstruction projects has been combined into one grant system, with an aim of ensuring more flexible implementation and simplifying procedures. The grants will cover 50% of the local expenses for core projects and 80% for supporting projects, thus reducing the burden on local governments. At the same time, efficiency and transparency are promoted through the evaluation and publication of reconstruction plans. Eligible projects include road building, land readjustment, relocation of facilities to prevent future disasters, agricultural area development, fishery village development, schools and earthquake reinforcement of hospitals. A total of 1.9 trillion yen – about one-tenth of the funds allocated for reconstruction – will be provided to projects proposed by local governments, which will be implemented in co-operation with the relevant national ministries.

Reforming agriculture and promoting Japan's integration in the world economy

Japan's agricultural policy has aimed at increasing its level of self-sufficiency in order to ensure a secure food supply, sustaining farm household income at a level comparable to non-farm households, boosting productivity and achieving the "multifunctionality aspects of agriculture", such as environmental protection. Border restrictions and domestic supply management policies make Japan's level of agricultural support, as measured by the Producer Support Estimate (PSE), the third highest in the OECD area at 51% in 2009-11, more than twice the OECD average (Table 1.6). Moreover, the decline in Japan's PSE since 1986-88 was less than that for the OECD as a whole.[2] Agricultural policies boosted the prices received by farmers to almost two times the world price in 2009-11, based on the Nominal Protection Coefficient. Consequently, consumer spending on agricultural goods was 1.8 times higher than what it would have been in the absence of government policies. In addition to the burden on consumers and taxpayers, concerns about agricultural issues complicate Japan's participation in comprehensive free trade agreements, thus limiting the scope for its integration in the world economy.

Agricultural reform has become a top priority in Japan in recent years. The creation of the "Headquarters to Promote the Revival of the Food, Agriculture, Forestry and Fisheries Industries" in 2010, a council that consisted of all members of the Cabinet, was part of an effort to promote high-level economic partnerships with key countries. In 2011, the Headquarters announced a *Basic Policy and Action Plan* that aimed at bolstering the competitiveness of farmers over the following five years to prepare for a new era of bilateral and regional trade agreements. The need for reconstruction in Tohoku following the 2011 disaster reinforces the need for a new agricultural model, which should be extended nationwide. This section begins by discussing the challenges facing Japanese agriculture before discussing recent policy initiatives, followed by a proposed agenda for reform, with recommendations shown in Box 1.2.

Table 1.6. **The level of agricultural support in Japan is one of the highest in the OECD**

	1986-88[1]	2009-11
Producer Support Estimate (PSE)[2]		
Japan	63%	51%
OECD	38%	20%
Producer Nominal Assistance Coefficient (NAC)[3]		
Japan	2.78	2.06
OECD	1.59	1.26
Producer Nominal Protection Coefficient (NPC)[4]		
Japan	2.65	1.89
OECD	1.49	1.11
Consumer Support Estimate (CSE)[5]		
Japan	-62%	-43%
OECD	-30%	-8%

1. The OECD total for 1986-88 includes all OECD countries except Chile, Israel and Slovenia, for which data are not available.
2. The Producer Support Estimate is the annual monetary value of gross transfers from consumers and taxpayers arising from policies that support agriculture, regardless of their nature, as a per cent of the gross value of farm receipts.
3. The NAC is the ratio between producer's actual gross farm receipts and what they would have been on the world market.
4. The NPC is the ratio between prices received by farmers and those on the world market.
5. The CSE is the share of consumers' expenditure on agricultural commodities that arises as a result of the changes in prices caused by agricultural policy. A negative number indicates that consumers are net providers of support to producers.

Source: OECD PSE/CSE Database 2012.

Challenges facing Japanese agriculture

While the relative importance of agriculture has fallen in most OECD economies, the decline in Japan has been particularly sharp. During the past half century, its share of GDP dropped from 9% to 1%, its share of the labour force shrank from 28% to less than 3% and the cultivated land area has fallen by a quarter. Small and fragmented plots of land are farmed by an ageing work force. The share of full-time farm households fell from 34% to 23% over the same period, while the share of part-time farming households, who earn less than half of their income from agriculture, rose from 32% to 62% (MAFF, 2010a). The key challenges facing the agricultural sector include:

- Low productivity in land-intensive agriculture, stemming largely from the small average size of farms.
- Heavy reliance on chemical fertiliser and pesticides, creating environmental problems.
- High levels of commodity-specific support that distort production decisions and hinder farm level adjustment.
- Restrictive border measures that isolate farmers from international competition, impose heavy burdens on consumers and taxpayers and limit Japan's participation in comprehensive regional and bilateral trade agreements.

The small average size of farms keeps productivity low

The seeds of the current agricultural structure based on small farms were sown in the post-war "land to the tiller" reform, which transferred land from large landlords to small farmer-owned operations. The reform was legislated in the 1952 *Agricultural Land Act*,[3] which limited land holdings to three hectares until 1970 (Yoshikawa, 2010). In most OECD

countries, the mechanisation of agriculture and competition sharply increased average farm size. In France, for example, the average rose from 17 hectares in 1970 to 55 in 2010. As a result, farms cultivating more than 25 hectares of land accounted for 64% of all farms, 93% of cultivated area and 87% of workers in 2010 (Agreste-Primeur, 2011). In Japan, in contrast, mechanisation encouraged full-time farmers to shift to part-time farming, while working in other sectors. Average farm size has risen only slightly during the past 50 years to a national average of two hectares (Table 1.7), remaining very small compared with the European Union (14 hectares), the United States (170 hectares) and Australia (2 970 hectares) (MAFF, 2012a).

Table 1.7. **The average farm size remains small**

In hectares or head[1]

	1960	1965	1975	1985	1995	2005	2010
By region							
Nationwide	0.9	0.9	1.0	1.1	1.5	1.8	2.0
Hokkaido	3.5	4.1	6.8	9.3	14.0	18.7	21.5
Other than Hokkaido	0.8	0.8	0.8	0.8	1.2	1.3	1.4
By agriculture product							
Rice	0.6	0.6	0.6	0.6	0.9	1.0	1.1
Wheat		0.2	0.2	0.6	1.4	2.1	3.7
Potato		0.1	0.0	0.1	0.7	0.4	0.7
Soybean		0.1	0.0	0.1	0.3	0.5	0.8
Animal husbandry[2]							
Dairy	2.0	3.4	11.2	25.6	44.0	59.7	67.8
Beef cattle	1.2	1.3	3.9	8.7	17.5	30.7	38.9
Pigs	2.4	5.7	34.4	129.0	545.2	1 095.0	1 436.7

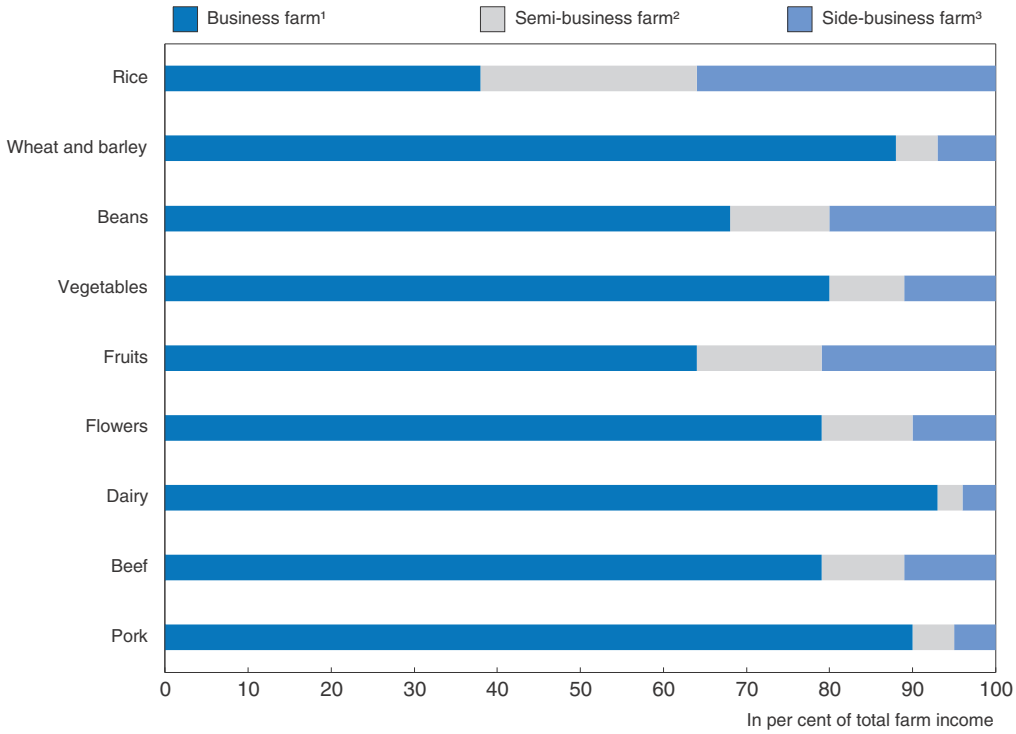
1. Farm size is the average operational size of each commodity enterprise in a farm household. Rice farming includes only commercial farm households since 1995.
2. By number of head.

Source: Ministry of Agriculture, Forestry and Fisheries (2012a).

The number of business farms – households that earn more than one-half of their income from farming and farm more than 60 days a year – has fallen by more than half during the past 20 years. By 2010, only a third of rice was grown by "business farms" (Figure 1.3). Small farms are not viable as business entities, but remain in operation due to agricultural policies, which drive up the price of rice, and labour-saving technology, which enables small farmers to engage in non-farm employment on a full-time basis. Indeed, labour inputs per 0.1 hectare of land for ploughing, planting, weeding, harvesting and threshing fell from 174 hours in 1960 to 25 hours in 2010 (MAFF, 2011a). Among part-time farmers, 79% had permanent non-farm employment in 2005, while the remainder were temporary employees or self-employed (MAFF, 2005).

The small average farm size limits economies of scale: total production costs per unit of output for rice farms that cultivate less than 0.5 hectare are more than double those with three to five hectares. Another study found that ten hectares or more – an area farmed by only 0.7% of Japanese rice farmers – is the optimal size for full-time agriculture (Godo, 2006). The link between small farm size and low productivity has prompted the government to make farm consolidation a policy objective. For example, the 2005 *Basic Plan on Food, Agriculture and Rural Areas* set out an ambitious vision of expanding family farms producing crops to an average size of 15 hectares.

Figure 1.3. **Agricultural production by type of farm household in 2010**



1. Business farm households earn more than half of household income from farming and engage in farming more than 60 days a year. There were 360 thousand business farms in 2010, accounting for 22% of commercial farms in Japan.
2. Sub-business farms engage in farming more than 60 days per year, but earn less than half of household income from farming. There were 389 thousand semi-business farms in 2010, accounting for 24% of commercial farms in Japan.
3. Side-business farms engage in farming for less than 60 days per year. There were 883 side-business farms in 2010, accounting for 54% of commercial farms in Japan.

Source: Ministry of Agriculture, Forestry and Fisheries (2012a).

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A number of factors hinder farm consolidation, keeping farm size and productivity low. *First*, regulations on acquiring farmland remain significant. The 1952 Act provides guidelines stating that the acquisition of farmland should be limited to those who actually cultivate the land for at least 150 days a year, although local agricultural committees can make exceptions as long those acquiring the land agree to engage fully in agriculture. In addition, land transactions have to be approved by local agricultural committees. Moreover, a firm is not allowed to purchase farmland unless it qualifies as an Agricultural Production Corporation (APC).[4] Non-APC companies have been allowed to rent (but not own) agricultural land since 2009. However, land rented by non-APC firms in 2011 amounted to only about 0.01% of Japan's cultivated land.

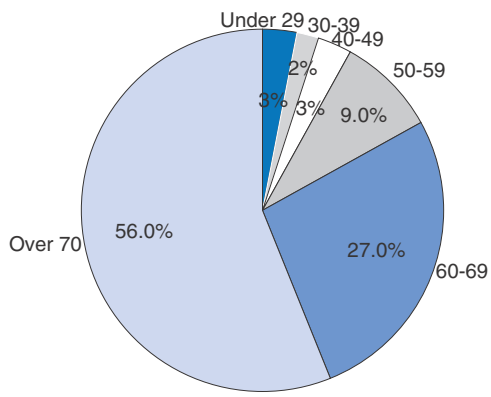
Second, the possibility of converting farmland into other uses encourages some farmers to hold onto their land rather than sell it to farmers seeking more land. Moreover, they are reluctant to rent land to other farmers, fearing that the renters may demand a share of the profit if the land is sold (Yoshikawa, 2010). Farmers whose land is converted to other uses can realise large capital gains. Indeed, the purchase price of paddy land for non-agricultural use in 2011 was more than 11 times higher than its price for farming use

outside of urban planning zones. Although the agricultural land-use plan, which is under the responsibility of prefectural governors, is aimed at keeping land in agriculture, a quarter of farmland in 1960 has since been shifted to non-agricultural uses. Recommendations on zoning changes and land conversion are made by Local Agricultural Committees (elected by farmers) and local governments, which tend to favour the conversion of farmland to higher valued-added activities.[5] *Third*, the low holding tax on farmland outside of urban zones encourages farmers to wait for changes in zoning that would allow them to realize large capital gains. *Fourth*, the policy of providing income support payments to all rice farmers – regardless of farm size – encourages small operators to continue production. Moreover, the production adjustment programme for rice, which was introduced in 1969 to reduce output, allocates quotas throughout the country, including to both efficient and inefficient farmers, thus limiting the scope for farm consolidation (see below).

Demographic factors, though, will tend to promote farm consolidation by reducing the number of farmers through attrition. By 2010, the average age of farmers was 66 and 56% of rice farmers were over 70, while another 36% were between 50 and 70 (Figure 1.4). Only 8% were under age 50 (MAFF, 2010a). More than half of farm households do not have a family worker under the age of 65, suggesting that farm operations may eventually be transferred outside the family. The 2010 *Basic Plan* projects a one-third fall in the number of commercial farm households from nearly 1.7 million to 1.1 million by 2020 and a one-quarter drop in the number of workers primarily engaged in family farming from 1.9 million to 1.4 million.

Figure 1.4. **Japan's farm work force is elderly**

The age distribution of rice farmers in 2010



Source: Ministry of Agriculture, Forestry and Fisheries (2010a).

Environmental issues related to farming

The prevalence of small farms also has negative environmental implications. Part-time farmers with small plots substitute purchased inputs, notably chemical fertiliser and pesticides, for labour and land. The nitrogen surplus per hectare of agricultural land in Japan in 2007-09 was one of the highest among OECD countries, and around twice the OECD average (OECD, 2012d). Among farms with less than 0.5 hectare, only 32% have reduced chemical fertiliser use and 39% pesticide use, compared to around 70% for farms

larger than 15 hectares (OECD, 2009). In 2010, fertiliser use per 0.1 hectare was 35% less in large farms (more than ten hectares) than in small farms (less than 0.5 hectare), while pesticide use was 29% less (MAFF, 2011a).

A high level of commodity-specific support that distorts production decisions

Agricultural policy is aimed in part at supporting farm household income at a level comparable to that in other sectors. Japan has more than achieved this objective: farm household income, on a per capita basis, exceeded that of non-farm households by 21% in 2010 (Table 1.8). Of course, only a small portion of this income derives from farming, as non-farm income is the primary source of income for farm households. Providing a high level of support to achieve the income parity objective that has already been met is both costly and unnecessary. To the extent that farm household income problems do exist in some areas or for some types of farms, they should be addressed more efficiently through tax and social spending programmes.

Table 1.8. **Farm household income exceeds that of non-farm households**

Income per household member in thousands of yen in current prices[1]

	1960	1970	1980	1990	1995	2000	2005	2010
Non-farm households	112	348	1 096	1 692	1 913	1 946	1 823	1 839
Farm households[2]	77	326	1 271	1 967	2 118	2 080	2 230	2 230
Farm relative to non-farm households	69%	94%	116%	116%	111%	107%	130%	121%

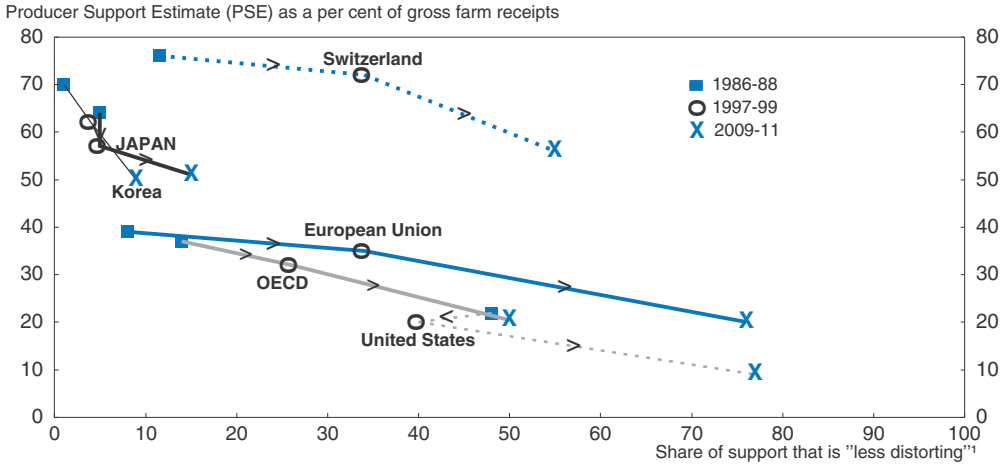
1. A non-farm household is a worker's household with two or more members. The data exclude agricultural, forestry and fishery households (except for 1960).
2. Only commercial farm households included prior to 2004. For 2005 and 2010, farm household income is defined as business income earned by household members involved in farming operations for more than 60 days per year. Income per household member in 2005 and 2010 is calculated as the income per household member involved in farming operation.

Source: Ministry of Agriculture, Forestry and Fisheries (2012a).and Ministry of Internal Affairs and Communications (2012).

Not only is the support level high but it is concentrated in market price support (MPS) measures, which are the most distortive and least effective means of increasing farm income (OECD, 2009). Japan's MPS is maintained via a combination of tariffs and quotas to limit imports, administered prices, and production adjustment programmes (see below). The share of "less distortive payments" (*i.e.* excluding MPS, as well as payments based on output and on non-constrained variable input use) was only 15% of the assistance provided to Japanese farmers in 2009-11, well below the OECD average of 50% (Figure 1.5). While Japan has reduced its overall level of support, as measured by the PSE, from very high levels, the improvement in its composition remains small compared to other OECD countries.

In the production adjustment programme, the government allocates output targets to each prefecture and further down to each individual farmer in order to keep prices above market equilibrium levels and support farm income. The programme allows rice production to be distributed widely in Japan, including in less favoured areas, by sharing the amount of rice diversion over different areas (OECD, 2009). Efficiency and cost considerations are not factors in this system. The domestic supply controls work in tandem with border measures to maintain higher domestic prices. In 2010, about a third of paddy land was kept out of rice production. The government provides direct payments to compensate farmers for the revenue lost due to growing less profitable crops, such as

Figure 1.5. **The share of less distortive agricultural support is low in Japan**



1. Excluding MPS, as well as payments based on output and non-constrained variable input use. The horizontal axis thus shows the share of less distortive support.

Source: OECD (2012a).

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wheat, barley and soybeans. However, 39% of the land taken out of rice production was left idle. Nevertheless, the payment for not growing rice accounted for almost a quarter of the budgetary transfer component in the PSE in 2009-11. About 85% of rice farmers participate in the production adjustment programme, which is required to receive the income support payment from the government (Hattori, 2011). Other production quotas managed by producer organisations or co-operatives for other products, notably milk and vegetables, have similar negative effects for competition, efficiency and consumer costs.

In addition to the lower productivity and high budget costs, the production quotas for individual farmers constrain their decisions on how much and what to produce. The production adjustment programmes thus mute market signals and reduce the dynamism of agriculture by stifling farmers' incentives to increase output. This effect is reinforced by Japan's reliance on single-commodity transfers (SCT), which also shift production away from the optimal product mix. During 2009-11, 88% of support in Japan was tied to a specific commodity, thus narrowing farmers' choice of what to produce. In contrast, the United States and the European Union have significantly reduced the share of SCTs in total support to 34% and 23%, respectively. In addition to their large share in Japan, SCTs are focused on the least competitive commodities, notably rice.

The high level of border measures complicates Japan's integration in the world economy

Border measures keep domestic agricultural prices above world levels and contribute to food self-sufficiency, but at a very high cost to consumers and with negative effects on production decisions and environmental performance. Import barriers are highest for rice and dairy products, which have relatively high self-sufficiency ratios (see below). In FY 2010, the simple average tariff on agricultural goods was 14.7%, well above the 5.8% average for all goods. Under the Uruguay Round, Japan is committed to rice imports equivalent to 7.2% of domestic consumption in the 1986-88 base period (equivalent to 8.5% of current domestic consumption). Rice imports beyond the quota amount would be

subject to a tariff of 341 yen per kilogramme, which amounted to a 780% tariff in 2012. Very high tariffs are also applied to red beans (403%), barley (256%) and wheat (252%).

The high level of border protection for its agricultural sector has been a major issue in Japan's participation in trade agreements. Indeed, Japan was one of the few countries in the world at the beginning of the 21st century without any bilateral or regional trade agreements, although it now has agreements with 12 countries, plus ASEAN (Table 1.9). Agriculture has been a major topic in agreements, as in the case of Mexico, which included negotiations on pork, beef, chicken and oranges. In the end, Japan increased import quotas for these products, rather than removing tariffs, as is required in FTAs that are consistent with WTO rules. Consequently, Mexican agricultural products exempted from import tariffs as a percentage of Mexico's total agricultural exports to Japan was less than 50% (in value terms) (Kawai and Urata, 2010).

Table 1.9. **Japan's Economic Partnership Agreements**

Country	Status	Share of exports in 2011 in per cent		Share of imports in 2011 in per cent	
		Total	Agriculture	Total	Agriculture
Singapore	Took effect in 2002	3.3	1.3	1.0	0.7
Mexico	Took effect in 2005	1.2	0.1	0.5	0.9
Malaysia	Took effect in 2006	2.3	1.5	3.6	0.9
Chile	Took effect in 2007	0.3	0.1	1.1	6.3
Thailand	Took effect in 2007	4.6	4.9	2.9	5.0
Indonesia	Took effect in 2008	2.2	2.1	4.0	5.4
Brunei	Took effect in 2008	0.0	0.0	0.7	0.0
Philippines	Took effect in 2008	1.4	0.9	1.0	1.8
ASEAN[1]	Took effect in 2008	14.9	13.4	14.6	15.0
Switzerland	Took effect in 2009	1.1	0.9	0.9	0.6
Vietnam	Took effect in 2009	1.2	2.5	1.4	1.1
India	Took effect in 2011	1.3	1.0	0.8	1.4
Peru	Took effect in 2012	0.1	0.1	0.3	1.3
Sub-total		**19.1**	**15.5**	**18.2**	**25.6**
Australia	Negotiations are under way	2.2	0.6	6.6	15.3
Colombia	Negotiations are under way	0.2	0.0	0.1	0.4
Mongolia	Negotiations are under way	0.0	0.0	0.0	0.0
Canada	Negotiations are under way	1.1	0.4	1.5	5.5
Total		**22.5**	**16.5**	**26.4**	**46.8**

1. Includes Cambodia, Laos and Myanmar, in addition to the other ASEAN countries shown individually.
Source: OECD International Merchandise Trade Statistics Database.

The 2010 *Basic Policy on Comprehensive Economic Partnerships* acknowledged that trade agreements would have a relatively large impact on agriculture. Indeed, a recent study estimated that the fall in output for primary industries in Japan, including agriculture, resulting from the proposed Free Trade Area of the Asia Pacific (FTAAP), which includes the 21 APEC members, would be the largest among participating countries (Kawasaki, 2010). Nevertheless, the FTAAP would boost Japan's real GDP by 1.1%. Japan's existing EPAs accounted for 19.1% of its trade in 2011. Even if the agreements with Australia, Canada, Colombia and Mongolia were implemented, the coverage would rise to only 22.5% for exports and 26.4% for imports. In contrast, Korea's Free Trade Agreements account for 45% of its exports and 35% of its imports.

A falling rate of food self-sufficiency

Despite border measures, Japan's food self-sufficiency ratio in terms of calories has fallen by half, from 79% in 1960 to 39% in 2010 (Table 1.10). Japan is the world's largest net importer of agricultural products, importing 16 times more than it exports in value terms. In terms of the total value of food produced, the self-sufficiency ratio was 66% in 2011. The 2010 *Basic Plan* raised the self-sufficiency target from 45% in 2015 to 50% by 2020 in calorie terms and set a self-sufficiency objective of 70% in terms of the production value (Figure 1.6). In particular, self-sufficiency in rice is targeted to rise slightly from 95% to 96% by 2020. Achieving these targets requires increased agricultural production.

Table 1.10. **Self-sufficiency in food production**

In per cent[1]

	1960	1970	1980	1990	1995	2000	2005	2010
Total	**79**	**60**	**53**	**47**	**43**	**40**	**40**	**39**
Rice	102	106	100	100	103	95	95	97
Wheat	39	9	10	15	7	11	14	9
Soybeans	28	4	4	5	2	5	5	6
Vegetables	100	99	97	91	85	82	79	81
Fruits	100	84	81	63	49	44	41	38
Dairy products	89	89	82	78	72	68	68	67
Beef	96	90	72	51	39	34	43	42
Pork	96	98	87	74	62	57	50	53
Feed	n.a.	38	28	26	26	26	25	25

1. The total self-sufficiency rate is expressed on a calorie basis, while that for each commodity is expressed on a weight basis.

Source: Ministry of Agriculture, Forestry and Fisheries (2012b).

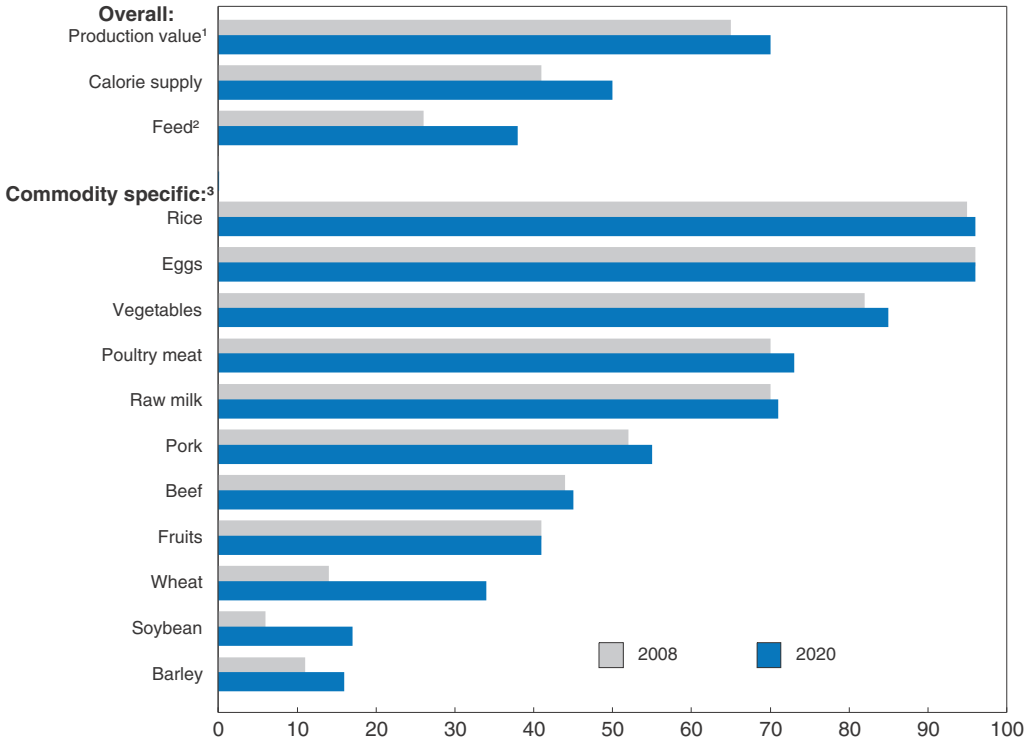
Recent policy measures and an evaluation of their effectiveness

Income support payments

In April 2007, the government introduced income support for five major crops (wheat, barley, soybeans, sugar beets and starch potato but excluding rice) for which Japan's self-sufficiency rate is low. This new system of support, which was based on historical levels of farm size, income loss and output, replaced the previous commodity-specific, output-based payments. Payments under the new system were limited to core farmers, defined as those with at least four hectares (10 hectares in Hokkaido), as part of its objective of increasing the average size of farms. However, following the backlash in rural areas in the 2007 election, the focus on large farms was weakened in 2008 by allowing each municipality to approve exemptions.

The 2007 system of direct payments to core farmers of the five crops was extended to all farmers with sales records in 2011, while payments were added for two additional products (buck wheat and rape seed). The programme aims to increase self-sufficiency by allowing farmers growing these seven crops to earn as much as rice farmers. In 2010, the government also introduced a new farm income support programme for rice that bridges the gap between the producer price and production cost. The payment is available to all rice farms with sales records, regardless of size, thus increasing the number of rice farmers receiving income support by 17 times, from 72 thousand to 1.2 million between 2007 and 2011.[6] The government's rationale for supporting all rice farmers is to promote the viability of small farmers, some of whom may become core farmers in the future.

Figure 1.6. **Japan's targets for food self-sufficiency**



1. Assuming that prices in 2020 remain unchanged at 2008 levels.
2. In terms of total digestible nutrients.
3. In terms of weight.

Source: Ministry of Agriculture, Forestry and Fisheries (2012b).

However, sustaining small farms slows farm consolidation and limits opportunities to become core farmers. Making the new payment available to all farms, including part-time and small-scale producers, encourages them to continue farming rather than transfer their land to full-time farmers. The new programme is thus holding back farm consolidation and productivity. Moreover, the new payment involves a higher level of market price support and is commodity specific, leaving less scope for farmers to decide what to produce.

Policies to promote land consolidation

Despite the decision to abandon the income support targeting large-scale farmers, farm consolidation remains a government objective. To promote farmland consolidation, the government launched a system in 2009 to co-ordinate farmland use in each municipality through discussions by interested parties. Optimal solutions are to be achieved by landowners and potential purchasers and renters, thereby reducing transaction costs, especially for those renting land from many small-farm owners.

The government continues to set ambitious targets for farm consolidation. The 2010 *Basic Plan* set an objective of increasing the average size of commercial farms to 2.5 hectares by 2020 and business farms to 7.7 hectares. This was followed by the 2011 *Basic Policy and Action Plan*, which calls for accelerating farm consolidation so that the majority of farms operate 20-30 hectares of land in flat areas and 10-20 hectares in hilly and mountainous areas. In 2012, the government launched a set of new policies to this end.

First, each municipality is to prepare an agricultural master plan, based on community discussions, which will identify core farmers and an ideal land-use pattern for the future. *Second*, the farmers who expand farm size in accordance with the master plan receive additional payments of 20 thousand yen (about $210) per additional 0.1 hectare. *Third*, a new financial payment was launched to support those who lease land to core farmers. The payments, which can be as high as 700 thousand yen per household, are based on the leased area. However, these policies are unlikely to be fully effective as long as the other factors that impede consolidation remain in place. The priority should be to remove these obstacles rather than to introduce new subsidies.

An overall evaluation of agricultural policies

Agricultural policies can be judged on their success in achieving their major objectives (Table 1.11):

- *Sustaining farm income:* The production adjustment programmes, the provision of income support to all farmers and import restrictions have raised farm prices and income, thereby sustaining farm household income at a level comparable to non-farm households. However, this has imposed a high cost on consumers and taxpayers.
- *Boosting productivity*: Productivity has been adversely affected, as the production adjustment programmes divide rice production between efficient and inefficient farms and hinder farm consolidation.
- *Multifunctionality objectives*: Taking more than a third of the paddy land out of rice production and leaving much of it idle has negative implications for multifunctionality objectives related to the environment.
- *Food security*: Food self-sufficiency is only one aspect of food security, which also depends on the existence of a competitive domestic agricultural sector and stable trading relationships. Moreover, food adjustment programmes reduce domestic production, thus working against self-sufficiency.

Table 1.11. **Success of agricultural policies in meeting objectives**[1]

	Farm income	Productivity	Environmental multi-functionality[2]	Food security
Current policy framework				
Production adjustment programme for rice	+	--	--	--
Income support payments for all farms	+	--	0	+
Uncertainty about farmland use plan and regulation	0	--	0	--
Food self-sufficiency rate targets	--	--	0	+
Proposed policy framework				
Transitory income support payments to large farms	++	++	+	+
Decoupled payments based on environmental services	+	0	++	+
Comprehensive land use plan and transparent regulation	0	+	+	+
Multiple criteria to assess food security	0	+	0	++

1. A + indicates that the policy helps achieve the objective, while a -- indicates it is a hindrance. A 0 means that it has no impact on meeting the objective.
2. Such as water-buffering, bio-diversity, landscape and other environmental services.

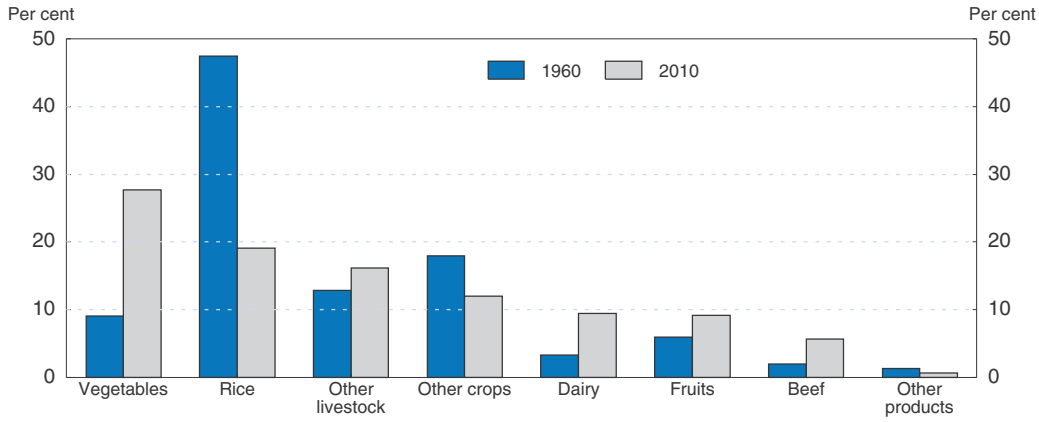
Source: OECD Secretariat.

An agenda for agricultural reform in Japan

The 2010 *Basic Policy on Comprehensive Economic Partnerships* stressed that Japan must implement "bold policies that will realise the full potential of the agricultural sector" in order to boost Japan's growth prospects. Moreover, given the average age of farmers, reform is urgent. Policies should aim at making agriculture a growth industry by shifting to higher-valued products. The development of the vegetable industry illustrates the potential for a competitive and market-oriented agricultural sector in Japan if it were to move away from import-substitution style policies that isolate domestic producers. Indeed, the increase in the relative importance of vegetable production, which is now larger than rice in terms of the share of agricultural ouptut (Figure 1.7), was achieved in the absence of high import protection. The majority of applied tariff rates for vegetables are around 3%, well below the average tariff of almost 15% for the agricultural sector and the almost 800% tariff for rice. In contrast to rice, 80% of vegetables are produced by business farm households (Figure 1.3). Indeed, vegetables are a labour-intensive sector that does not require a large land area to be competitive, in contrast to rice.

Figure 1.7. **The changing structure of Japanese agriculture**

In terms of value



Source: Ministry of Agriculture, Forestry and Fisheries (2012a).

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Reform should focus on providing greater opportunities to farmers to operate in a more open and competitive environment, allowing them to make their own production decisions in response to market demands, thereby promoting the long-term growth and competitiveness of agriculture and Japan's integration in the world economy. Such a framework is needed to create greater incentives for farmers to produce high-quality and high-value products, rather than promoting their concentration in areas where they are not competitive. This type of approach would boost their productivity and increase incomes in a sustainable way, while helping improve environmental performance and food security. Moreover, reforms will need to focus on rice: although its share of agricultural production has fallen to 20% (Figure 1.7), 70% of commercial farmers produce rice, 54% of

farmland is paddy and 28% of agricultural support went to rice production in 2009-11. A reform programme should include the following elements:

i) Production adjustment programmes should be phased out over a fixed and relatively short time period.

ii) Assistance through market price support measures should shift away from commodity-specific support and be replaced with temporary, time-limited support payments to large-scale farmers.

iii) Domestic reforms should be followed by phasing out import restrictions to allow consumers easy access to imported products and services, greater choice and lower costs, while encouraging Japan's participation in comprehensive bilateral and regional trade agreements that will boost its potential growth rate.

iv) The measures above will promote the creation of larger farms and should be accompanied by reforms to remove impediments to consolidation through a comprehensive land-use plan and transparent land-use regulation.

v) Concerns about food security should be met through a comprehensive approach aiming at a more dynamic domestic agricultural sector; an emergency stockpile reserve; secure, long-term trading arrangements; and measures to preserve the agricultural resource base, most notably paddy land.

Such agricultural reforms would be particularly beneficial to regions with a comparative advantage in agriculture, including Tohoku (Box 1.1).

Box 1.1. **The comparative advantage in agriculture in the three Tohoku prefectures most affected by the disaster**

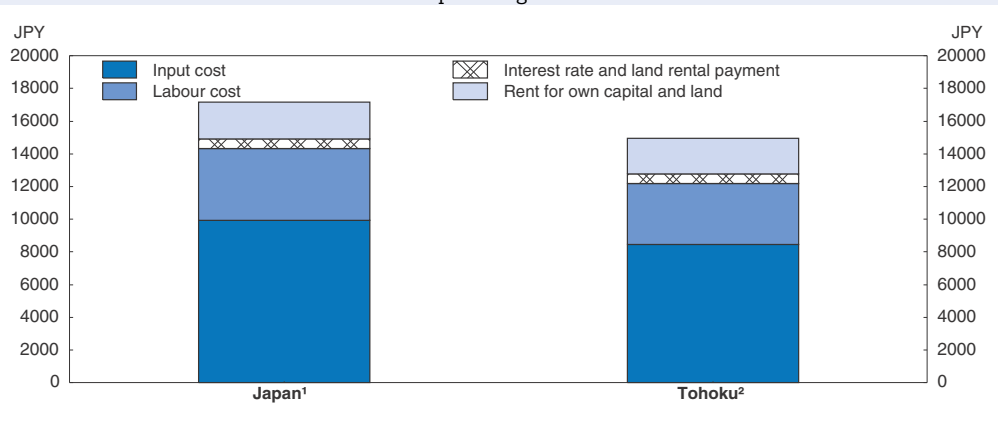
Agricultural reform in the Tohoku region could help make it a model to revitalise Japanese agriculture, while taking account of the current status of reconstruction. The disaster damaged more than 20 000 hectares of farmland and forced nearly 7 000 farms to suspend operations. In addition, the nuclear accident initially led to production restrictions, although the Ministry of Agriculture, Forestry and Fisheries reported in November 2012 that rice produced in Tohoku did not violate safety standards. Measures to move housing located near the coast to higher ground is also forcing changes in land-use patterns. Reconstruction thus provides an opportunity to develop comprehensive land-use plans in farming communities that would transfer land use to efficient producers and deliver economies of scale.

Phasing out the production adjustment programme would allow rice farmers in Tohoku to expand production in the long run, given that a significant portion of Iwate, Miyagi and Fukushima prefectures have a comparative advantage due to favourable climatic and geographical conditions. Indeed, the average production cost in the three prefectures is 15% lower than the national average, excluding Hokkaido (Figure 1.8). Not coincidentally, the average farm size in Tohoku is nearly 50% larger than the nationwide average, excluding Hokkaido.

Box 1.1. **The comparative advantage in agriculture in the three Tohoku prefectures most affected by the disaster** *(cont.)*

Figure 1.8. **The average production cost of rice is relatively low in Tohoku**

Yen per 60 kg in 2010



1. Excluding Hokkaido.
2. The prefectures of Iwate, Miyagi and Fukushima.

Source: Ministry of Agriculture, Forestry and Fisheries (2010b).

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Phasing out production adjustment programmes

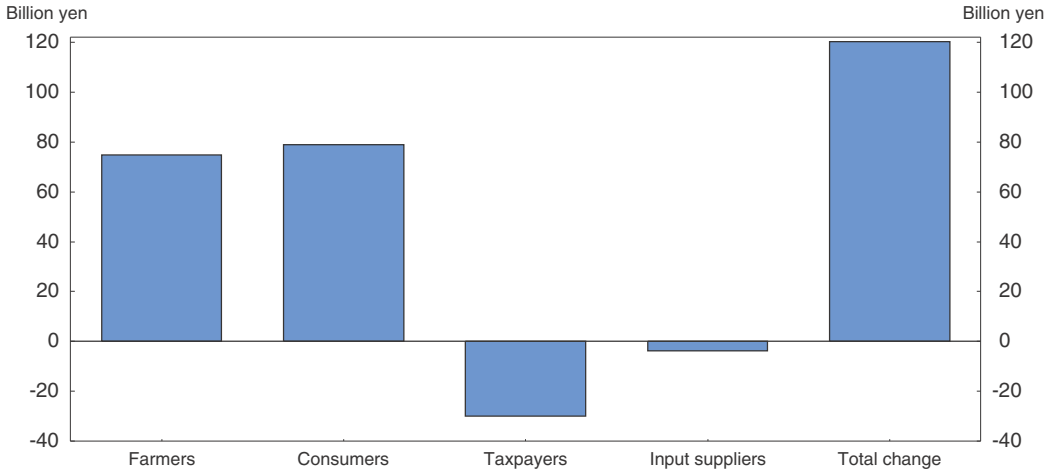
Production adjustment programmes should be phased out over a fixed and relatively short time period, including the subsidies paid to divert paddy land to crops other than rice. In the meantime, the government's role in allocating the production quotas should be reduced, for example by allowing farmers to trade quotas, thereby increasing the share of rice supplied by efficient farms. Eliminating policies controlling production would leave decisions on how much and what to produce in the hands of individual producers, resulting in a number of benefits. *First*, it would reduce the high price of rice, which moreover is positive for the traditional Japanese diet, with its associated health benefits. *Second*, lower prices may create opportunities to export to high-end overseas markets. *Third*, allowing farmers to produce more would help achieve the government's goal of increasing the food self-sufficiency rate. *Fourth*, it would lower the price of paddy land, thus reducing farmers' incentives to substitute other inputs, such as fertiliser and pesticides, which have negative environmental effects. *Fifth*, it would increase the use of paddy fields, thereby improving the multi-functional performance of agriculture.

Phasing out the production adjustment scheme for rice would cause a significant decline in its price, with a negative impact on large farmers who earn a significant share of their income from rice. The negative impact could be mitigated by announcing a clear time-frame in advance. Temporary, time-limited support payments (decoupled from production) could also be provided to large farmers. Because the impact of the price declines on small farmers would be relatively small, as farming accounted for less than 10% of household income for semi-business and side-business farms in 2010 (MAFF, 2011b), such support payments may not be warranted. Transitory payments to large farmers would achieve the goals of sustaining farm income, increasing productivity (by concentrating production in large farms), enhancing food security (by boosting rice production) and encouraging improved environmental performance (Table 1.11).

Introducing decoupled payments targeted to Japan's policy objectives

Existing farm income support for the production of specific commodities should be integrated into the transitory income support, which is decoupled from production and targeted to large farms. The authorities may want to consider other decoupled payments targeted to specific beneficiaries and outcomes. Such payments could be used for environmental services, for example water-buffering to prevent flooding in mountainous areas that are less favourable for production. Such targeted policies have proven to be more effective in improving the environmental performance of agriculture in other OECD countries. Moving away from existing price-based instruments and commodity-specific support would encourage farmers to reallocate land to its most profitable use. The gain to consumers from lower prices would exceed the cost of the direct payments financed by taxpayers, according to the OECD's Policy Evaluation Model (Figure 1.9). In sum, the burden of agricultural policy would be transferred from consumers to taxpayers, while improving economy-wide welfare (OECD, 2009).

Figure 1.9. **Replacing market price supports with direct payments would result in welfare gains**[1]



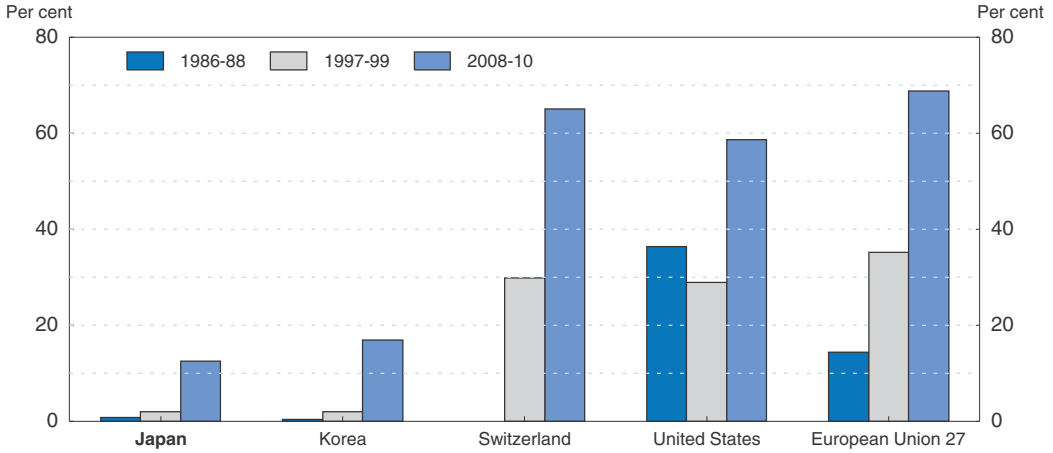
1. Assumes that 270 thousand hectares of land returns to rice production by scaling back the production adjustment programme. This would boost the area used for producing rice by about 17%.

Source: OECD (2009).

StatLink http://dx.doi.org/10.1787/888932797974

The role of decoupled payments has risen markedly in most OECD countries since the mid-1980s, including in the United States, the European Union and Switzerland, demonstrating that a mountainous country with high agricultural support can convert to less distortive payments (Figure 1.10). In contrast, the degree of decoupling of producer support payments in Japan is very low. Boosting such payments would help Japan achieve its goals of supporting farm income and ensuring environmental benefits, while increasing productivity (Table 1.11). Indeed, the 2011 *Basic Policy and Action Plan* stated that shifting the burden of agricultural policy from consumers to taxpayers and reforming direct payment schemes would be seriously considered.

Figure 1.10. **The degree of decoupling in Japan is one of the lowest in the OECD**[1]



1. Calculated based on the impact on production. Zero decoupling means that the production impact of the policy set is as if all support were provided by market price supports.

Source: OECD (2012a).

Reducing barriers to agricultural imports

The 2010 New Growth Strategy set an objective of doubling the cross-border flow of people, goods and money into Japan by 2020 by reducing trade barriers, lifting restrictions on foreign investment and liberalising the movement of people into Japan. However, the 2010 *Basic Policy on Comprehensive Economic Partnerships* acknowledged that Japan is falling behind other countries in establishing high-level EPAs. Agricultural support based on high border protection of key commodities, combined with domestic supply management policy, is not compatible with an open market regime necessary for comprehensive trade agreements. The 2010 *Basic Policy* called for shifting agricultural support away from import restrictions, whose cost is largely borne by consumers, towards more transparent support based on fiscal measures and reforming the direct payment scheme. However, no concrete policy plan has been announced to achieve this goal.

In July 2012, the government announced an objective of boosting the share of Japan's trade covered by EPAs from 19% to 80%. To achieve this goal, the government should step up its efforts to conclude the ongoing EPA negotiations with Australia, launch negotiations with the European Union and promote regional economic partnerships such as the China-Japan-Korea FTA and the Comprehensive Economic Partnership in East Asia. In March 2013, the new government decided to take part in the negotiations for the Trans-Pacific Partnership (TPP) Agreement, while promising to take every effort to defend the interests of Japanese agriculture. According to the government's estimate, the overall economic impact of the TPP due to tariff elimination is projected to be positive, with real GDP increasing by 3.2 trillion yen (around 0.7% of GDP) in the mid to long term, including a decrease in production of agricultural goods (Cabinet Secretariat, 2013).

Reducing trade barriers would also boost Japan's stock of inward FDI, which was only 3.8% of GDP in 2011, the lowest in the OECD area. One objective of the 2010 New Growth Strategy is to "invite foreign firms that bring high value-added products and services into Japan and double employment by foreign firms". The stock of FDI in OECD countries is positively correlated with openness to trade and there is a significant and positive correlation between a country's trade openness and the gains it reaps from a foreign presence (2006 *OECD Economic Survey of Japan*).

Promoting farm consolidation through land policy reform

Phasing out the production adjustment programme, shifting from MPS to decoupled payments targeted to large farmers and lowering border measures will reduce the incentives for small-scale producers to hold land for speculative purposes. However, achieving the 2011 goal of having a majority of farm entities with 20-30 hectares in flat-land areas requires, in addition, specific policies to improve land markets, which is crucial to establishing a more competitive and successful agricultural sector. Land markets should become more dynamic and obstacles to transactions reduced. Land-use regulation on agricultural areas should be more transparent, with a more predictable framework for the conversion of farmland to non-farmland use, thereby enabling small farmers to make well-informed decisions on whether to hold their land or transfer it to more efficient producers. Such reforms would boost productivity and achieve environmental and food security objectives by moderating the transfer of agricultural land to other sectors (Table 1.11). The reconstruction of the Tohoku region is an opportunity to design comprehensive and transparent land-use plans, as well as to facilitate the entry of new entrants to agriculture, using Tohoku as a pilot project.

Other policies are also needed to promote land consolidation. *First*, facilitating the entry of new farmers, in part by allowing non-agricultural corporations to own farmland, would foster farm consolidation, while bringing new capital into farming. Under current regulations, the supply of new farmers is largely limited to the children of current farmers. *Second*, the tax rate on holding idle farmland near urban areas should be increased to discourage the holding of idle land in hopes of converting it to non-agricultural use and realising capital gains. *Third*, it is important to ensure that the "farmland use facilitation groups" in each municipality are effective in promoting farm consolidation.

Ensuring food security

The risk that food supplies could temporarily fall below the physical requirements of the population makes food security a concern, although such concerns stem largely from times when global trade was less developed than today. The most important risk pertains to price rather than quantity, as occurred in the price hike of 2007-08, making the adequate supply of food in the global market a continuing concern. Japan's targets for food self-sufficiency (Figure 1.6) must be compatible with the priority of creating a more open, market-based agricultural sector. Therefore, multiple criteria should be established to assess the exposure to food security risk. While food self-sufficiency is thought to reduce the risk related to the disruption of trade in food, Japan would remain vulnerable to a disruption of other imports, notably energy, needed for food production. A comprehensive food security strategy should include:

- A more dynamic agricultural sector in Japan that produces a wider range of high-value foods in line with its competitive advantages for domestic and export markets.
- Adequate emergency food reserves to mitigate any temporary supply shortfalls.
- Reduced border measures to enhance reliable access to a secure, diversified and cheaper food supply from multiple sources. In addition, more open agricultural markets would allow Japan to adopt a more aggressive stance in multilateral, regional and bilateral trade negotiations, thereby benefitting the entire economy.

- Conservation of an adequate agricultural resource base, most notably paddy land, to cope with the tail risk of food shortages.

Conclusion: agricultural reform in Japan is urgent

The problems of Japanese agriculture – in particular low productivity and the prevalence of part-time farmers and small plots – have been evident for the past 50 years. Continued failure to implement necessary reforms threatens the future of the agricultural sector. In the absence of fundamental reform, the agricultural sector will continue to wither, trapped in a cycle of low productivity, low earnings and dependence on subsidies and import protection. While the shift of the burden of agricultural support from consumers to taxpayers would temporarily increase government spending, the time for reform is now. A more open and market-oriented sector would also facilitate Japan's participation in comprehensive regional and bilateral trade agreements that would boost its overall growth potential. A range of reforms, summarised in Box 1.2, are needed to increase competition and promote the development of a competitive and dynamic agricultural sector.

Box 1.2. **Summary of recommendations to reform agriculture and promote Japan's integration in the world economy**

Phase out the production adjustment programmes

- End the production adjustment programmes over a fixed and relatively short time period to allow farmers to decide how much and where to produce, thus allowing efficient farmers to increase production, while reducing production costs.
- Provide temporary support payments to large farmers to compensate for the fall in food prices resulting from the phasing out of the production adjustment programmes.

Introduce decoupled payments targeted to explicit objectives

- Integrate existing support for the production of specific commodities into the transitory income support for large farmers.
- Introduce new decoupled payments targeted to specific beneficiaries and outcomes, such as environmental services for water buffering in mountainous areas not suitable for large farms.

Promote the consolidation of farmland to lower production costs

- Ensure the transparency of land-use regulation and provide a more predictable framework for the conversion of farmland to other uses.
- Develop an efficient farmland market to remove obstacles to needed structural adjustment, in part by allowing non-farm corporations to own farmland.
- Reform the tax system to discourage the holding of idle farmland near urban areas.
- Make the "farmland use facilitation groups" in each municipality an effective force promoting farm consolidation.

Increase Japan's integration in the world economy

- Remove border measures on agricultural products as reforms advance, thus reducing prices and costs for consumers and accelerating Japan's participation in comprehensive multilateral, regional and bilateral trade agreements.

Box 1.2. **Summary of recommendations to reform agriculture and promote Japan's integration in the world economy** *(cont.)*

Ensure food security

- Ensure adequate food supply through a more competitive agricultural sector, access to stable supplies of imports and emergency reserves.
- Use a decoupled payment for environmental services to preserve paddy land to cope with any future risks to food security.
- Focus on food security based on a dynamic agricultural sector, a diversification of trade partners, reserves and the preservation of the agricultural resource base.

Restructuring the electricity sector and promoting green growth

Weaknesses in Japan's electricity market prompted the government to launch a reform programme in 1995 that led to the introduction of competition in power generation and retailing. However, the impact of liberalisation has been limited thus far and electricity prices remain high, contributing to the erosion of the competitiveness of Japanese firms in global markets. Still, until the 2011 disaster, Japan's "partially-liberalised" electricity sector (METI, 2011) performed well in terms of service quality and safety, providing a stable supply of electricity and attracting sufficient investment to meet rising demand.

The 2011 disaster raised fundamental questions about the electricity system's ability to prevent and respond to accidents. The International Atomic Energy Agency (IAEA) classified the nuclear accident as level 7, the most serious category, resulting in a "major release of radioactive material with widespread health and environmental effects".[7] While the accident was caused by a tsunami of exceptional magnitude, its severity focused concern on safety standards. Moreover, the inadequate response by the government and the Tokyo Electric Power Company (TEPCO), the operator of the Fukushima plant, intensified public anxiety about nuclear power. The electricity system has had difficulty coping with the shortages caused by the accident. For example, electricity surpluses in some regions could not offset shortages elsewhere due to inadequate interconnection facilities. In addition, weak market mechanisms forced the government to rely on inefficient policies, such as rolling blackouts and across-the-board cuts, to cope with shortages.

The tragedy of the Great East Japan Earthquake prompted the government to launch a debate on the country's energy strategy, including a reduced role for nuclear power. The shift away from nuclear makes it more important than ever to develop renewable energy sources, thereby promoting green growth. Expanding the role of renewables depends, in turn, on reforming the electricity sector. Given the higher price of renewables, it is important to promote efficiency to limit any rise in the already-high electricity price. This section provides an overview of Japan's electricity sector and discusses the government's efforts to cope with the 2011 disaster. It then draws the lessons from the disaster for the electricity sector and examines the government's 2012 energy plans. An agenda for reforming the electricity sector and promoting green growth is presented in the final section, with recommendations summarised in Box 1.4.

The structure of Japan's electricity sector

The gradual liberalisation of Japan's electric power system

Japan's electricity system was long dominated by ten vertically-integrated utilities, created in 1951, with monopoly power in their respective regions. These companies – known as general electric utilities – owned three-quarters of electricity generation capacity in 1995 and owned and operated the transmission and distribution networks. Together, they supplied 88% of Japan's total electricity consumption, with wholesale electric utilities and private generators accounting for the rest (Figure 1.11).

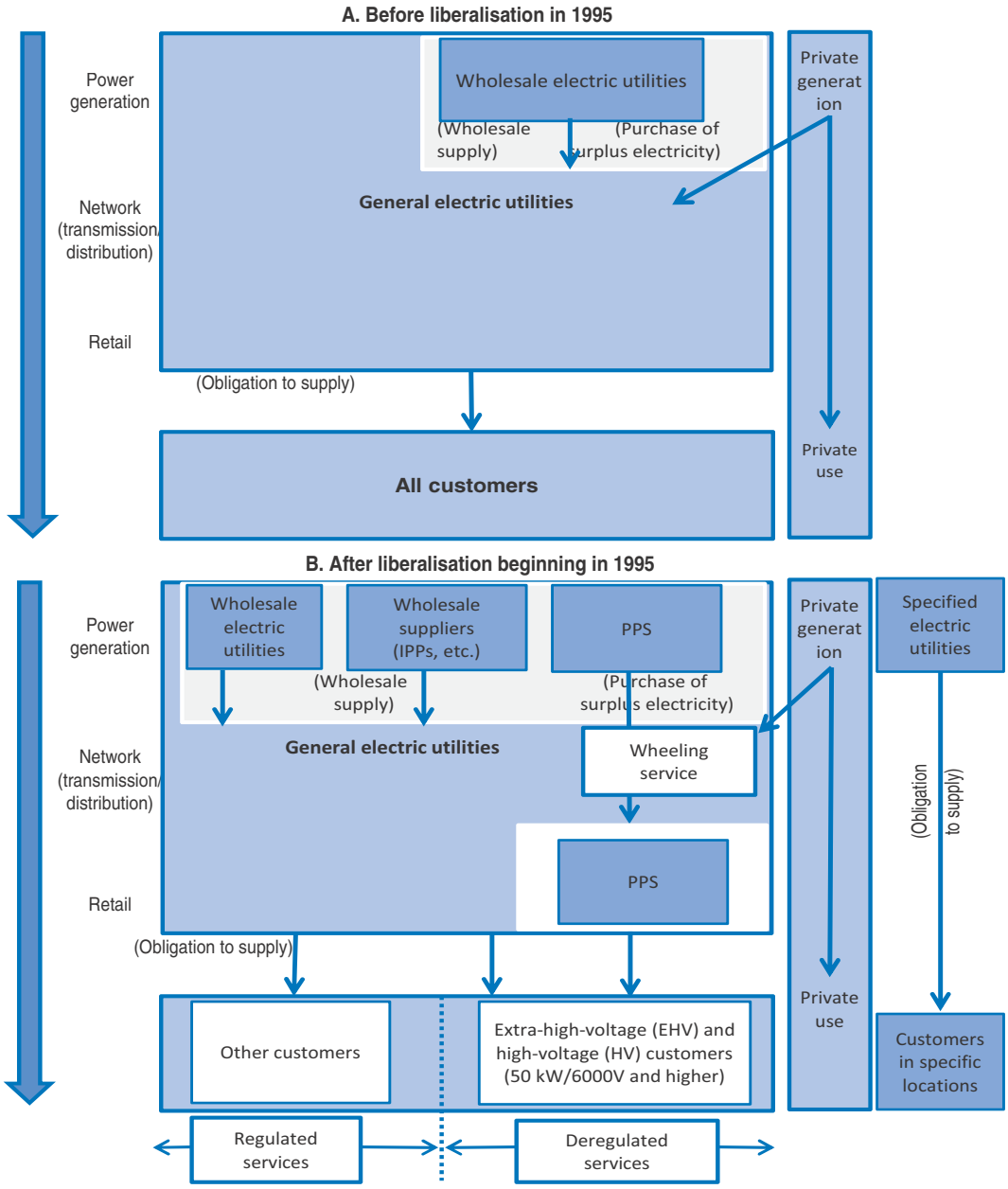
Japan joined the international trend toward greater competition in the electricity sector in the mid-1990s, as part of the liberalisation of key sectors, such as finance, transport and telecommunications, as Japan tried to overcome the economic stagnation caused by the collapse of the bubble economy. In the electricity sector, reform was driven in part by pressure to reduce the gap between domestic and international electricity prices (Asano, 2006). After long debate, the government launched a gradual reform process that tried to balance enhanced efficiency with other objectives such as supply reliability, energy security and environmental protection. The first step was to allow new wholesale suppliers, Independent Power Producers (IPPs), to generate power and deliver electricity to the general electric utilities (Figure 1.11, Panel B). In addition, the utilities were allowed to procure electricity from other utilities, as well as the IPPs, thus expanding the wholesale market. Such reform opened the door to new entrants to challenge the utilities' regional monopoly position.

Competition was introduced in the retail market beginning in 1999 by allowing Power Producers and Suppliers (PPS) to deliver electricity directly to eligible consumers using the transmission network of the general electric utilities (Figure 1.11, Panel B). The threshold for retail choice was gradually lowered. By 2005, 63% of customers (those consuming 50 kW or more) were allowed to choose a supplier. However, the PPS's retail market share was still small at 2.8% in 2009.

The institutional infrastructure has evolved in line with market liberalisation. To promote transactions in the wholesale market, the Japan Electric Power Exchange (JEPX), a private non-profit organisation composed of 21 investors, such as the general electric utilities and new power generators, was established in 2003. Participation in the wholesale market is voluntary. The following year, the Electric Power System Council of Japan (ESCJ) was designated as a "neutral transmission system organisation". The ESCJ, a self-governing agency operated by private entities, such as the general electric utilities and IPPs, plays a key role in setting rules, providing market oversight and settling disputes to ensure fairness and transparency in transmission and distribution. The Ministry of Economy, Trade and Industry (METI) oversees the electricity sector, with overall responsibility for regulation and supervision.

Successful liberalisation of power generation requires a level playing field among power suppliers, including a neutral transmission system. The general electric utilities, which own and operate the transmission network, must be prevented from subsidising their generation and retailing activities, which operate in competitive markets. In short, neutrality requires "unbundling" – separating the monopolistic network-related services (*i.e.* transmission and distribution) from the competitive commercial functions of generation and retail. There are various types of unbundling – management, accounting, legal (for example, creating a holding company structure) and ownership. Japan opted for the relatively weak option of accounting unbundling in 2003, which does not separate ownership but requires separate accounting for the different services. In addition, the

Figure 1.11. **Electric power system before and after liberalisation**



1. The definition of each business is as following; *i)* **wholesale electric utilities** are firms with generation capacity of 2 million kW or above that supply electricity to the general electric utilities. J-Power and Japan Atomic Power Company are examples of such firms; *ii)* **wholesale suppliers**, such as IPPs, are firms other than wholesale electric utilities. They supply the general electric utilities based on contracts for 1 000 kW or more for at least 10 years, or for 100 000 kW or more for at least five years; *iii)* **power producers and suppliers** (PPSs) are firms that supply electricity to customers contracted for 50 kW or more**,** using the power line networks of the general electric utilities; and *iv)* **specified electric utilities** are firms supplying electricity to certain defined areas using their own power generation and distribution facilities, such as power lines.

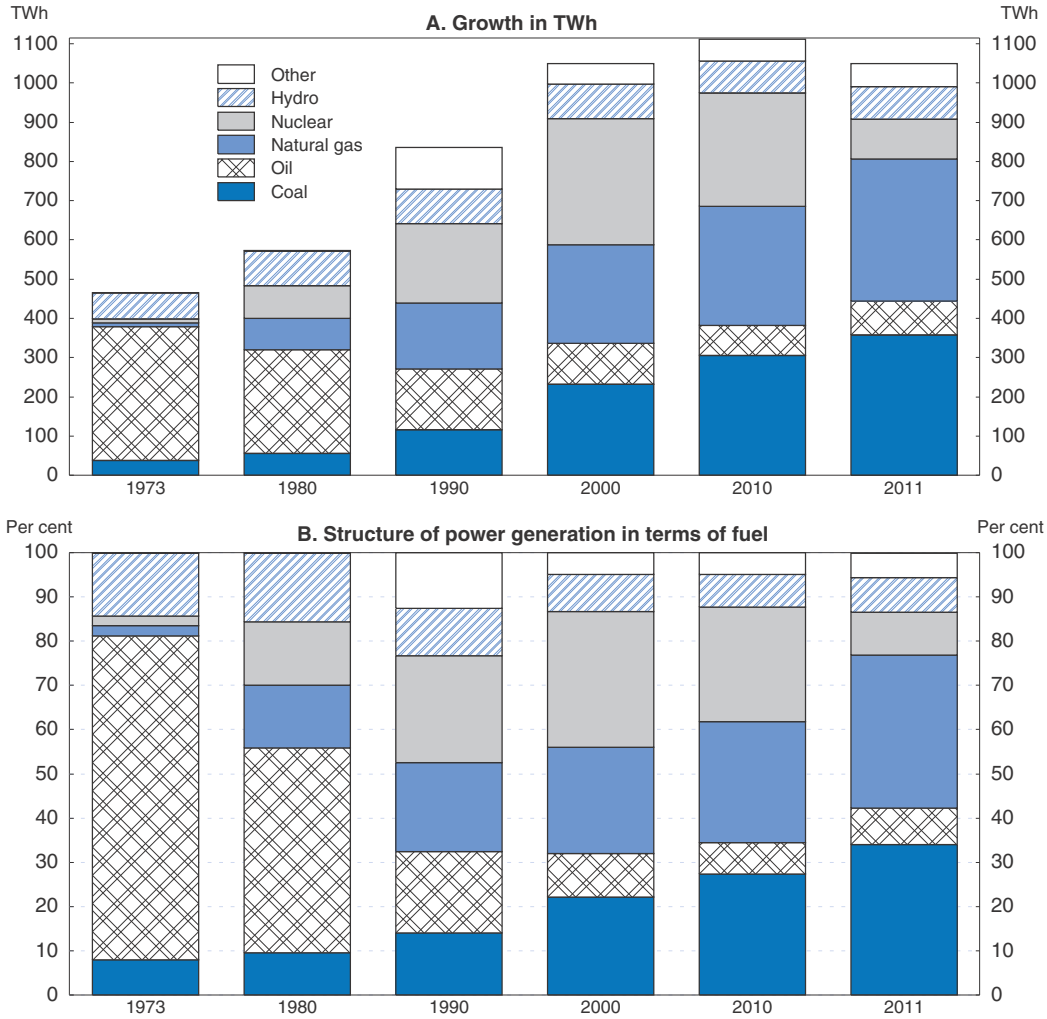
Source: TEPCO (2010).

government introduced rules of conduct, such as prohibiting discriminatory treatment. The price of using the transmission system ("wheeling tariffs") must be set in accordance with regulations established by METI and reported to it.

Supply, demand and price of electricity prior to the 2011 disaster

The development of electricity in Japan, the second largest electricity market in the OECD, was driven by coal and nuclear power, while the share of oil fell from 73% at the time of the first oil shock to only 7% by 2010 (Figure 1.12). Japan had a more balanced energy mix, with coal, natural gas and nuclear energy each accounting for about 30% of power generation in 2010. Despite the expanded role of coal and natural gas, the share of fossil fuels fell from 83% of generation in 1973 to 62% in 2010, due to the rising dependence on nuclear power. The role of renewable energy (excluding hydro) has remained small, accounting for less than 3% in 2010 (Panel B). Investment has been adequate to keep peak supply at least 10% above peak demand in most years. However, the consumer price of electricity is high by international standards, particularly in the industrial sector, where it is second highest in the OECD (Figure 1.13). This is one factor eroding the competitiveness of Japanese firms.

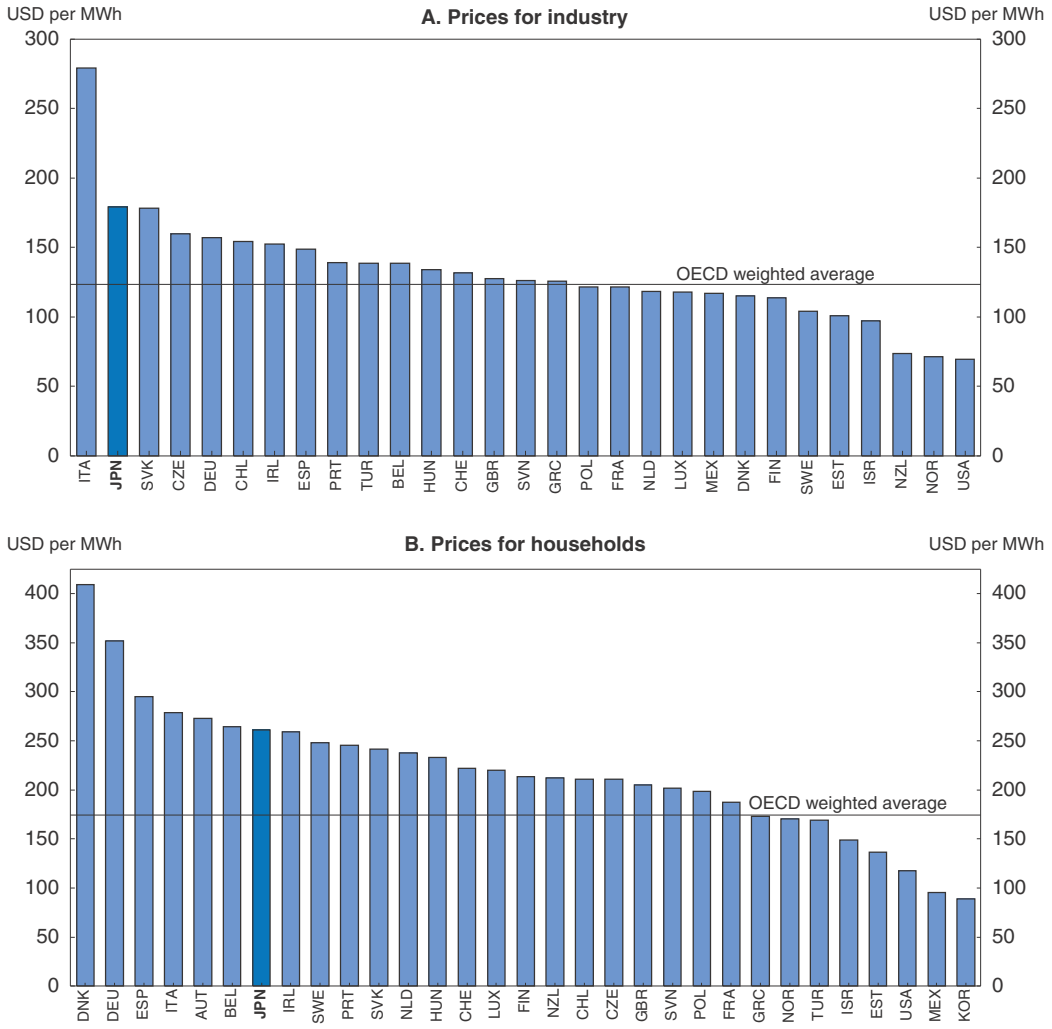
Figure 1.12. **Development of electric power generation in Japan**



Source: IEA (2012a).

StatLink http://dx.doi.org/10.1787/888932797993

Figure 1.13. **Electricity prices in Japan were relatively high in 2011**[1]



1. Using market exchange rates. Prices include taxes.
Source: IEA (2012b).

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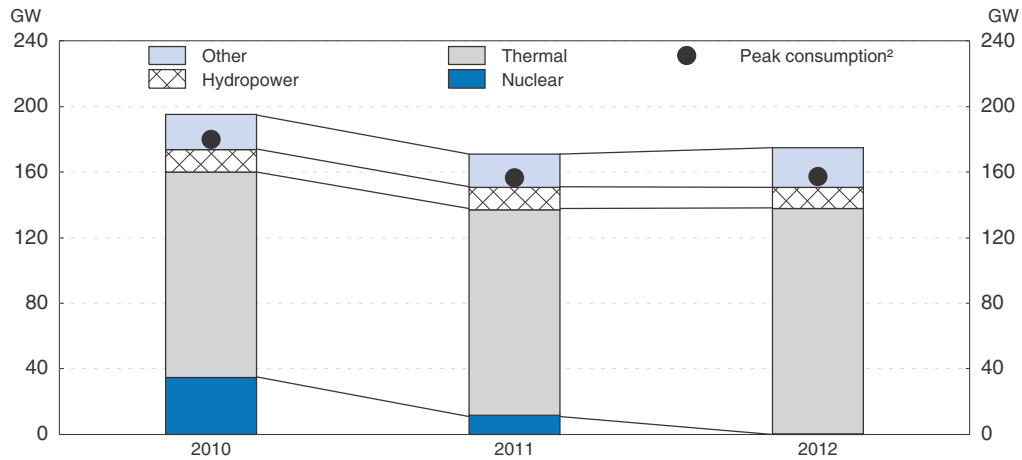
The response of the electricity sector to the Great East Japan Earthquake

The nuclear accident caused a loss of confidence in the safety of Japan's 50 nuclear power plants, prompting the government to change its energy strategy. Reactors that suspended operations for safety checks were left closed, leaving Japan with no operating nuclear plants in May 2012.[8] The sudden stoppage of nuclear power, which had accounted for around one-third of total electricity production, reduced capacity more than 12% in the summer of 2011 relative to a year earlier, to 171 GW. As it was well below the peak summer-time demand of 180 GW in 2010 (Figure 1.14), METI expected significant energy shortages in parts of Japan, particularly in areas dependent on nuclear power. The government requested all electricity users in the Tokyo and Tohoku regions to cut consumption by more than 15% compared to 2010 (ANRE and METI, 2012). The reduction was legally mandatory for enterprises with supply contracts of 500 kW or more. Households living in the western

Figure 1.14. **Electricity supply capacity has fallen since 2010**[1]



1. Excluding Okinawa.
2. In summertime in GW.

Source: Agency for Natural Resources and Energy and the Ministry of Economy, Trade and Industry.

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part of Japan were asked to reduce electricity consumption by 10%, although there was no legal obligation.

In the event, the energy saving target was exceeded, with peak consumption in the summer of 2011 falling by 13% relative to 2010, thereby avoiding shortages, thanks in part to a relatively mild summer, reducing demand for air conditioning. Most importantly, major consumers reduced consumption by 29% in the TEPCO service area (IEEJ, 2012). A survey found that manufacturers reduced energy consumption during peak periods by shifting production to weekends, early morning or late evening hours, thereby avoiding the need for blackouts (Keidanren, 2011). Firms also installed on-site power generation equipment and purchased energy-efficient equipment. While these countermeasures helped, they raised energy costs and disrupted production chains and employees' lives. Between 60% and 80% of manufacturers in the Keidanren survey replied that their production, investment and revenue would be adversely affected if the tight supply-demand situation were to continue for two or three years.

In 2012, electricity supply capacity remained level, as the increase in thermal and other sources nearly offset a further fall in nuclear capacity (Figure 1.14). In May 2012, the government projected that while nationwide supply would fall only slightly short of demand during the summer, there would be shortages in four of the general electrical utility regions, including a 15% deficit in the Kansai region. The government, therefore, asked consumers to reduce energy consumption during peak times.[9] With total consumption remaining close to the level of 2011 – about 13% below the 2010 level – shortages were once again avoided.

The suspension of nuclear plants' operations was partially offset by higher imports of fossil fuels – oil, LPG, LNG and coal – to increase generation at thermal plants. Japan recorded a trade deficit in 2011 for the first time since 1980, with the additional energy imports accounting for about one-third of the deterioration in the balance. The trade deficit widened to around 1.5% of GDP in 2012. Higher imports, in turn, led to a hike in electricity prices. TEPCO, which supplies about one-third of the energy consumed in Japan,

raised its electricity tariffs by 15% for firms in April 2012 and by 8.5% for households in September 2012, further pushing up the already high energy prices. Other general electric utilities, notably those in Kansai and Kyushu, are expected to follow TEPCO in raising their tariffs as well. The renewed reliance on fossil fuels also has a negative environmental impact, including increased greenhouse gas (GHG) emissions.

Lessons from the Great East Japan Earthquake for the electricity sector

Weak safety supervision left Japan vulnerable to the nuclear accident

The March 2011 disaster revealed that weak safety supervision had left Japan vulnerable to a nuclear accident. The report to the Diet from the Fukushima Nuclear Accident Independent Investigation Commission[10] in 2012 concluded that the "accident was the result of collusion between the government, the regulators and TEPCO, and the lack of governance by said parties. They effectively betrayed the nation's right to be safe from nuclear accidents. Therefore, we conclude that the accident was clearly 'manmade'. We believe that the root causes were the organisational and regulatory systems". The report noted that researchers had warned about the high probabilities that tsunami levels would surpass the assumptions made at the time of the construction of the Fukushima plant in the late 1960s. Moreover, the then-regulator, the Nuclear and Industrial Safety Agency (NISA), and TEPCO had also been aware since 2007 that a tsunami could cause a total outage of electric power and that the breakdown of seawater pumps caused by a power outage would damage nuclear power stations significantly. The report stated that "There were many opportunities for taking preventive measures prior to March 11. The accident occurred because TEPCO did not take these measures, and NISA and the Nuclear Safety Commission (NSC) went along". TEPCO instead chose "to aggressively oppose new safety regulations and draw out negotiations with regulators".

The Commission also reported that the preventive measures required by NISA and implemented by TEPCO were not up to international standards. For example, the current Japanese standards for severe accidents are made on the basis of internal factors, such as human error, and exclude external factors such as earthquakes and tsunamis, even though Japan is very vulnerable to such disasters. From 2010, the regulators tried to upgrade accident prevention standards in line with global trends. However, the operator successfully lobbied with NISA to maintain lax safety standards rather than focusing on preparations against accidents. In addition, another study of the accident found that Japanese regulators and operators had not been very co-operative with the IAEA prior to the earthquake (Rebuild Japan Initiative Foundation, 2011).[11]

The regulatory failure stemmed largely from the fact that the agencies in charge of promoting the development of the nuclear industry and regulating it are not effectively separated. NISA, which was responsible for regulating nuclear power operators, was a subordinate institution of METI, which is responsible for promoting the nuclear industry. According to a government report to the IAEA in June 2011, "NISA's lack of independence from METI, which promotes the use of nuclear power, hampered a quick response to the disaster at TEPCO's Fukushima Dai-Ichi plant this year". Japan had strong incentives to promote nuclear power. *First*, it was an effective option to raise Japan's low energy self-sufficiency ratio of 4% in 2009, one of the lowest in the OECD area, and reduce its vulnerability to energy shocks. *Second*, nuclear energy would help Japan achieve its target for reducing GHG emissions, given that nuclear power does not generate CO_2. *Third*, the nuclear power industry was a potential growth engine for Japan, one of the few countries

with experience in building and operating nuclear power plants. Indeed, the previous Japanese Basic Energy Plan set a target of increasing the share of nuclear energy up to 50% of total electricity production in 2030.

Given the benefits of nuclear power, strong interest groups in industry, government and academia and local leaders supported the nuclear industry while deliberately disregarding the associated risks. The pressure to promote nuclear power, rather than focus on safety, inhibited regulators from taking aggressive actions against operators. In fact, the Commission's report criticises the regulators for not giving any specific instructions for enhancing safety measures and, instead, allowing operators to postpone preparations against disasters.

A market structure based on regional monopolies limited the supply response to shortages

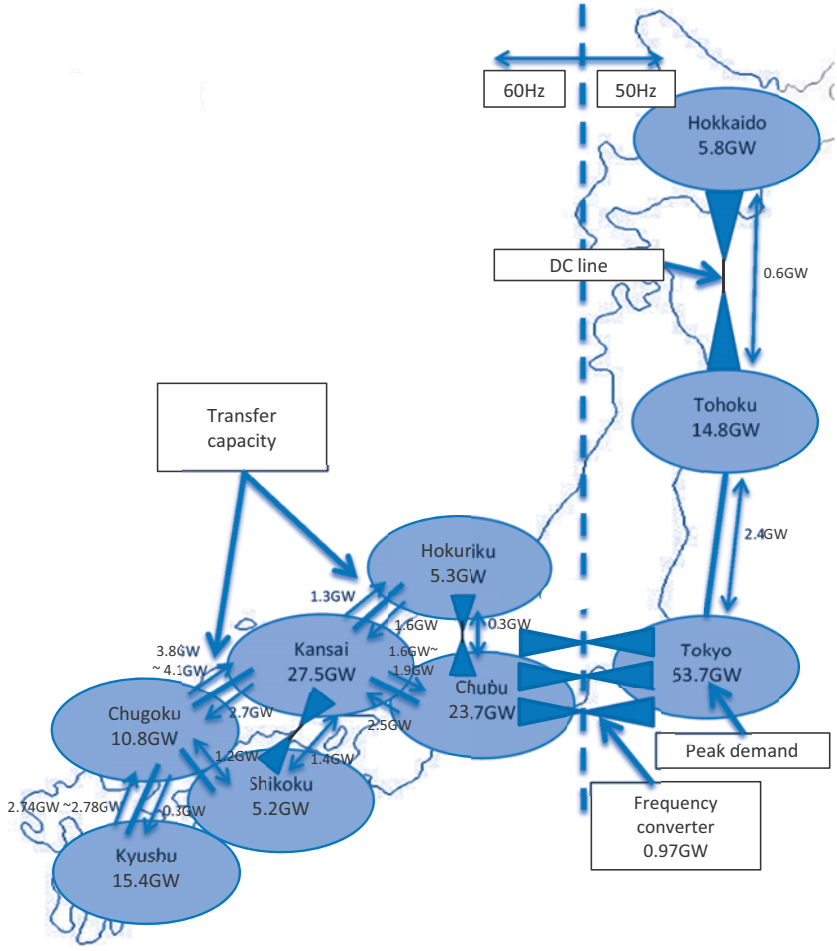
Given the regional monopolies and the lack of interconnection capacity between regions, an electricity shortage in one region could not be effectively offset with surplus electricity from other areas. Indeed, the government requires the ten general electric utilities to achieve self-sufficiency, with the capacity to satisfy every demand within their service area, rather than connecting with other regions. For example, the interaction capacity for TEPCO is 3.4 GW (1.0 GW from Chubu and 2.4 GW from Tohoku), amounting to only 6.3% of peak demand (Figure 1.15). Interconnections between regions were mainly intended as a back-up for security purposes, leaving the regions insufficiently connected to each other (Hatta, 2012 and IEA, 2008).

In addition to limited interconnection facilities, the division of Japan into two separate regions using different frequencies – 50 Hz and 60 Hz – restricts the transfer of electricity supply (Figure 1.15). As a result, TEPCO, which uses a frequency of 50 Hz, was effectively cut off from western Japan which was not damaged by the earthquake and tsunami (Kawai and Morgan, 2012). Three frequency converter facilities (FCF) connect the two regions, but their total capacity was too small to cover the large electricity shortage resulting from the March 2011 disaster. Consequently, TEPCO was forced to implement rolling blackouts. The government estimates the direct cost of integrating frequency across Japan at about 10 trillion yen (2% of GDP). The lack of interconnection and FCF remains problematic as only two of 50 nuclear power plants are in operation.

Weakness of the price mechanisms to adjust supply and demand

In addition to the segmented power network, the electricity system lacks an efficient mechanism to modify supply and demand in line with current conditions. The law stipulates that supply and demand must balance at all times to avoid blackouts. When that is impossible, due to accidents or unforeseen problems, utilities must modify demand. For example, in the two weeks following the earthquake, TEPCO implemented rolling blackouts to maintain overall balance by stopping energy supplies to a restricted area. Another option is mandatory energy saving by customers within designated areas. Under the Electricity Business Act, the Minister of METI can order energy saving "when it seems that if no adjustment is made to the supply and demand of electricity, a shortage of electricity supply will adversely affect the national economy, standard of living or public interest". As noted above, the Minister ordered large-scale users with contracts for 500 kW or more within the TEPCO service area to reduce electricity consumption by 15% during the summer of 2011 compared to the summer of 2010 to cope with the electricity shortage.

Figure 1.15. **Nationwide transmission network of electricity in Japan**[1]



1. The numbers in the circles for each general electric utility show peak demand. The numbers next to the arrows show how much electricity can be transferred.

Source: Institute of Energy Economics, Japan.

However, these measures are not efficient, as they require every consumer to reduce energy consumption by a similar amount regardless of the cost of energy conservation or the services they produce. For example, during the blackouts in 2011, the energy supply to public services, such as hospitals and traffic signals, was halted with serious adverse effects (Hatta, 2012). Market mechanisms that reflect consumer preferences would have less negative economic impact than arbitrary instruments such as rolling blackouts or forced energy savings. In a fully liberalised market, price movements help balance supply and demand based on the preferences of suppliers and consumers.

Despite electricity market reforms since 1995, the price mechanism does not work in Japan. Most importantly, the widespread reliance on "right-of-use-contracts" weakens incentives of both large-scale consumers and suppliers to modify energy consumption and supply in line with market conditions. Such contracts allow customers to consume as much power as they want at a fixed rate. The prevalence of such contracts reflects the domination of the retail market by vertically-integrated general electric utilities, with little incentive to adopt the "definite-quantity contract", which specifies both prices and the volumes of transactions. With the price fixed under the right-of-use contract, consumers

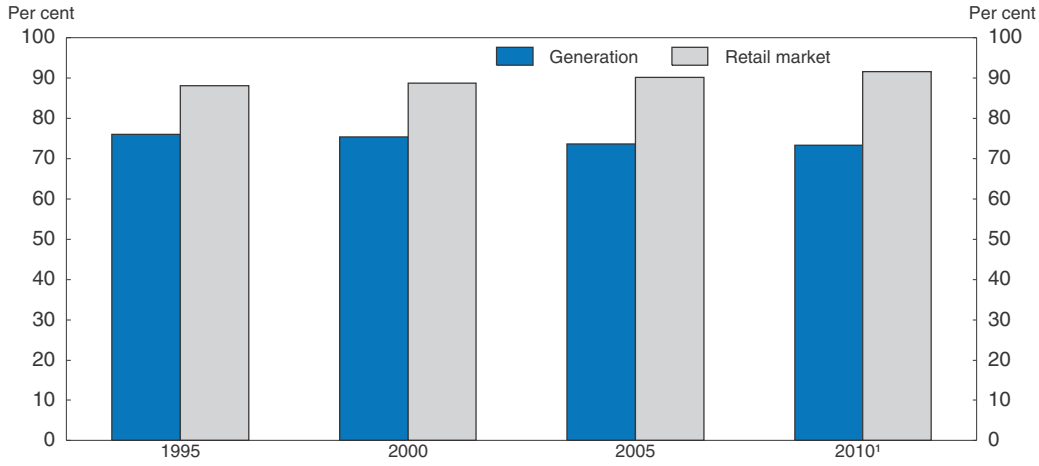
have weak incentives to reduce their energy consumption even when an electricity shortage is expected. Similarly, suppliers have weak incentives to increase output when supply-demand conditions are tight. The lack of an effective price mechanism also discourages the utilisation of Japan's numerous private electricity generators in response to tight supply and demand situations.[12] As a result, blackouts are inevitable when demand exceeds supply.

The continued dominance of regional monopolies hinders the development of market mechanisms

The slow and ineffective liberalisation pursued by the government since 1995 has left market mechanisms weak. In particular, the role and influence of general electric utilities has changed little, as they remain vertically integrated and regional monopolies. Indeed, their share of power generation has remained around 75% since 1995 (Figure 1.16). The dominance of the general electric utilities is reflected in the structure of the wholesale and retail markets. Trading volume in the wholesale market, the JEPX, which was established in 2005, still amounted to only 0.5% of power generation in 2010 (Figure 1.17), much less than in other wholesale electricity markets. According to the IEA (2008), spot turnover in successful power exchanges ranges from 20% to 70% of total demand.

The general electric utilities also dominate the retail market. If the PPSs' supply does not meet the demand from their customers, the utilities make up the difference, while charging a penalty known as the imbalance fee on power suppliers.[13] The heavy penalty for failing to meet the moment-to-moment matching discourages potential new entrants. On the other hand, if the PPSs have excess supply, it is taken by the general electric utilities with no compensation. The PPSs thus have no incentive to increase output above the demand from their own consumers, even when an overall electricity shortage is expected. While the share of the PPSs doubled from 1.4% in 2004 to 2.8% in 2009 in the liberalised high-voltage segments, it remains small. Meanwhile, the share of the general electric utilities has risen slightly since 1995, reaching 92% in 2010.

Figure 1.16. **The share of the general electric utilities in electricity generation and the retail market remains high**



1. 2009 for the retail market.
Source: FEPC (2012).

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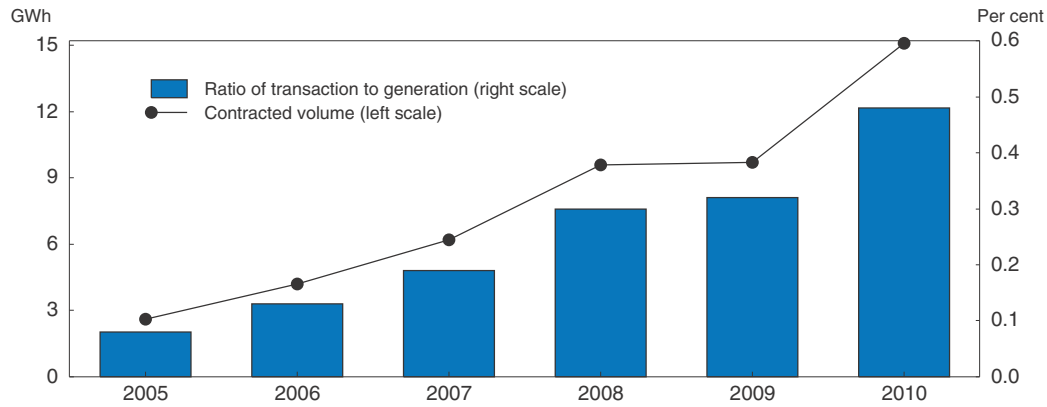
Figure 1.17. **Trading volume in the Japan Electric Power Exchange remains small**

Average contracted per day in GWh



Source: JEPX and FEPC.

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Japan's 2012 energy policy plans

Before the Great East Japan Earthquake, Japan had aimed at ensuring a stable energy supply and addressing global warming by increasing its dependence on nuclear energy. The review of energy policy after the disaster led to the *Innovative Strategy for Energy and the Environment* announced in September 2012, which focused on reducing the role of nuclear energy, while promoting renewable energy (Box 1.3). Renewable energy is key, along with improving energy efficiency, to achieving the *Strategy*'s new target of reducing Japan's domestic GHG emissions by about 20% from the 1990 level in 2030, which is less ambitious than the previous target of a 25% reduction by 2020. The *Strategy,* which is intended as a map for future reform and is not legally binding, is currently under review by the new government.

This report came on the heels of METI's new basic policy on electricity system reform (METI, 2012), which argued that electricity reform is urgent on a number of grounds: *i)* the change in the energy mix with the decline in nuclear power; *ii)* the increase in energy costs; *iii)* the need to shift from ensuring enough supply to meet demand to focusing on containing demand; *iv)* the need for the public to choose the type of electricity and its supplier; and *v)* the importance of optimising supply and demand across regions by breaking down regional monopolies (Box 1.3). Three main reform objectives were spelled out:

- Ensuring the freedom of choice of electricity for all people.
- Allowing everyone to create electricity.
- Delivering electricity widely and neutrally.

This would open the electricity system to all consumers and suppliers and ensure supply-demand balance through competition and selection. In April 2013, the Cabinet decided on an electricity reform plan with major reforms planned by 2020, including the full liberalisation of the electricity retail market and legal unbundling.

Policies to restructure the electricity sector

The decision to reduce the role of nuclear power will fundamentally change the electricity sector, making it time to resume the liberalisation of this sector. Moreover, the

Box 1.3. **Recent energy policy strategies announced by the former government**

Innovative Strategy for Energy and the Environment (September 2012)

1. *Achieving a society not dependent on nuclear power as early as possible, based on three guiding principles:*
   - Strictly apply the rules limiting the operation of nuclear power plants to 40 years.
   - Restart nuclear power plants only once the Nuclear Regulation Authority gives its safety assurance.
   - Prohibit the planning and construction of nuclear power plants.

   These steps may "even enable zero operation of nuclear power plants in the 2030s".
2. *Realisation of a green energy revolution:*
   - Electricity saving: Reduce electricity use by 10% from its 2010 level by 2030.
   - Energy saving: Reduce total energy use by 19% from its 2010 level by 2030.
   - Renewable energy: Nearly triple its output from 110 billion kWh in 2010 to 300 billion kWh by 2030. Excluding hydro, renewable energy is to increase by a factor of eight (25 billion kWh to 190 billion kWh).
3. *Ensuring a stable supply of energy through:*
   - Development of advanced thermal power generation, including LNG and coal.
   - Intensive use of heat, including cogeneration systems.
   - Technologies related to next generation energy, such as carbon dioxide capture and storage.
   - Stable and inexpensive supplies of fossil fuels by strengthening comprehensive bilateral relationships with resource-rich countries and supporting the acquisition of upstream interests by Japanese companies.
4. *Bold reform of the electricity system:*
   - Promotion of competition in power generation and the retail market.
   - Separation of generation from transmission and distribution, either functionally or legally, while enhancing the inter-regional and intra-regional power grids.
5. *Implementation of global warming countermeasures:*
   - Japan has a target of reducing its GHG emissions by 80% by 2050 and reducing domestic emissions by about 20% from their 1990 level in 2030.
   - The government was to formulate its "Global Warming Action Plan" for the period from 2013 by the end of 2012.

Basic Policy on Electricity System Reform (July 2012)

1. *Reform of demand side (electricity retailing)*
   - Full liberalisation of retail market by abolishing the general electricity utilities' regional monopolies.
   - Abolishment of rate regulation.
2. *Reform of supply side (power generation)*
   - Full liberalisation of power generation by removing regulations on the wholesale market.
   - Revitalisation of the wholesale market by measures to activate transactions.
3. *Reform of the power transmission/distribution sector*
   - Establish a nationwide system to utilise supply widely by reforming the current systems that control the supply-demand balance in each area.
   - Ensure the neutrality of the power transmission/distribution sector in each area by functional or legal separation, while enhancing interconnection capacity between regions.

increased role of renewables will help to accelerate green growth. This section proposes an agenda for reform that is summarised in Box 1.4.

Upgrade supervision in nuclear power and in the electricity sector

Even with the plan to phase out nuclear power plants, Japan faces the issue of how to ensure their safety during the coming decades. An official report in early 2012 concluded that the "government lost credibility on nuclear policy" (Cabinet Secretariat, 2012). To resolve the conflict of interest, the government decided to establish a new nuclear regulatory authority, the Nuclear Regulation Authority (NRA), under the Ministry of the Environment in September 2012. The new authority combined NISA (which had been under the jurisdiction of METI) and the NSC (under the Cabinet Office) in order to unify nuclear safety regulations. The top priority is to ensure the regulators' independence from interested parties so as to prevent "regulatory capture" and withstand the pressures noted above to promote nuclear power. One priority is to prevent a revolving door between the NRA and line ministries by prohibiting NRA officials from returning to ministry jobs.

Nuclear plants should be re-started only after comprehensive safety check-ups based on new standards set by the NRA. The NRA recently unveiled strict safety measures to protect nuclear power plants against natural disasters and terrorist attacks. All plants will have to meet the new rules, which are to be finalised in July, before being reviewed for possible re-opening. Some of the proposed measures have been implemented but others require expensive upgrades. For example, plants must have back-up control rooms away from reactor buildings and reinforce protective structures to withstand the impact of a jet aircraft crash. The NRA is also arguing for a more cautious evaluation of earthquake faults under nuclear facilities, which may result in the permanent closure of some plants. The ability of the NRA to enforce its new guidelines in the face of opposition from the operators of nuclear plants will be a test of its supervisory capacity and independence.

As noted above, the lack of independence between the nuclear regulatory body and METI was a major factor in the Fukushima accident. However, METI remains the regulatory body for the electricity industry, for example in setting rules for access to the network and electricity tariffs. Creating an independent sectoral regulator, along with the separation of generation and transmission (see below), would help ensure non-discriminatory third-party access to the transmission network (2004 *OECD Economic Survey of Japan*). Creating independent sectoral regulators provides a number of advantages, including (Jacobs, 2001):

- Clarifying the distinction between the government's roles in promoting competition and encouraging growth.
- Improving transparency for market actors and consumers.
- Deepening expertise and technical skills in complex areas, such as energy.
- Enhancing stability and commitment to optimal long-run policy based on competition and consumer welfare.

Improve and expand market mechanisms in the energy sector

The 2012 Basic Policy on Electricity Reform proposed an ambitious agenda to create a competitive electricity market through reforms in electricity retailing, generation and the transmission network system. Achieving a competitive electricity market requires a number of reforms.

First, further unbundling of generation and transmission is essential. The accounting unbundling introduced in 2003, accompanied by government guidance and monitoring of transmission fees, has proven inadequate, as reflected in the still dominant share of the general electric utilities. As long as the general electric utilities provide power generation, transmission and retailing, they have little incentive to create a level playing field and operate in a competitive market. Consequently, the transmission charge imposed on PPSs by general electric utilities, which is regulated by METI, is criticised for preventing potential competitors from joining the market (IEA, 2008). Accounting unbundling has failed to ensure a level playing field for all market participants, reflecting how difficult it is for regulators to identify and prove the use of subsidies between power generation and transmission, given the complexity of the electricity business. Japan should introduce ownership unbundling, which will improve market access by improving the neutrality of transmission, while removing incentives to under-invest in transmission (Pollitt, 2007).

Second, interconnection capacity among different regions, including the frequency converters, should be expanded, thus breaking down the regional monopoly positions of the general electric utilities and creating a nationwide market, as envisioned in the 2012 *Basic Policy*. In addition, strengthening interconnection across regions would bring more players into the wholesale market, thereby promoting its development. For the market to function properly and set an appropriate price, it needs a sufficient number of transactions and participants. Otherwise, market participants will not be able to find counterparts for their intended transactions, prompting them to leave the market, thereby further shrinking it. A nationwide market would also improve the physical capacity to cope with sudden electricity supply disruptions in certain regions by utilising surpluses in other areas.

Third, the definite-quantity contract – which specifies both price and quantity – should be encouraged rather than the right-of-use contract, which gives consumers less incentive to modify consumption because electricity supply at the pre-set price is guaranteed. By changing to a definite-quantity contract, consumers will have more incentives to modify their consumption, thereby increasing trading in the wholesale market. As the share of definite-quantity contracts increases, real-time balancing should replace moment-to-moment balancing and the associated punitive charges for shortfalls in supply from the PPSs, which discourage the entry of new suppliers. If supply and demand have to be balanced in real time, the price will reflect market conditions precisely, thereby providing appropriate signals. Finally, as a dynamic wholesale market with more competitors develops and a unified national electricity market is established, Japan can move towards the *Basic Policy*'s ultimate objective of extending choice to all consumers.

Promoting renewable energy

The development of renewables has become more urgent following the 2011 disaster, given the reduced role of nuclear power. Moreover, accelerating the use of renewables would help increase Japan's growth potential by creating new industries and jobs, reduce GHG emissions and enhance energy security. Indeed, the 2010 New Growth Strategy envisions 50 trillion yen (more than 10% of 2012 GDP) of new demand and 1.4 million new jobs through the development and diffusion of green technologies.

To compensate for the reduced role of nuclear power, the *Basic Plan* proposed tripling the amount of electricity produced from renewable sources, boosting it to 30% by 2030 (NPU, 2012a). This target is a substantial increase from the 20% objective in the previous

energy plan, which was considered ambitious. However, such a policy would impose a heavy burden on consumers. For example, four studies published by the National Policy Unit projected that household electricity prices would rise by 90% to 110% if nuclear power were completely replaced by renewables, although 10% to 65% of the impact on households' electricity bills would be offset by reduced consumption (NPU, 2012b).

Moreover, the technical feasibility of such an increase has been questioned, given the limits to expanding renewable energy. For example, the previous plan called for equipping 12 million households with photovoltaic power equipment – above the 10 million limit thought to be realistic. For wind power, the strategy called for installing capacity of 10 million kW by 2030, far above the estimated onshore potential of 6.4 million kW (IEEJ, 2011). The scope for offshore wind generation is limited by fishing rights granted to domestic firms. However, an IEA study estimated the realisable potential contribution of renewables in Japan at 244 TWh in 2020, equivalent to 24% of total electricity generated in 2009 (IEA/OECD, 2008). In particular, Japan has relatively large potential in hydropower (116 TWh), wind (35 TWh), solid biomass (28 TWh) and solar photovoltaics (26 TWh). Moreover, Japan has the highest number of patents related to renewable energy (OECD, 2010).

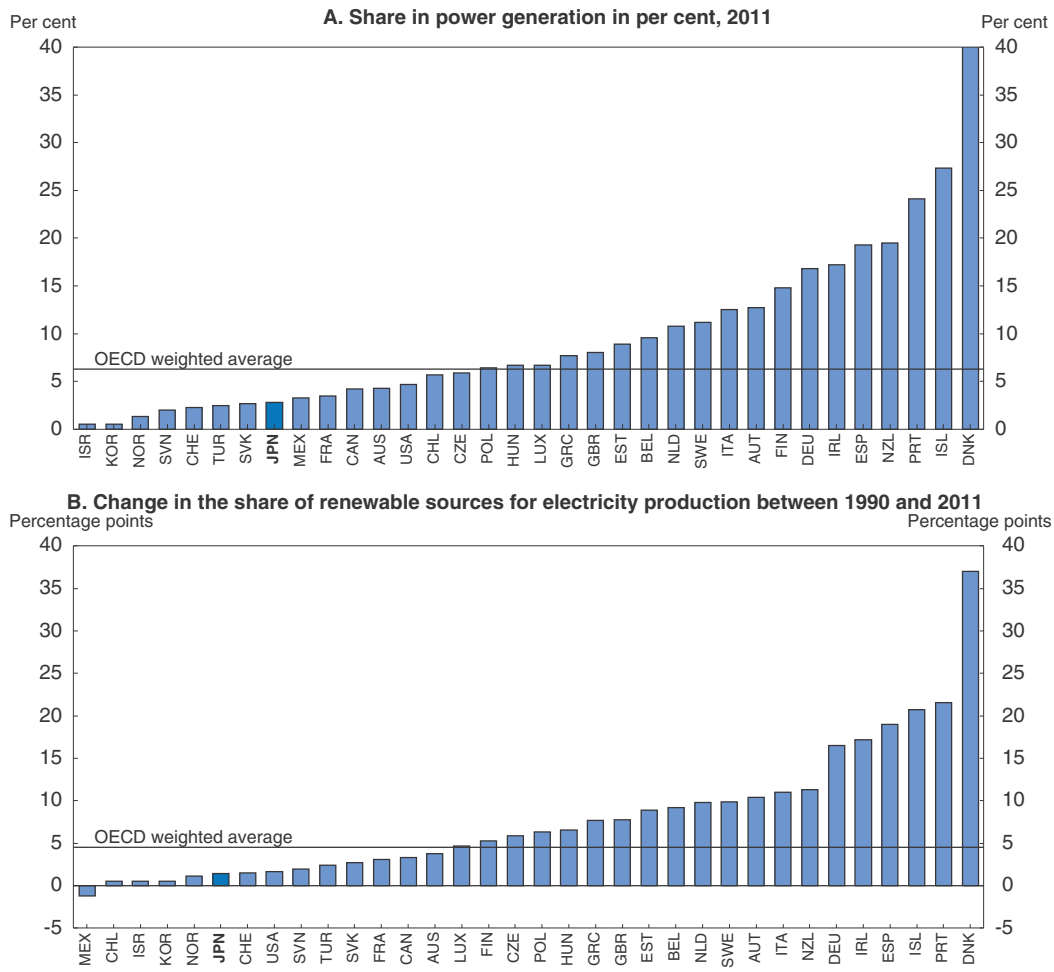
The government created a Renewable Portfolio Standard (RPS) in 2003 to raise the share of renewable energy in Japan. The RPS set a compulsory target of 1.6% of electricity from renewable sources, excluding hydro, by 2014. While the target has already been reached, the share of renewable energy, excluding hydro, was only 2.8% in Japan, well below the OECD average of 6.3% in 2011 (Figure 1.18).[14] Moreover, its share increased by only 1.4 percentage points in Japan between 1990 and 2011, compared to the OECD average of 4.5 points (Panel B). The development of renewable energy in Japan has faced a number of obstacles, including the priority accorded to nuclear power. Japan's 2010 Strategic Energy Plan set a target of 20% for renewables in 2030, with 50% from nuclear. Germany, in contrast, has a target of 50% for renewables in 2030 (DeWit, 2011).

In 2012, Japan launched a feed-in-tariff (FIT) programme, which obliges the general electric utilities to purchase electricity from almost all renewable energy producers to promote renewable energy. Under this scheme, producers of electricity generated by renewable resources can sell that electricity at a fixed long-term price guaranteed by the government. The tariff is set high enough to make renewable energy profitable. For example, the price for solar photovoltaic was set at 42 yen per kWh for the next 20 years. It is estimated that the FIT scheme will enable solar and wind projects to achieve equity returns as high as 44% and 51%, respectively, the highest in the world (Bloomberg New Energy Finance, 2012). However, the exceptionally high returns to renewables and the high price, which is covered by a surcharge on all electricity customers, raises the risk of distortions. Maintaining incentives for R&D in a FIT system is also important. The experience of Germany's FIT that was introduced in 2000 suggests that while it is effective in promoting renewable energy, it reduced R&D intensity from around 3½ per cent of sales volume in 2001 to less than 2% in 2008 (Huenteler *et al.*, 2012). Gradually reducing the price for renewable energy purchased under the FIT would promote efficiency.

The development of renewables also depends on reforming the electricity system, as discussed above. The current structure is an obstacle to renewables, such as solar and wind power, which are volatile as they depend on weather conditions. Electricity generators relying on renewables need dependable alternatives to compensate for the variation in

Figure 1.18. **Share of renewable energy in power generation in Japan is low**

Excluding hydro power



Source: OECD/IEA Renewables Information Database.

StatLink http://dx.doi.org/10.1787/888932798088

renewable energy. However, as noted above, the Japanese electricity market is segmented regionally by general electric utilities, with limited interconnection capacity, thereby limiting the scope to offset any shortages in renewables. Increasing interconnection capacity between regions is therefore essential to expand the role of renewables.

Expanding the use of smart grids is also important to effectively manage electricity systems that make greater use of renewable energy sources. Smart grids are typically described as electricity systems complemented by communications networks, monitoring and control systems, "smart" devices and end-user interfaces. Greater use of renewables increases the need for flexible management of electricity generation, transport and storage, given that the timing of supply and demand is one of the major obstacles to their increased use. For example, a study of wind power outputs in the United Kingdom, showed that wind turbines worked at less than 6% of their capacity during four peak demand events in 2010. The smart grid provides opportunities to remedy local imbalances between demand for electricity and the supply of renewable energy. A study for the US state of North Carolina (over 9 million inhabitants) suggests that more than two-thirds of the load

(baseload and peak load) could be provided from renewable energy if information and communications technology is used to enable electricity storage, wider geographic scopes of the grid, effective demand management and dynamic pricing (OECD, 2012e).

In addition, enhancing the credibility of a new energy policy is also important to boost renewables. At present, there appears to be some scepticism about the current emphasis on renewable energy, in part due to concern about the cost of abandoning nuclear energy. Indeed, the government estimates that replacing all domestic nuclear power plants by thermal power generators would boost electricity generation costs by over 3 trillion yen (0.6% of 2011 GDP) per year, increasing production costs in the industrial sector by 7.6 trillion yen per year and prompting opposition in the business sector. A new energy plan should be developed to enhance the credibility of the commitment to renewables. As in other green areas, clear and consistent policies over the long term are necessary to induce private investment (Croce *et al.,* 2011).

Perhaps most importantly, accelerating green growth and achieving the energy savings targeted in the 2012 *Strategy* requires an appropriate policy framework that promotes cost-effective industrial restructuring. The key is greater reliance on market instruments, which equalise marginal abatement costs across emitters, thereby promoting cost-effective emission abatement. The main market instruments for internalising the social cost of carbon are a carbon tax and an emissions trading scheme (ETS), which both put a price on carbon. Research in Korea, which recently passed legislation to establish an ETS, showed that the cost of achieving the GHG emission reduction target through ETS would be less than half as much as relying on regulation (OECD, 2012c). Furthermore, a carbon price is needed as soon as possible to kick start private investment and innovation in greener infrastructure and technologies. Both options for carbon pricing meet the efficiency criteria, as they encourage emitters to adopt the least expensive abatement solutions that cost less than the permit price or the tax.

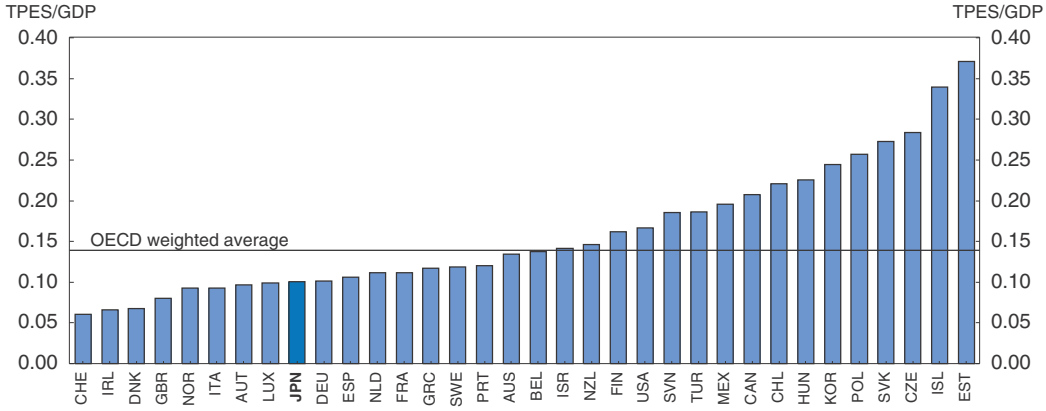
Promoting energy conservation

Energy conservation should also be part of the strategy to cope with reduced output from nuclear power in Japan, which has achieved a high level of energy efficiency. In 2011, energy intensity in Japan (measured as energy inputs per unit of GDP) was the ninth lowest among OECD countries and less than two-thirds of the average of OECD countries (Figure 1.19). In 2012, the previous government set goals of reducing electricity use by 10% from its 2010 level by 2030 and total energy use by 19%. In addition to promoting renewables, a strong and consistent carbon price would also promote energy conservation. For example, a study by the National Institute for Environmental Studies estimated that doubling household electricity charges would reduce consumption by 30% (NPU, 2012b).

Other policies are important to meet the government's target of reducing energy consumption. For example, LED and other high-efficiency lightening will be disseminated to 100% of public facilities and institutions by 2020 and will account for all lighting by 2030. According to one study, replacing all lighting with LED will reduce power demand by the equivalent of seven nuclear reactors in Japan. In addition, Japan's “District Heating and Cooling” system technology could cut energy consumption by 40% compared to conventional means of heating and cooling (DeWit, 2013).

Figure 1.19. **Japan's energy intensity was below the OECD average in 2011**

Tonnes of energy per GDP in thousand 2005 USD



Source: OECD/IEA World Energy Balance Database.

StatLink http://dx.doi.org/10.1787/888932798107

Box 1.4. **Summary of recommendations to promote green growth and restructure the electricity sector**

Upgrading supervision of the nuclear industry and electricity sector

- Ensure that the newly-created Nuclear Regulatory Agency (NRA) is independent from line ministries responsible for energy issues.
- Require nuclear plants to meet the criteria to be established by the NRA before being allowed to reopen.
- Create an independent regulator for the electricity sector that is at arms' length from line ministries.

Improve and expand market mechanisms in the energy sector

- Introduce ownership unbundling to create a level playing field between regional monopolies and new entrants.
- Expand interconnection capacity, including frequency converters, and introduce real-time pricing to break down regional monopolies and create a competitive, nationwide electricity market.
- Shift to definite-quantity contracts and real-time pricing to promote a competitive, nationwide market.

Promote the role of renewable energy to accelerate green growth

- Ensure that the newly-established feed-in-tariff system provides appropriate incentives, including for R&D.
- Expand interconnections and use of smart grids to effectively manage electricity produced from renewable sources.
- Introduce carbon pricing through an emissions trading system in combination with a carbon tax to promote investment in green technologies, including renewables.

Notes

1. The Miyagi Prefecture Earthquake Disaster Recovery Plan stated that it will not aim simply at recovery but instead focus on "drastic restructuring". The ten recovery points in their plan include "creating a progressive agricultural sector" and creating towns that utilise renewable energy (Miyagi Prefectural Government, 2011).
2. The decline in the level of Japan's PSE support is due to a combination of a downward trend in production levels over time as well as a reduction in the level of price support, which has been falling due to: *i)* domestic deregulation for rice; and *ii)* tariff reductions in the Uruguay Round Agreements Act, particularly for livestock products.
3. Article 1 of the law stated that "Ownership of farmland by the farmer himself is the most appropriate form of ownership". The Article was amended in 2009 to say that the law promotes the acquisition of land rights for cultivators who use farmland effectively and in harmony with their local community.
4. APCs are firms that derive more than half of their sales from agriculture and related business, and have at least one executive engaged in those areas for more than 150 days a year, making them essentially incorporated family farms.
5. Land conversion is decided on a case-by-case basis by the prefectural government (for changes concerning less than four hectares) and by the Ministry of Agriculture, Forestry and Fisheries (above four hectares).
6. The payment systems for rice and other crops were combined in 2011 to reduce the administrative burden on farmers.
7. The IAEA's scale of radiological events has eight levels from 0 to 7, with 7 defined as a "major accident" that requires the "implementation of planned and extended countermeasures".
8. After confirming their safety, the government allowed two reactors in the Ohi nuclear power plant to resume operation in June 2012 to cope with an expected electricity shortage in the Kansai region during the summer.
9. In addition, customers in the Hokkaido, Kansai, Shikoku and Kyushu areas were asked to prepare for possible rolling blackouts.
10. This Commission, which was established with ten independent members in December 2011, carried out a comprehensive examination for six months on the Fukushima nuclear power plant accident (National Diet of Japan, 2012).
11. The peer-review system of the IAEA issued a report in 2007 on problems in Japan's nuclear safety regulation, but the NSC issued a statement "dismissing the IAEA's recommendations and claiming that the current nuclear regulation system had been functioning effectively to ensure safety at an outstanding level by international standards".
12. The lack of an effective price mechanism also discourages the utilisation of Japan's numerous private electricity generators in response to tight supply and demand situations. Given that most private electricity generators use oil, which tends to be more expensive, they prefer to rely on the general electric utilities instead of operating their own power generators. If the electricity price were to increase enough during tight demand and supply conditions, more private generators would be run.
13. The fee is set at 10 yen per kilowatt hour on shortages up to 3% and 30 yen or more per kilowatt hour on shortages above 3% (Hatta, 2012).
14. Including hydroelectricity, the share of renewable energy in Japan was 10.7% in 2011, still well below the OECD average of 19.1%. However, hydroelectricity generation depends significantly on natural characteristics and there is an obvious limit for increasing its capacity.

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Chapter 2

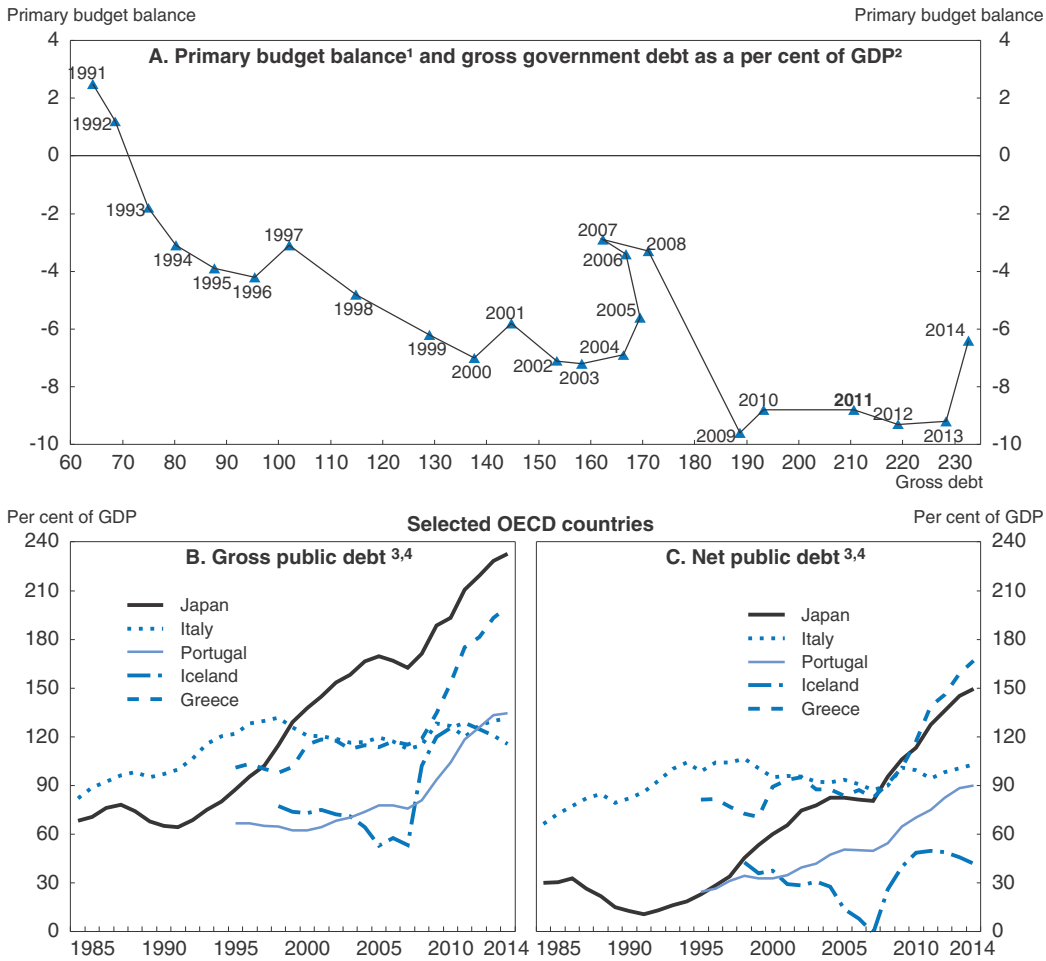
Restoring Japan's fiscal sustainability

With gross government debt surpassing 200% of GDP, Japan's fiscal situation is in uncharted territory. In addition to robust nominal GDP growth, correcting two decades of budget deficits requires a large and sustained fiscal consolidation based on a detailed and credible multi-year plan that includes measures to control spending and raise revenue. On the spending side, reforms to contain ageing-related outlays are the priority, while the consumption tax should be the main source of additional revenue, given that its impact on economic activity is less negative than other taxes. The plan should target a primary budget surplus large enough to stabilise the public debt ratio by 2020. The fiscal policy framework should be improved to help reinforce confidence in Japan's fiscal position and prevent a run-up in interest rates. Higher consumption taxes should be accompanied by well-targeted social spending, including the introduction of an earned income tax credit, to prevent a rise in inequality and poverty.

Japan's fiscal situation has steadily deteriorated as public debt has risen above 200% of GDP (Figure 2.1), reflecting rising public spending and falling nominal output, due to deflation and sluggish growth. Under the 2010 Fiscal Management Strategy, the key objective was to eliminate the primary budget deficit of central and local governments – estimated in 2012 at 9% of GDP (on a general government basis) – by 2020, a target

Figure 2.1. **Japan's fiscal situation has deteriorated sharply over the past 20 years**

General government basis



1. Excluding one-off factors, which were about minus 5% of GDP in 1998 and ranged from +0% to +2% of GDP between 2000-14.
2. OECD estimates for 2012 and projections for 2013-14.
3. The five countries with the highest gross debt ratios in the OECD area in 2010.
4. OECD estimates for 2012 and projections for 2013-14.

Source: OECD Economic Outlook, No. 92 and revised OECD estimates and projections for Japan for 2012-14.

StatLink http://dx.doi.org/10.1787/888932798126

maintained by the new government. This would imply rapid fiscal consolidation that would itself hold back nominal GDP growth, making it difficult to stabilise the public debt ratio. The launch of a new fiscal package in January 2013 and the decision to abandon the ceiling on bond issuance in FY 2012 by the new government, which has pledged "fiscal policy flexibility", creates some uncertainty while it prepares a basic reform programme of economic and fiscal management to be announced in mid-2013. In addition to measures to boost revenue and cut spending, restoring fiscal sustainability requires accelerating output growth (Chapter 1) and achieving sustained inflation (Assessment and recommendations).

After an overview of Japan's fiscal predicament, this chapter reviews the impact of recent fiscal policy developments, including the Fiscal Management Strategy, reconstruction from the 2011 disaster and the tax and social security reform plan. After presenting the 2013 fiscal package and the plans for the FY 2013 budget, the chapter discusses what would be an appropriate fiscal target for the next medium-term fiscal plan and how this could be met by limiting spending, increasing revenue and improving the fiscal framework. The chapter then considers measures to minimise the adverse impacts of fiscal consolidation on inequality and poverty. Policy recommendations are summarised in Box 2.5.

An overview of Japan's fiscal situation

Twenty years of budget deficits have driven gross public debt from 70% of GDP in 1992 to almost 220% in 2012, leaving Japan increasingly vulnerable to a loss of market confidence in the sustainability of its public finances (Figure 2.1). Moreover, net public debt, at around 135% of GDP in 2012, is the second highest in the OECD after Greece (Panel C). Reconstruction costs related to the 2011 Great East Japan Earthquake and the fiscal package in early 2013 further increase pressure on the already weak fiscal position.

Persistent deficits through periods of expansion and recession alike indicate that the problem is more structural than cyclical in nature. Rising government spending was driven by social security outlays, including cash transfers and in-kind benefits, which expanded by 10.4 percentage points of GDP between 1992 and 2010 (Figure 2.2), reflecting rapid population ageing. Indeed, the population over age 65 nearly doubled from 21% of the working-age population in 1992 to 39% in 2010, the highest in the OECD. Although rising social security outlays were partially offset by declines in public investment and interest payments, total expenditure has increased by 8.5 percentage points of GDP since 1992.

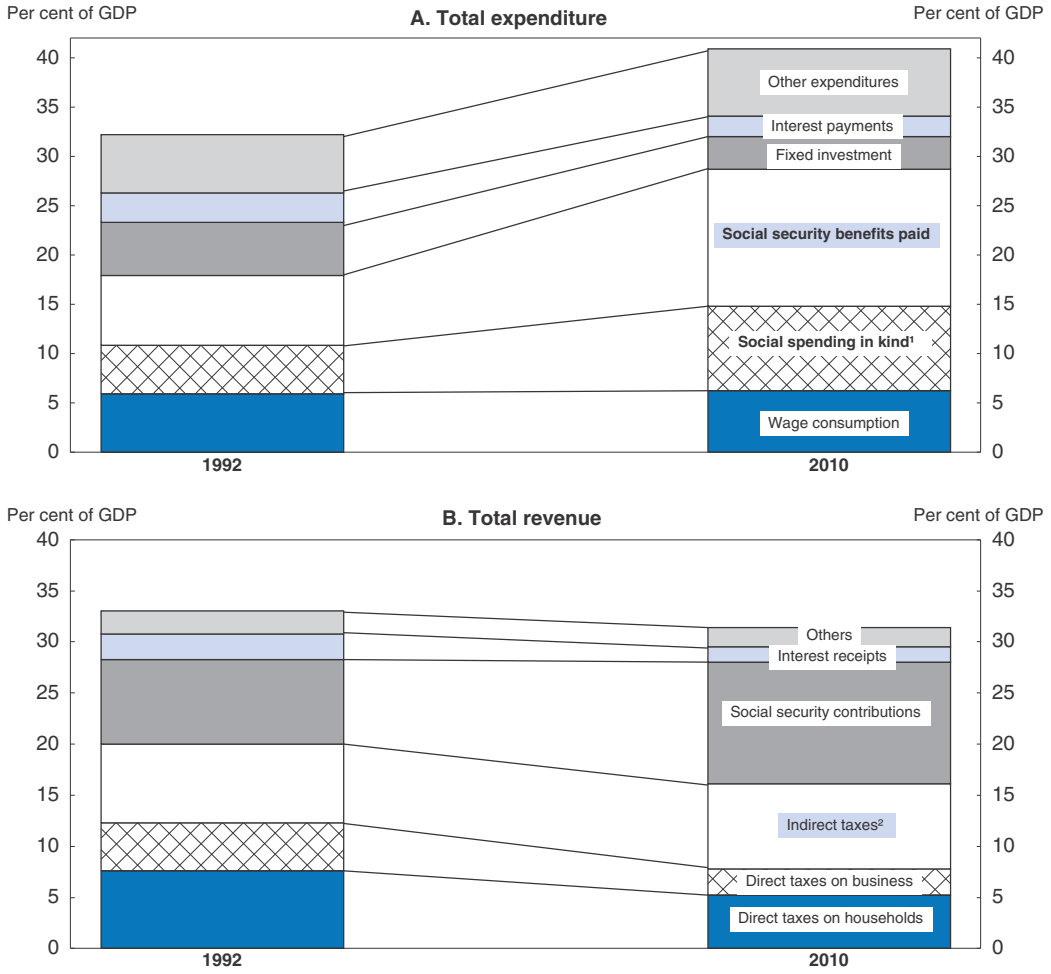
Meanwhile, total revenue declined by 1.7 percentage points of GDP between 1992 and 2010, primarily due to the fall in taxes on personal and corporate income from 12% of GDP to 8% (Panel B). In sum, government revenue has been declining even as social security spending is rising sharply. The budget deficit is projected at around 10% of GDP (excluding one-off factors) in 2012 and 2013, pushing gross public debt further into uncharted territory.

Despite exceptionally low interest rates…

The impact of rising debt has been mitigated by the low level of long-term interest rates, thus enabling the government to finance deficits at relatively low cost (Figure 2.3). Indeed, the rate on ten-year government bonds has remained below 2% since 1998, reducing the effective interest rate paid on government gross debt from an average of 4% in the 1990s to only 1% by 2010. The "interest-rate bonus" from refinancing outstanding

Figure 2.2. **Structural characteristics of Japan's budget balance**

General government basis in per cent of GDP



1. "Social spending in kind" is calculated from data for FY 1992 and FY 2010. Other government non-wage consumption is included in the category "other expenditures".
2. This includes property taxes based on the SNA definition.

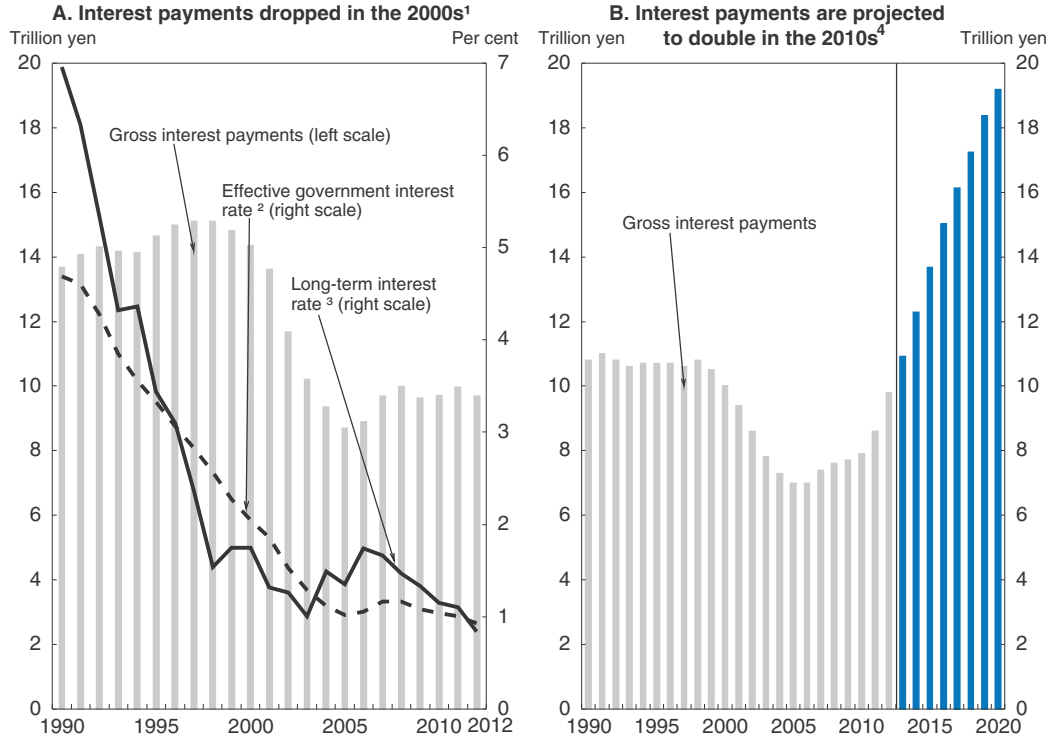
Source: OECD Economic Outlook Database.

StatLink http://dx.doi.org/10.1787/888932798145

government debt at lower rates helped cut interest payments from 14 trillion yen in 1990 to 10 trillion yen in 2010, while gross public debt more than tripled from 292 trillion yen to 936 trillion yen over that period.

Long-term interest rates remain below 1% in 2013. The exceptionally low level is explained by Japan's unique economic environment, including the persistence of deflation, the virtually zero policy interest rate since the end of the 1990s and investors' risk aversion after a prolonged period of economic stagnation. The market has been able to absorb the large quantities of bonds, at low and stable interest rates, thanks in part to ample household financial assets, amounting to around three times the size of GDP and a pronounced home bias, with more than 90% of government debt being held domestically (Figure 2.4). Banks have increased their government bond holdings by about 10% since 2007 and now hold 38.3% of outstanding bonds. In addition, the Bank of Japan (BoJ) has expanded its purchases of government bonds to 11.6% of the total in the fourth quarter of

Figure 2.3. **Government interest payments have fallen significantly**

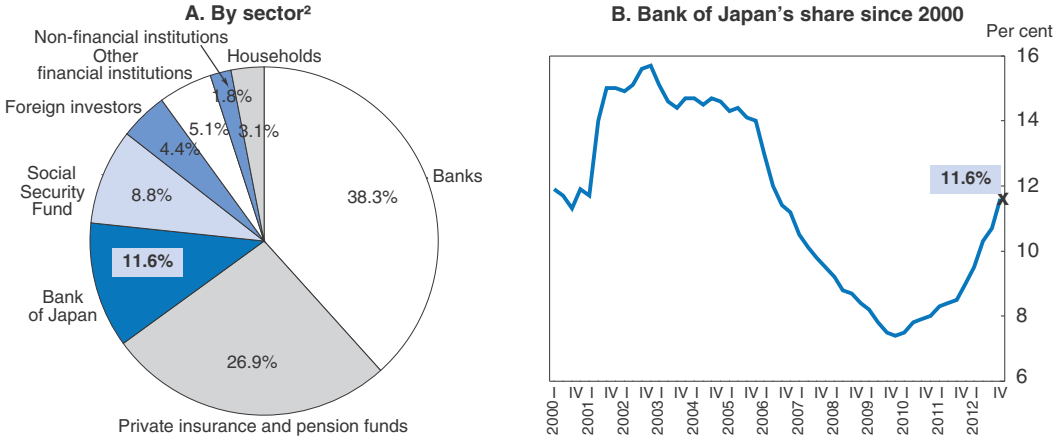


1. General government, calendar year basis. OECD estimates for interest payments in 2012.
2. Defined as interest payments divided by gross government debt.
3. Ten-year government bonds.
4. Central government general account for fiscal years, based on the final budget for FY 1990-2010; the revised budget for FY 2011; the initial budget for FY 2012; and government projections thereafter. The projection assumes nominal GDP growth of 1.5% during the 2010s. The difference between Panel A and Panel B is primarily due to interest payments by local governments.

Source: Cabinet Office, Ministry of Finance and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932798164

Figure 2.4. **Long-term government bond holdings**[1]



1. Panel A refers to the fourth quarter of 2012, when the total amount of bonds amounted to 785 trillion yen (166% of GDP), including Fiscal Investment and Loan Programme (FILP) bonds.
2. Central and local governments hold 0.1% of the total.

Source: Bank of Japan.

StatLink http://dx.doi.org/10.1787/888932798183

2012. Its purchases are to increase further under the 2013 "quantitative and qualitative monetary easing", which will nearly double purchases of government bonds to 7.5 trillion yen (1.5% of GDP) per month. The central bank is now the third-largest holder of government bonds after banks and private insurance and pension funds.

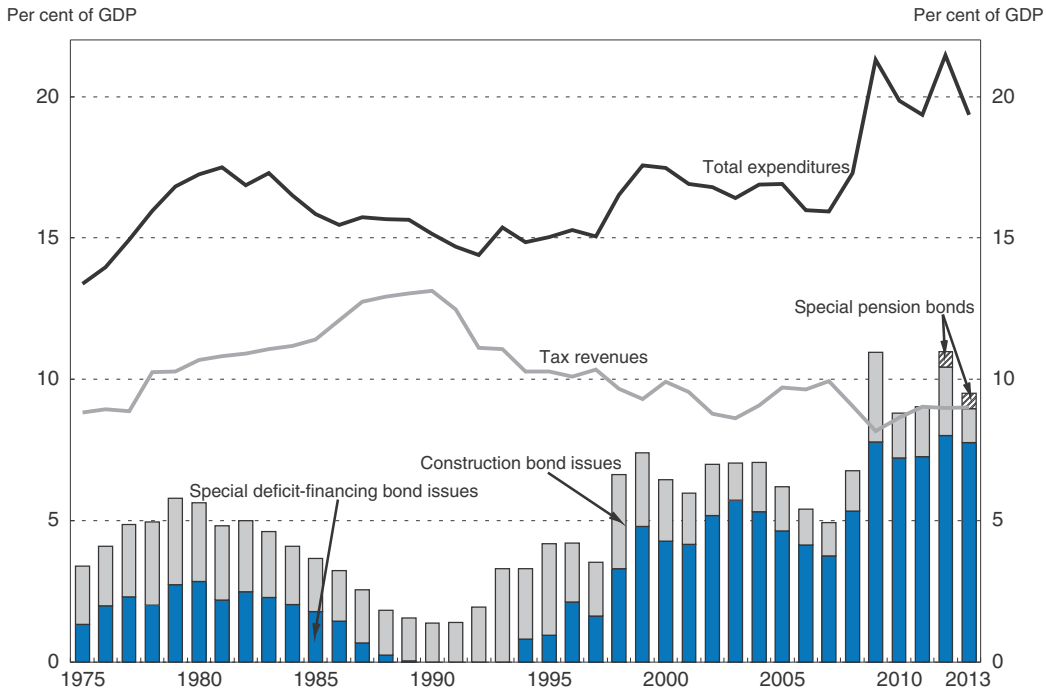
... Japan's fiscal situation is not sustainable

Central government bond issuance exceeded tax revenue in the FY 2009-10 and again in the FY 2012 initial budget (Figure 2.5). In the initial budget for FY 2013, tax revenue exceeds borrowing if special pension bonds are excluded. In addition to new debt, the government expects to issue 112 trillion yen (nearly one-quarter of GDP) of refinancing bonds in FY 2013. Looking ahead, Japan faces ongoing public spending pressures, notably for social security, due to rapid population ageing. The Cabinet Office's long-term projections made in 2012 showed the primary budget (central and local governments) remaining in deficit through 2023, even assuming the planned hike in the consumption tax rate to 10% and spending restraint (see below). The further increase of public debt into uncharted territory raises the possibility of a rise in the risk premium on government bonds.

In any case, interest rates are likely to rise as the exceptional factors keeping them low fade. For example, the growth of household financial assets is slowing in the context of

Figure 2.5. **The gap between central government expenditure and tax revenue is widening**

Central government general account as per cent of GDP[1]



1. This figure shows the final outcome for FY 1975-2011, the revised budget for FY 2012 (including the government's contribution to the basic pension system and the special pension bonds issued to finance it) and the initial FY 2013 budget. Reconstruction spending and reconstruction bond issuance are excluded for FY 2011-13.

Source: Ministry of Finance and OECD calculations.

population ageing and eventually they are likely to decline. According to one study, public debt could surpass household financial assets within a decade, leading to higher interest rates (Hoshi and Ito, 2012). Indeed, the authorities project that the effective interest rate paid on government debt will double to 2% by FY 2020, boosting interest payments by the central government alone from 10 trillion yen in FY 2012 to 19 trillion in FY 2020 (Figure 2.3, Panel B). Another government study concludes that a one percentage-point increase in short-term interest rates would push up long-term interest rates by 50 basis points over a five-year period. This would reduce real GDP by an annual average of 0.4%, while increasing the budget deficit by 2.5 trillion yen (0.5% of GDP) (CAO, 2010a).

A significant rise in government bond yields would seriously hurt financial institutions. Indeed, government bonds now account for almost a quarter of bank assets. The International Monetary Fund (IMF) concluded that major Japanese banks could handle "moderately large shocks to government bond prices", although they could pose "sizable risks" to regional banks (IMF, 2012). The BoJ's 2012 *Financial System Report* reached a similar conclusion: a two percentage-point rise in the yields on all maturities, in tandem with a matching rise in inflation, would result in a 12.6 trillion yen (2.5% of GDP) loss for the banking system during the following year, reducing Tier-1 capital ratios by an average of 0.5 percentage point for major banks and by 1.0 point for regional banks (Table 2.1).[1] However, the losses would vary between institutions, with more than 20% of banks suffering declines of more than 2 percentage points (BoJ, 2012).

Table 2.1. **Impact of a rise in interest rates on the banking system**

One year after a rise in interest rates[1]

	Upward shift in interest rates by:		
	1% point	2% points	3% points
A. Major banks			
Capital losses in bond holdings[2]	3.7	7.0	10.3
Tier-I capital ratio (%)[3]	12.6	12.1	11.4
Change (percentage points)	0.0	-0.5	-1.2
B. Regional banks			
Capital losses in bond holdings[2]	3.0	5.6	8.1
Tier-I capital ratio (%)[3]	9.9	9.0	8.0
Change (percentage points)	-0.1	-1.0	-2.0

1. Assumes a parallel shift in interest rates for all maturities, with inflation rising by the same amount as interest rates.
2. In trillion yen. Losses would be larger for regional banks, which usually lend at fixed rates, than for major banks, which lend a large amount at floating rates.
3. In March 2012, 12.6% for major banks and 10.0% for regional banks.

Source: Bank of Japan (2012).

The large losses on bond holdings would induce banks to restrict lending to restore their capital adequacy ratios, with negative consequences for growth. For example, the drop in bank loans outstanding resulting from a 200 basis-point rise in interest rates would reduce nominal output growth by as much as 1.8 percentage points (BoJ, 2012), in turn creating additional concerns about the stability of the banking sector. The risks associated with Japanese banks' massive holdings of government bonds thus merit close attention, particularly as those holdings are projected to rise to 30% of bank assets by 2017 (IMF, 2012).

A high level of public debt may have adverse effects on economic growth. A well-known study found that growth rates in both developed and developing countries are about 1 percentage point less once public debt exceeds 90% of GDP (Reinhart and Rogoff, 2010). Another study found that a 10 percentage-point increase in debt beyond 90% of GDP reduces annual real per capita GDP growth by 0.2 percentage point (Kumar and Woo, 2010). Other studies identify a negative non-linear effect at debt levels of 77% of GDP (Caner *et al.*, 2010), 66% (Elmeskov and Sutherland, 2012) and 20% (Égert, 2012). Japan may experience such a negative effect on growth as the factors responsible for low interest rates fade away. The challenge for Japan is to reduce the structural budget deficit and boost nominal GDP growth before the period of low interest rates ends. Otherwise, rising interest payments on the accumulated debt would lead to a sharp deterioration in the fiscal situation, resulting in serious damage to the real economy.

The impact of recent fiscal developments

Some improvement in the fiscal situation was achieved between 2002 and 2007 during Japan's longest expansion in its post-war history. However, the severe recession in 2008-09 in the wake of the global financial crisis quickly reversed the progress. This section analyses the impact of the Fiscal Management Strategy, the March 2011 Great East Japan Earthquake and tax and social security reform on the fiscal outlook.

Developments in FY 2011-12 under the Fiscal Management Strategy

The Fiscal Management Strategy, announced in June 2010 (NPU, 2010), set a number of numerical targets to enhance the credibility of the government's commitment to fiscal consolidation (Box 2.1). These targets were maintained after the 2011 disaster, although

Box 2.1. **The Fiscal Management Strategy**

The objective was to stabilise and eventually reduce the public debt ratio. The Strategy was based on a rolling three-year medium-term framework that was revised in August of 2011 and 2012 (covering FY 2013-15).

- *A short-term target*: Limit new government bond issuance to the previous fiscal year. In practice, this has meant constraining bond issuance to the FY 2010 level of 44 trillion yen (9% of GDP).
- *A medium-term target*: Halve the primary budget deficit of central and local governments, which was 6.4% of GDP in FY 2010, by FY 2015. To meet the target, central government spending in the general account (excluding debt repayment and interest) was to be kept to the previous fiscal year. This has meant limiting spending to 71 trillion yen, the level in the initial budget for FY 2010. However, the spending cap has excluded reconstruction spending. On the revenue side, the Strategy called for multi-year measures, including hikes in the consumption tax. Additional revenue that is secured through permanent tax reforms could be added to the overall expenditure limit. However, if additional tax revenue were temporary, it was to be used to reduce government bond issuance rather than increase outlays. This principle should prevent using unexpected tax revenue to finance supplementary spending, although this occurred in FY 2011 and FY 2012.
- *A long-term target*: Achieve a primary budget surplus for central and local governments by FY 2020, putting the public debt ratio on a downward trend from FY 2021.

Box 2.1. **The Fiscal Management Strategy** *(cont.)*

In addition, the Strategy established a number of basic principles for fiscal management:

- A pay-as-you-go rule, which requires the government to secure permanent revenue sources to finance new spending programmes (including ageing-related outlays) and tax reductions.
- Annual reductions in the budget deficit to achieve the medium-term targets.
- Reductions in wasteful spending, including in the special accounts, to allow flexibility in budget allocation.
- Co-operation between central and local governments to achieve fiscal consolidation and avoid shifting financial burdens to local governments.

reconstruction spending was excluded from the Strategy, and accepted by the new government. While the initial budgets for FY 2011 and FY 2012 were consistent with the Strategy, the final outcomes exceeded the targets.

The initial budget in FY 2011 met the targets for primary spending and bond issuance (Table 2.2, Column B). Increased spending on social security was offset by cuts in other spending, notably public investment and transfers to local governments, keeping spending at the FY 2010 level of 70.9 trillion yen. On the revenue side, an increase in tax revenue in the initial FY 2011 budget was to offset the fall in non-tax revenue, leaving bond issuance at 44.3 trillion yen. As for the FY 2011 budget outcome, primary spending – excluding reconstruction outlays – overshot the initial budget by 1.1 trillion yen. However, it was more than offset by higher-than-expected revenue, reducing bond issuance below the 44 trillion yen ceiling. If reconstruction spending and bond issuance were included in the

Table 2.2. **The central government's initial budget**

Central government general account in trillion yen for fiscal years

	(A) 2010[1]	(B) 2011[1]	Per cent change (B/A)	(C) 2012[2]	(D) 2012[3]	Per cent change (D/B)	(E) 2013[3]	Per cent change (E/D)
Total expenditures	92.3	92.4	0.1	90.4	92.9	0.6	92.6	-0.3
Debt servicing	20.6	21.5	4.4	21.9	21.9	1.8	22.2	1.4
Primary spending[4]	70.9	70.9	-0.1	68.4	71.0	0.2	70.4	-0.9
of which:								
Social security	27.3	28.7	5.3	26.4	29.0	1.1	29.1	0.5
Transfers to local government	17.5	16.8	-4.0	16.6	16.6	-1.1	16.4	-1.2
Public investment	5.8	5.0	-13.8	4.6	4.6	-8.1	5.3	15.6
Total revenue	92.3	92.4	0.1	90.4	92.9	0.6	92.6	-0.3
Taxes	37.4	40.9	9.4	42.3	42.3	3.5	43.1	1.8
Non-tax revenues	10.6	7.2	-32.2	3.7	3.7	-47.9	4.1	8.3
Borrowing (public bonds)	44.3	44.3	0.0	44.2	46.8	5.8	45.5	-2.9

1. Including the government's contribution to the basic pension system, which amounted to around 2.6 trillion yen (0.6% of GDP).
2. Excluding the government's contribution to the basic pension system and the "special pension bonds" used to finance it.
3. Including the government's contribution to the basic pension system and the "special pension bonds" used to finance it.
4. Total spending minus debt servicing.

Source: Ministry of Finance.

general account, spending and borrowing would have each exceeded their ceilings by about 10 trillion yen (2% of GDP).

The initial FY 2012 budget also met the spending target by reducing public investment and transfers to local governments enough to offset rising social security spending (Table 2.2, column D).[2] The revenue side was more problematic due to a significant decline (3.5 trillion yen) in non-tax revenue. To meet the 44 trillion yen bond issuance target, the authorities created a new type of bonds – special pension bonds – to finance the government's 2.6 trillion yen contribution to the basic pension plan. However, without this accounting change, bond issuance increased to 46.8 trillion yen (column D), even before taking account of 2.7 trillion in reconstruction bonds. Moreover, on an outcome basis, spending and bond issuance far exceeded the ceilings in FY 2012 with the launch of a large fiscal package in early 2013.

The Great East Japan Earthquake: Reconstruction spending and its financing

Japan also faces the cost of reconstruction in areas devastated by the 2011 Great East Japan Earthquake (Chapter 1). The 2011 *Basic Guidelines for Reconstruction* estimated that at least 23 trillion yen (almost 5% of 2011 GDP) would be needed over the next decade, with 19 trillion yen to be spent by 2016. The government launched packages in May, July and November 2011, amounting to 0.9%, 0.4% and 2.6% of GDP, respectively (Table 2.3):[3]

- The May package aimed at responding to immediate reconstruction needs, such as temporary housing and infrastructure, including roads and ports.
- The July package provided additional financial support, including measures to ease the debt burdens of individuals and firms, as well as to promote investment by small firms in the devastated areas.
- The November package expanded transfers to local governments in devastated areas to support their reconstruction efforts.

Table 2.3. **Reconstruction packages and FY 2012 budget following the earthquake**

Spending in trillion yen

Category	May 2011	July 2011	November 2011	FY 2012 budget
Disaster relief, including clearing disaster waste	0.8	-	0.5	0.4
Public works (to restore public facilities)	1.6	-	1.5	0.5
Financial measures[1]	0.6	0.4	0.7	0.1
Grants to local government	0.1	0.5	3.2	0.8
Nuclear accident-related spending	-	0.3	0.4	0.5
Other[2]	0.8	0.8	5.9[3]	0.9
Total	4.0	2.0	12.1	3.8[4]
Total as per cent of GDP	**0.9**	**0.4**	**2.6**	**0.8**
Impact on GDP growth (government estimate)	**0.7**	**0.3**	**1.7**	**0.5**

1. Includes income support to households, as well as measures to ease the debt burdens on individuals and firms.
2. Includes reserves for future emergency spending and measures to prevent national disasters.
3. Includes non-reconstruction spending, such as paying back the 2.5 trillion yen borrowed from the basic pension system to finance the May package, 0.3 trillion yen for typhoon damage, and 2 trillion to respond to the impact of yen appreciation.
4. Includes reserves for reconstruction (0.4 trillion yen) and transfers to special accounts (0.1 trillion yen).

Source: Cabinet Office, Ministry of Finance and OECD calculations.

In addition, the FY 2012 budget included 3.8 trillion yen of reconstruction spending. Excluding spending in the packages not related to reconstruction, the three packages and the FY 2012 budget contained a total of about 17 trillion yen (3.6% of GDP) of reconstruction spending,[4] close to the five-year target of 19 trillion yen. The financing of reconstruction is explained in Box 2.2.

However, by mid-2012, about half of the approved reconstruction appropriations had been spent. The spending pace is somewhat slower than initially expected, in part reflecting problems in the relationship between the central government and local governments in Tohoku. While the government is including more reconstruction spending in the January 2013 fiscal package and in the FY 2013 budget, ensuring the implementation of already approved budgets is more important than creating a new budget plan. However, the new government decided to boost reconstruction spending by another 6 trillion yen (1.3% of GDP), with 1.6 trillion yen in the January 2013 fiscal package and 4.4 trillion yen in the FY 2013 budget (see below). Reconstruction spending in FY 2011-15 is thus revised up to 25 trillion yen.

Box 2.2. **Financing reconstruction spending**

The government stated in 2011 that, "The financial cost for recovery and reconstruction shall basically be borne by the entire current generation (…) and not be left as a cost of future generations" (Government of Japan, 2011b). The first two packages, amounting to 6 trillion yen, were financed without additional borrowing, in line with the Fiscal Management Strategy's target of restricting bond issuance in FY 2011 to its FY 2010 level of 44 trillion yen. They were instead financed by *i)* borrowing 2.5 trillion yen from the basic pension system; *ii)* reducing other planned spending; *iii)* using the surplus from FY 2010; and *iv)* the reserve fund in the FY 2011 budget.

To finance spending beyond the first two packages, the government issued 10.5 trillion yen of "reconstruction bonds", which are managed under a separate account that was excluded from the Fiscal Management Strategy, as noted above. These bonds will be redeemed by temporary tax hikes:

- Surcharges on personal income (7.3 trillion yen), beginning in 2013 and lasting up to 25 years.
- Surcharges on corporate income (2.4 trillion yen) between FY 2012 and FY 2014, which will offset the decision taken in FY 2011 to cut the corporate tax rate (national plus local) from 40% to 35%.
- An increase in the personal income tax levied by local governments (0.8 trillion yen).

Additional resources for reconstruction will be provided by 3 trillion yen of spending cuts, including a reduction in the child allowance, and another 2 trillion yen will be raised through the sale of state-owned assets. In sum, all of the 19 trillion yen in reconstruction spending in 2011-16 will be financed without issuing conventional government bonds, leaving reconstruction outside of the Fiscal Management Strategy. The additional 6 trillion yen proposed by the new government will be financed by the sale of government shares in Japan Post Holdings (about 4 trillion yen) and by other sources, including expected cash surpluses carried over from previous years (amounting to about 2 trillion yen) over 2013-15, thereby avoiding additional tax hikes.

The government estimated that the three packages and the FY 2012 budget together have boosted real GDP by around 3%, primarily during FY 2011-12 (Table 2.3). Meanwhile, the negative impact of the temporary tax hikes is estimated to be negligible at only around 0.1% of GDP. Although reconstruction spending will eventually be covered by tax increases over the next 25 years (Box 2.2), it is exacerbating the current fiscal predicament. Indeed, the OECD estimates that the general government deficit in cyclically-adjusted terms widened from 7.9% of GDP in 2010 to 9.7% in 2012.

The consumption tax rate hike and social security reform

The Diet passed legislation in August 2012 to increase the consumption tax rate in two stages, from the current 5% to 8% in April 2014 and 10% in October 2015. However, the hike, which would be the first one since 1997, is conditional on "an improvement in economic conditions", which is to be assessed on a range of factors, although the bill does not spell out any numerical criteria to guide this assessment. While the hike of the consumption tax rate is stipulated by law in the context of an improvement in economic conditions, the government is required to:

- Implement comprehensive measures, together with other necessary actions, to bring the economy closer to a desirable rate of economic growth, aiming at achieving a nominal economic growth rate of 3% and a real economic growth rate of 2% at an annual average pace over the decade FY 2011-20, by overcoming deflation and revitalising the economy.
- When flexible fiscal policies are possible, consider necessary measures for Japan's economic growth, in part by allocating financial resources to areas of the growth strategy, as well as disaster prevention and minimising the damage from disasters.
- From the perspective of responding to major changes in economic and fiscal conditions in a flexible manner, the government will judge economic conditions in a comprehensive way by examining various economic factors, including the nominal and real growth rates and price developments, together with the two points mentioned above. The government will then take necessary measures, which may include a suspension of the tax hike.

The government is required to make a final decision based on a comprehensive review of the economic situation about half a year before the planned hike. The 10% tax rate would generate additional receipts of about 13.5 trillion yen (2.7% of 2015 GDP) (Table 2.4).

About one-fifth of the increased revenue is to be used to finance additional social security spending announced in 2011. The plan set out four basic principles aimed at improving the quality and efficiency of the system: *i)* avoiding a further widening of income disparities and social exclusion; *ii)* putting in place a high-quality and sustainable system; *iii)* narrowing the inter- and intra-generational gap in benefits and burdens; and *iv)* achieving a strong economy, robust public finances and a strong social security system (Government of Japan, 2011b). To help achieve these goals, the government will increase spending on childcare, health and long-term care and pensions by 2.7 trillion yen. Given that reforms are expected to result in 1.2 trillion yen in savings, 3.8 trillion yen will be

Table 2.4. **Comprehensive reform of social security and taxes**

In FY 2015

	Trillion yen	Consumption tax rate increase equivalent (in percentage points)[1]
Total	**13.5**	**5.0**
Introducing additional spending programmes	2.7	1.0
Of which		
Increase childcare services	0.6	0.2
Medial and long-term care services[2]	1.6	0.6
Pension benefits to low-income elderly	0.6	0.2
Funding existing commitments for social security spending	10.8	4.0
Securing a sound funding source for basic pensions	2.9	1.0
Financing other social security spending commitments	7.0	2.7
Increases in social security spending associated with the consumption tax hike	0.8	0.3

1. Calculations by the OECD.
2. To provide high-level hospital and in-home care and reduce payments for health insurance premiums.

Source: Ministry of Finance.

available for additional spending. The major initiatives in the social security reform include:

- Upgrading early childhood education and care (ECEC) services by increasing investment, while promoting the establishment of "Centres for ECEC" (*Nintei Kodomo-en*), which provide childcare and kindergarten services.
- Relaxing the qualifications for basic pension eligibility by reducing the minimum period of pension premium payments from the current 25 years to ten.
- Expanding the coverage of part-time workers in the employees' pension insurance (EPI) by relaxing the eligibility requirement from workers earning more than 98 000 yen (about $1 025) per month to those earning more than 88 000 yen (about a third of the average wage).
- Integrating the pension schemes of civil servants and private-school teachers with the EPI by matching pension benefits and premium payments under both schemes.

These priorities are in line with past OECD recommendations. *First*, greater investment in ECEC, as discussed in the chapter on education in the 2011 *OECD Economic Survey of Japan*, can generate large returns by increasing the quality of childcare, which has a positive impact on children's development, while favouring female labour force participation. In addition, providing high-quality services to children from low-income families promotes social cohesion. The integration of childcare and kindergarten, an objective of the 2010 New Growth Strategy, would improve quality while reducing administrative costs. *Second*, relaxing qualifications for basic pension eligibility would encourage participation in the system. However, it would increase the number of elderly with low pensions, who may need to be supported by other measures. *Third*, expanding the coverage of the EPI would help reduce firms' incentives to hire non-regular workers, as noted in the labour market chapter in the 2011 *OECD Economic Survey of Japan*. *Fourth*, integrating the occupational pension schemes with the EPI would promote labour mobility. However, social security reform should incorporate more cost-saving measures, notably reforming the fee schedule for health and long-term care and cutting public assistance for medical bills for high-income elderly, as suggested in the Draft Plan of Social Security and Tax Reform

(Government of Japan, 2011b). To promote reform, the Act for Promotion of Social Security Reform in August 2012 created a national council composed of experts on social security in the Cabinet. The government is required to take legislative measures by August 2013 based on the council's discussions.

The remaining 10.8 trillion yen (about 2% of GDP) raised by the consumption tax hike will finance existing social security spending, thereby reducing the deficit.[5] In particular, it will provide a permanent source for the government's contribution to the basic pension system (2.9 trillion yen in 2015), thus ending the reliance on stopgap measures, such as requiring the Japan Railway Construction, Transport and Technology Agency to return its surplus in FY 2011 and the special pension bonds issued in FY 2012-13. The tax hike will also be used to finance the rise in social security benefits due to the increase in the consumer price index resulting from the consumption tax hike (Table 2.4). The government also decided to strengthen the progressivity of the tax system by raising the top rate of the personal income tax from 40% to 45% and the top rate of the inheritance tax from 50% to 55%, while reducing the basic deduction of the inheritance tax. However, increasing the redistributive power of the tax system should focus on broadening the tax base rather than on increasing rates (see below).

The fiscal outlook

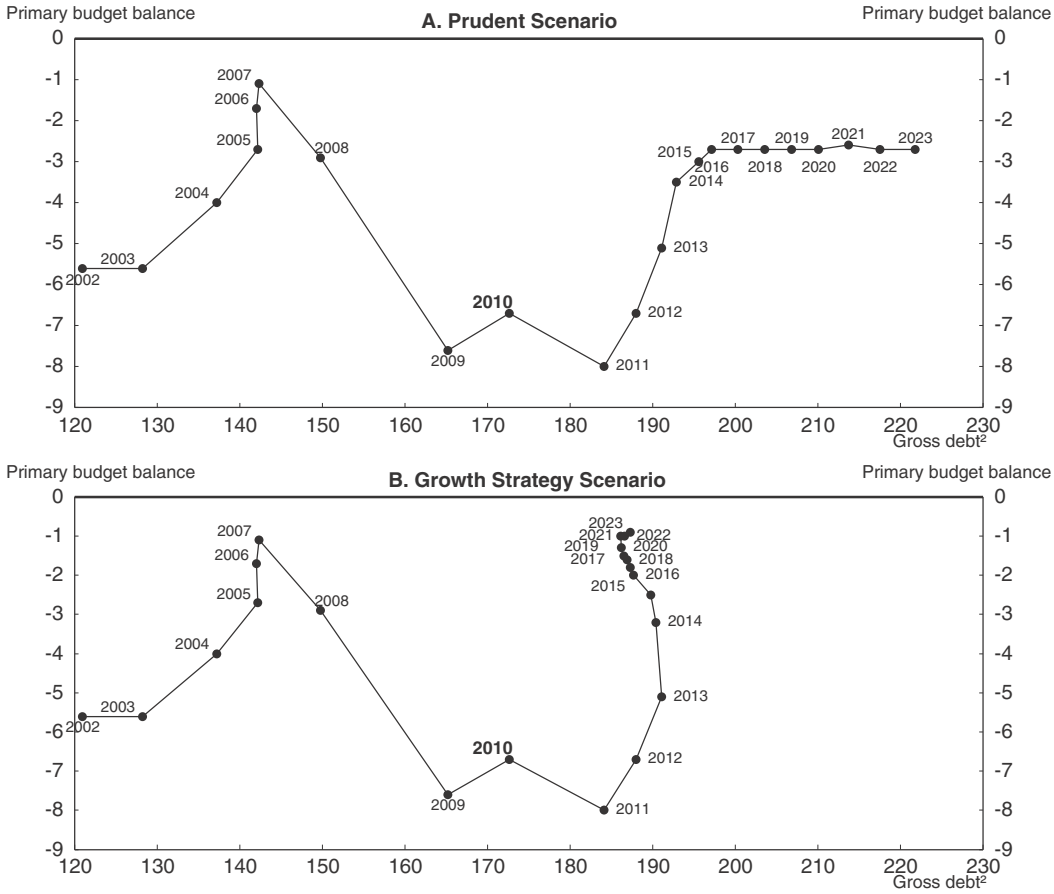
The planned increase in the consumption tax and the spending ceilings imposed by the Fiscal Management Strategy were judged to be sufficient to meet the Strategy's target of reducing the primary budget deficit to 3.2% of GDP in FY 2015, according to the projection made by the Cabinet Office in August 2012 (Figure 2.6). However, even before the January 2013 fiscal package, the primary budget was expected to remain in deficit through FY 2023 under both scenarios in the projection, even assuming that primary spending, excluding social security, was constant after FY 2015:

- In the "prudent scenario" (Panel A), which assumes nominal GDP growth of around 1½ per cent over the next decade, the primary budget deficit was projected to level off at around 3% of GDP in FY 2015. Consequently, the public debt ratio was to rise by about 40% of GDP by 2023.
- The "Growth Strategy scenario" (Panel B) assumed a real growth rate of around 2% over the next decade through the implementation of reforms and a nominal GDP growth rate of 3% by overcoming deflation. Even with faster growth, the primary budget was projected to remain in deficit at about 1% of GDP in FY 2023.

Both scenarios thus assumed that nominal GDP, which has declined at a ¾ per cent annual rate during the past decade, achieves positive growth. The prudent scenario was the more realistic baseline, given the difficulty of achieving an average of 2% real growth. Indeed, the Cabinet Office estimate of potential growth is 0.9% (Cabinet Office, 2012), which is close to the OECD estimate.

Figure 2.6. **The primary budget balance is projected to remain in deficit through 2023**[1]

Primary budget balance of central and local governments and gross debt[2] as a per cent of GDP



1. The projections include a "prudent scenario" and a "Growth Strategy scenario", based on different assumptions about productivity, the labour force and world growth. The projections assume that primary spending is frozen in nominal terms during FY 2013-15. During the following years, primary spending, excluding social security outlays, is assumed to be constant in real terms.
2. The definition of gross public debt in this figure consists of central and local government bonds and loans by the "Special Account for Local Allocation and Local Transfer Tax". It is thus less than the OECD figure, which is based on general government as defined in SNA93. The difference between the Cabinet Office and OECD figures is primarily due to short-term bonds, the social security fund's debt and other liabilities that are not accounted for by the Cabinet Office.

Source: Cabinet Office (2012).

StatLink http://dx.doi.org/10.1787/888932798202

The 2013 fiscal package

With Japan having fallen into recession for the third time in five years, the new government in its first month in office introduced a stimulus package of 10.3 trillion yen (2.2% of GDP) in January 2013 that it expects to lift real GDP by around 2% (Box 2.3). The supplementary budget for the package is expected to total 13.1 trillion yen, as it includes the government's 2.6 trillion yen contribution to the basic pension. The economic impact of the package on growth will facilitate a decision to implement the consumption tax hike as planned.

Given signs of renewed growth in early 2013, the fiscal stimulus package raises a number of concerns. *First*, with public works spending accounting for almost one-half of the fiscal

Box 2.3. **The January 2013 fiscal package**

There are three main priorities in the latest fiscal package:

I. Reconstruction of the Tohoku region and disaster prevention (3.8 trillion yen);

A. Acceleration of reconstruction efforts (1.6 trillion yen)

i) Building and improving the social infrastructure, facilitating the settlement of residents, etc.

ii) Restoring industries and creating employment opportunities.

iii) Promoting swift recovery from the nuclear plant disaster.

B. Strengthening the resilience of infrastructure for better disaster prevention (2.2 trillion yen)

i) Rebuilding ageing infrastructure that protects lives and livelihood.

ii) Developing protective measures against disasters to ensure the functioning of key social infrastructure.

iii) Disaster prevention measures to improve the quake-resistance of schools and address the ageing of buildings.

iv) Strengthening the large-scale disaster response systems.

II. Measures to promote industrial competitiveness and innovation (3.1 trillion yen)

A. Stimulating private investment (1.8 trillion yen)

i) Encouraging business investment, including to promote energy savings and renewable energy, in part by providing subsidies.

ii) Promoting R&D and innovation.

iii) Improving infrastructure that will help strengthen international competitiveness.

iv) Resource and oceanic development.

B. Measures for small and medium-sized enterprises (SMEs) and agriculture, forestry and fisheries (0.9 trillion yen)

i) Fostering SMEs and small-scale businesses.

ii) Improving the competitiveness of agriculture, forestry and fisheries through aggressive promotion, including expanding exports..

C. Facilitating the expansion of Japanese businesses in overseas markets (0.1 trillion yen)

i) Creating a public-private fund to promote mergers and acquisitions by Japanese firms abroad.

D. Promoting human capital development and employment (0.3 trillion yen)

III. Promoting the security of daily life and regional revitalisation (3.1 trillion yen)

A. Ensuring a sense of security in daily life (0.8 trillion yen)

i) Improving the health-care system.

ii) Ensuring the security of students and promoting measures to support parents in raising children.

iii) Promoting a safer and higher quality living space and facilitating the creation of a recycling society.

iv) Achieving a sense of national security.

B. Revitalising regions by making use of local assets (0.9 trillion yen)

i) Promoting tourism.

ii) Developing policies to revitalise public transport and other measures.

iii) Revitalising regional economies using local assets and accelerating the construction of resident-friendly communities.

iv) Promoting the renovation of regional cities and compact cities.

C. Supporting local government funding and ensuring swift implementation of emergency measures (1.4 trillion yen)

Source: Government of Japan (2013).

package, there is concern that it will provide only a temporary boost to growth, while increasing government debt, although the package aims at enhancing growth potential. Between 1990 and 2008, Japan introduced 15 fiscal stimulus packages containing public works spending, amounting cumulatively to 15% of 2011 GDP, without much positive impact on its growth potential (Brückner and Tuladhar, 2010). *Second*, the additional borrowing to finance the package requires breaking the 44 trillion yen ceiling on bond issuance and the 71 trillion yen ceiling on primary spending in FY 2012, adding to uncertainty as the new government prepares a new basic reform programme for economic and fiscal management by mid-2013 and raising risks of an adverse reaction in the government bond market. The government's decision in January 2013 that it will maintain the fiscal targets for FY 2015 and FY 2020 discussed above is a positive sign. *Third*, even if the package in FY 2012 lifts growth, it further enlarges the already large fiscal consolidation needed to achieve the FY 2015 primary deficit target of 3.2% of GDP that the new government has retained. Past experience in OECD countries shows that even a short delay in consolidation increases the required tightening of the underlying primary balance to reach prudent debt levels (OECD, 2012b).

The draft budget for FY 2013 reduces general account expenditures by 0.3% (Table 2.2), the first decline in seven years, underscoring the new government's intention to maintain fiscal discipline. Consequently, primary spending is to be kept below the 71 trillion yen ceiling set by the Fiscal Management Strategy for the third straight year on an initial budget basis. Public investment is to rise by more than 15%, reflecting the new government's emphasis on strengthening infrastructure. This will be offset by eliminating contingency funds and cutting transfers to local government. On the revenue side, tax receipts were expected to increase by 1.8% in the context of an economic recovery. Nevertheless, borrowing continues to account for about half of central government revenue, in addition to 112 trillion yen of refinancing bonds in FY 2013.

An appropriate long-term fiscal target and policies to achieve it

The Fiscal Management Strategy called for a primary budget surplus for central and local governments by FY 2020 without specifying a numerical target and the new government has said that it will keep that target. It is crucial that the new government's fiscal strategy set a target high enough to stabilise the debt ratio. The appropriate target depends on the gap between the nominal interest rate and the nominal growth rate, and the debt ratio (Box 2.4). The government's long-term projection has a 1.2 point gap in FY 2020. If the gap between the interest rate and nominal growth were to be 1½ percentage points, Japan's average gap recorded between 1981 and 2011, Japan would need a primary budget surplus of around 3.9% of GDP just to stabilise the debt ratio, with a larger budget surplus necessary to start reducing it. Given that the primary budget balance was projected to remain in deficit at 3% of GDP in FY 2020 under the "prudent scenario" (Figure 2.6), achieving a 3.9% of GDP surplus implies an improvement of 6.9% of GDP just to stabilise the debt ratio (Table 2.5) and even more to achieve its goal of reducing it from FY 2021. However, achieving faster nominal growth, either through inflation or higher real output, would reduce the size of the primary budget surplus necessary to stabilise the debt ratio and, moreover, would stabilise it a lower level.

As noted above, the Fiscal Management Strategy targeted the primary balance of central and local governments, even though the evolution of public debt depends on the general government balance, which includes the social security balance. The social security balance has been in deficit every year since FY 2002, averaging 0.6% of GDP, and

Box 2.4. **Setting an appropriate fiscal target**

The evolution of the debt ratio is sensitive to nominal output growth and the gap between the nominal interest rate and the nominal growth rate, as illustrated in Table 2.5. In this mechanical calculation, the primary budget deficit is assumed to remain at 3% of GDP through 2020, as projected in the government's "prudent scenario", even as nominal output growth varies due to changes in inflation, while real output growth remains at 1%. Such an assumption may be reasonable for Japan, given that the impact of inflation on the primary budget balance (D), shown in the following equation, is close to nil:

$\Delta D = g[bX - aR] = gR\,[b\,(X/R) - a]$, where

g = nominal economic growth

b = elasticity of spending, *i.e.* the rise in spending due to a 1% rise in nominal growth (estimated at close to 1.0)

X = primary spending

a = elasticity of tax, *i.e.* the rise in tax revenue due to a 1% rise in nominal growth (estimated at about 1.1)

R = tax revenue

The ratio of primary spending to revenue (X/R) in Japan is about 1.1, implying that the primary balance is little affected by changes in inflation.

Table 2.5. **An illustration of debt dynamics**

On a general government basis through 2020[1]

A. Level at which debt-to-GDP ratio is stabilised (% of GDP)[2]

Gap between interest rate and nominal growth[3]	**Nominal growth rate** (per cent at an annual average rate through 2020)				
	-0.75	**1.5**	**3.0**	**5.0**	**10.0**
0.0	284	248	227	202	153
1.5	298	**261**	239	**213**	161
3.0	314	274	251	224	169
4.5	330	288	264	235	178

B. Improvement in the primary budget surplus needed to stabilise the debt-to-GDP ratio (% of GDP)

Gap between interest rate and nominal growth[3]	**Nominal growth rate** (per cent at an annual average rate through 2020)				
	-0.75	**1.5**	**3.0**	**5.0**	**10.0**
0.0	3.0	3.0	3.0	3.0	3.0
1.5	7.5	**6.9**	6.6	**6.2**	5.4
3.0	12.4	11.2	10.5	9.7	8.1
4.5	17.9	16.0	14.9	13.6	11.0

1. General government (central and local government, plus social security) is the appropriate measure as it determines the evolution of government debt.
2. The calculations are anchored on the projection of a debt ratio of 230% of GDP in 2014 (*OECD Economic Outlook*, No. 92).
3. In percentage points in 2020. The average gap during the past 30 years was 1.5 points. The interest rate is the government's effective borrowing rate.

Source: OECD Economic Outlook Database and OECD calculations.

Box 2.4. **Setting an appropriate fiscal target** *(cont.)*

A 3% primary deficit through 2020 in the government's "prudent scenario" of 1.5% nominal GDP growth, combined with a 1.5 percentage-point gap between the interest rate and nominal GDP growth, boosts the debt ratio to 261% in 2020 (Panel A). The formula below can be used to calculate the primary balance necessary to stabilise the debt ratio:

(r – g) * (debt/GDP), where r represents the nominal interest rate and g the nominal growth rate

A primary surplus of 3.9% is necessary to stabilise the debt ratio (assuming no special factors such as privatisation revenues). Moving from a primary deficit of 3% of GDP to a surplus of 3.9% implies an improvement of 6.9% of GDP (Panel B). However, if the nominal annual average growth rate were 5%, nominal GDP in 2020 would be substantially larger, reducing the debt ratio to 213% of GDP (Panel A). Based on the above identity, a primary surplus of 3.2% would be needed to stabilise the debt ratio, implying an overall improvement of 6.2% of GDP.

the Cabinet Office's long-term projections imply that it will remain in deficit every year through FY 2021. Bringing the social security system into balance increases the amount of fiscal consolidation necessary to stabilise the public debt ratio.

Given its unprecedented level of public debt, the Fiscal Management Strategy's objective of reducing the debt ratio was appropriate. Indeed, fiscal consolidation is not only about stabilising debt, but also reducing it to an appropriate long-term level (Sutherland *et al.*, 2012). As Japan advances toward a primary budget surplus, it should set a long-term path in the 2020s to reduce the public debt ratio.

It is essential to maintain confidence in Japan's fiscal sustainability despite the high level of the debt and deficits and the extended period of consolidation ahead. A priority to sustain confidence is to draw up and commit to a detailed and credible medium-term plan containing specific spending cuts and tax increases necessary to achieve a primary budget surplus. The following sections discuss specific spending and tax policies before considering measures to improve the fiscal policy framework.

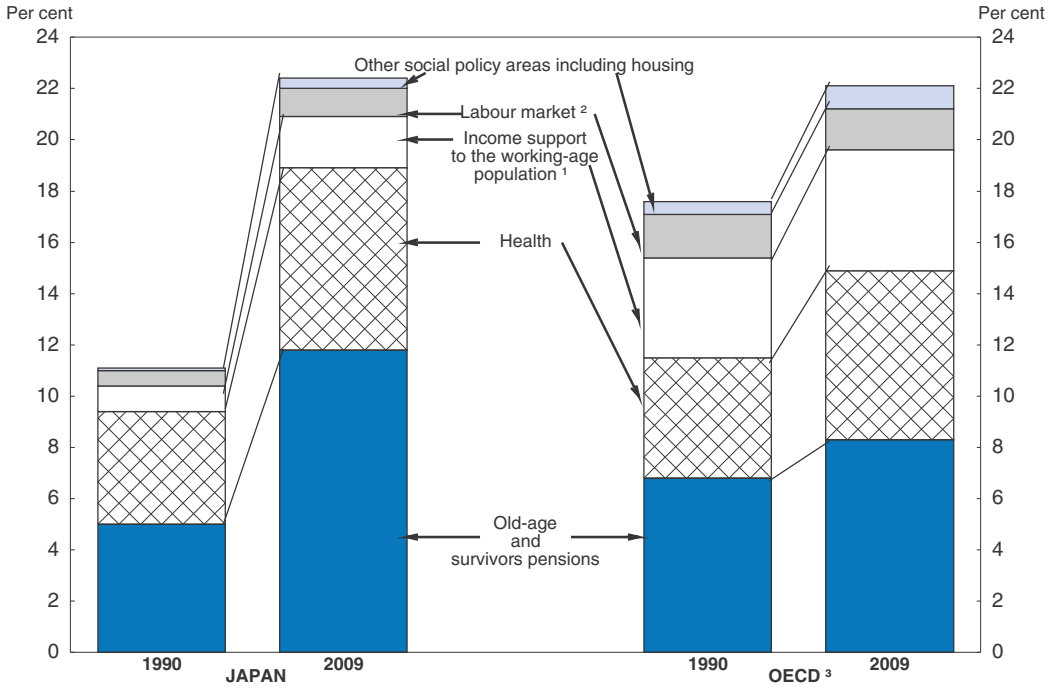
Controlling spending

Reforming the social security system

Given that the increase in government expenditures is largely driven by rising public social spending, social security reform is key to controlling spending. The OECD measure of public social spending shows an increase from 11% of GDP in Japan in 1990 to 22% in 2009, a level that matches the OECD average (Figure 2.7). Pension and health spending accounted for 9 percentage points of the increase. The upward trend is likely to continue, driven by population ageing; the number of persons over age 65 is projected to increase by 17% by 2020, pushing the elderly dependency ratio above 50% and keeping it the highest among OECD countries. Under the current framework, Japan expects total public social spending to rise from 22.8% of GDP in FY 2012 to 23.6% in FY 2020 (Table 2.6), with central and local government's financing rising from 8.5% of GDP to 9.2% and the remainder financed by the social security fund. Under the social security reform plan, which includes new spending measures (Table 2.4), total public social spending would increase further to 24.1% of GDP.

Figure 2.7. **Public social spending has risen rapidly, driven by pensions and health care**

As per cent of GDP



1. Includes the spending categories "Incapacity related'' and ''Family''.
2. Includes the spending categories of ''Active labour market programmes'' and ''Unemployment''.
3. Weighted average of 34 OECD countries.

Source: OECD Social Expenditure Database.

Table 2.6. **Projection of social security spending**

	FY 2012		FY 2020				FY 2025			
			Without reform		With reform[1]		Without reform		With reform[1]	
	Trillion yen	Share of GDP[2]	Trillion yen	Share of GDP[2]	Trillion yen	Share of GDP[2]	Trillion yen	Share of GDP[2]	Trillion yen	Share of GDP[2]
Total benefits	**109.5**	**22.8**	**131.8**	**23.6**	**134.4**	**24.1**	**144.8**	**23.7**	**148.9**	**24.4**
Pension	53.8	11.2	58.5	10.5	-	-	60.4	9.9	-	-
Health care	35.1	7.3	46.1	8.3	46.9	8.4	53.3	8.7	54.0	8.9
Long-term care	8.4	1.8	13.1	2.3	14.9	2.7	16.4	2.7	19.8	3.2
Childcare	4.8	1.0	5.8	1.0	-	-	5.6	0.9	-	-
Others	7.4	1.5	8.4	1.5	-	-	9.0	1.5	-	-
Total contributions	**101.2**	**21.1**	**126.8**	**22.7**	**129.5**	**23.2**	**142.1**	**23.3**	**146.2**	**23.9**
Premium payments	60.6	12.6	75.3	13.5	76.5	13.7	83.9	13.7	85.7	14.0
Government	40.6	8.5	51.6	9.2	52.9	9.5	58.3	9.5	60.5	9.9
Of which:										
Pension	12.4	2.6	13.2	2.4	-	-	13.7	2.2	-	-
Health care	15.0	3.1	21.1	3.8	21.4	3.8	25.2	4.1	25.5	4.2
Long-term care	4.8	1.0	7.3	1.3	8.4	1.5	9.2	1.5	11.1	1.8

1. Includes the new spending measures planned in the comprehensive social security reform (Table 2.4), such as the provision of high-level hospital and in-home care and the reduction of payments for health insurance premiums.
2. The GDP growth rate is based on the Cabinet Office's "prudent scenario" announced in January 2012. The Ministry of Health, Labour and Welfare assumes an annual nominal growth rate of 1.7% after FY 2023.

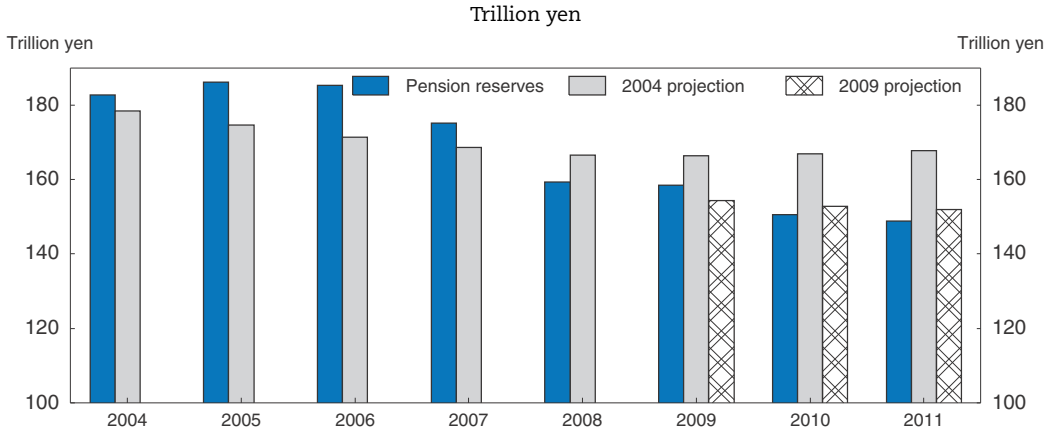
Source: Ministry of Health, Labour and Welfare (2012).

Pension reform. The 2004 pension reform, which aimed at ensuring the sustainability of the system for up to 100 years, was projected to reduce pension spending from 11.2% of GDP in FY 2012 to 10.5% in FY 2020 and further to 9.9% in FY 2025, despite population ageing. The 2004 reform is raising the contribution rate from 13.6% to 18.3% by FY 2017. It also introduced "macroeconomic indexation", which adjusts pension benefits based on changes in the number of contributors and life expectancy. In addition, the government's contribution rate to the basic pension was increased from one-third in FY 2004 to one-half in FY 2009.

Despite these reforms, concern about the sustainability of the public pension system is growing. *First*, the share of the population paying the mandatory pension contribution has fallen for six straight years, dropping from 67% in FY 2005 to 59% in FY 2011, far below the 80% necessary to maintain the current system. The falling contribution rate reflects weakening confidence in the pension system following the loss of pension records reported in 2007. Moreover, the rising share of non-regular workers, who earn substantially lower wages, reduces contributions. *Second*, the price indexation of pension benefits was suspended in the early 2000s. Given deflation, therefore, pension benefits in real terms are substantially higher than planned (Hosen, 2010). According to the government, the overpayment of pension benefits, relative to the level implied by the original indexation rule, pushes up total benefits by around 1 trillion yen (0.2% of GDP) a year on average. These factors, combined with weak economic growth, caused the pension fund – the reserve for future pension spending – to shrink faster than projected in the 2004 reform (Figure 2.8). Reserves in FY 2011 were 149 trillion yen, more than 10% below the 168 trillion yen projected in 2004, raising concern about the system's long-run sustainability. In 2012, the Diet passed a bill to eliminate the overpayment of pension benefits in three steps by FY 2015.

There are three options to ensure the sustainability of the pension system: raising the pension eligibility age, increasing contributions or reducing pension benefits (or some combination thereof). However, pension benefits are already low. Indeed, the average gross replacement rate (the pension benefit as a share of gross wages for a couple with one earner) is 48%, the fifth lowest in the OECD area and well below the 57% average (OECD, 2011c). Reducing benefits would increase old-age poverty. As for boosting the contribution rate, it could further reduce the number of persons contributing to the pension system, while weakening work incentives by raising the tax burden.

Figure 2.8. **Pension reserves have declined faster than expected**[1]



1. Includes the national and employees' pension schemes and Employees' Pension Funds. Final budget basis.
Source: Ministry of Health, Labour and Welfare.

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The best option therefore is to increase the pension eligibility age, as it would reduce the fiscal burden while raising the labour participation of older persons (Sutherland *et al.*, 2012). The pension eligibility age is now 64 for men (62 for women) for the basic pension and 60 for the EPI. Although the age is to be raised to 65 by 2025 for men and 2030 for women, it will remain relatively low compared to Japan's life expectancy of 84 years, the world's longest. Consequently, the gap between life expectancy and the pension eligibility age is larger in Japan than in most OECD countries. Accelerating the increase in the eligibility age to 65 and raising it further – through a link to longevity – would help achieve fiscal sustainability. In addition, a higher retirement age would narrow the intergenerational gap between benefits and contributions, which currently favours older generations. A hike in the pension eligibility age should be accompanied by eliminating the preferential treatment of pension income. At present, around three-quarters of pension benefit income is tax-exempt (Kashiwase *et al.*, 2012). Finally, pension contributions should be collected from the spouses of workers in the EPI system, as they are eligible for benefits.

Health and long-term care reform. Japan also needs to limit the upward trend in health and long-term care spending, which is projected to rise from 9.1% of GDP in FY 2012 to 11.1% in FY 2020 under the reform scenario, which aims to improve the quality of services (Table 2.6). The chapter on health care in the 2009 *OECD Economic Survey of Japan* identified a number of policies to contain health and long-term care spending:

- Shift long-term care away from hospitals toward more appropriate institutions using the fee schedule and closer monitoring of patient classifications in hospitals. This would shorten the average length of hospital stays, which is the highest in the OECD area and almost four times the average (Table 2.7).
- Improve the payment system by reforming the diagnosis procedure combination (DPC), which sets an overall fee based on the illness, so as to strengthen incentives for hospitals to increase efficiency. While the DPC coverage has risen to around half of acute-care hospital beds, the basis for reimbursement should be shifted to the best-performing hospitals rather than the worst. The payment system for out-patient care also needs to be reformed to reduce the large number of physician consultations per year.
- Expand the use of generic medicine by making them the standard for reimbursement. Generics accounted for only 21% of prescriptions in volume terms in 2011, compared to 59% in the United States. Moreover, they cost more relative to branded drugs than in the United States.

Table 2.7. **International comparison of health-care services in 2010 or latest year available**

	Number of hospital beds[1, 2]	Average hospital stay (in days)	Number of physicians[1]	Number of medical graduates[3]	Number of physician consultations per capita per year	Number of consultations per physician per year
Japan	13.6	32.5	2.2	6.0	13.1	5 874
OECD average	4.9	8.5	3.1	10.3	6.4	2 337
Highest country	13.6	32.5	4.8	22.8	13.1	6 482
Lowest country	1.6	3.9	2.0	4.1	2.9	763

1. Per 1 000 population.
2. Hospital beds for acute care.
3. Per 100 000 population.

Source: OECD Health Database 2012.

- Introduce gatekeepers to reduce the number of unnecessary consultations with specialists. In contrast to many other OECD countries, patients are allowed to see any specialist with full reimbursement by the National Health Insurance.

The government has introduced several reforms to achieve such objectives, such as the 2012 revision of the Long-term Care Insurance Act, which aims at promoting community-based care, and the 2012 revision of medical fees, which is intended to increase the use of generic medicine. However, more reforms are needed.

Cutting government personnel costs

Government employment fell by 9% between FY 2001 and FY 2010. To help finance reconstruction spending, the number of new graduates hired by the central government in FY 2013 is to be halved compared to FY 2009 while salaries are to be cut by about 8% in both FY 2012 and FY 2013. Also, the retirement allowances for central government officials are to be reduced by 15% by 2014. In addition to cutting public employment and wage levels, the priority should be to reform the government wage system, which has a steeper tenure profile and stronger downward rigidity than in the private sector. Such reforms should be extended to local governments, which account for more than 70% of total government personnel costs, and to public enterprises. Wages for local government officials were 7% higher than for those in the central government in FY 2012, despite the higher cost of living in Tokyo, where most central government employees live. This reflects the fact that wage cuts for central government employees were not applied to local jurisdictions. Local governments are required to take measures in FY 2013 to reduce their personnel costs, taking into account wage cuts imposed on central government employees.

Reducing public investment

Reconstruction from the 2011 earthquake and tsunami boosted public investment from 4.6% of GDP in 2010 to an estimated 4.8% in 2012, with a further increase expected in 2013, as public investment is set to rise 16% to improve infrastructure related to ageing and disaster prevention. As reconstruction spending fades, the long-run fall in public investment can resume, although the cost of maintaining public infrastructure limits the scope for decline. According to the Ministry of Land, Infrastructure and Transport, maintenance costs, which accounted for around half of total investment in FY 2010, will exceed the current level of all public investment by FY 2037, thus crowding out new investment projects (MLIT, 2010). Sustaining Japan's growth potential through productive public investment requires closing unnecessary public infrastructure to reduce maintenance costs. Moreover, the allocation of public investment should be driven more by economic criteria to improve the low marginal productivity of public capital, than by concern about balanced regional development. Public investment by prefecture falls as the level of income increases (2008 *OECD Economic Survey of Japan*).

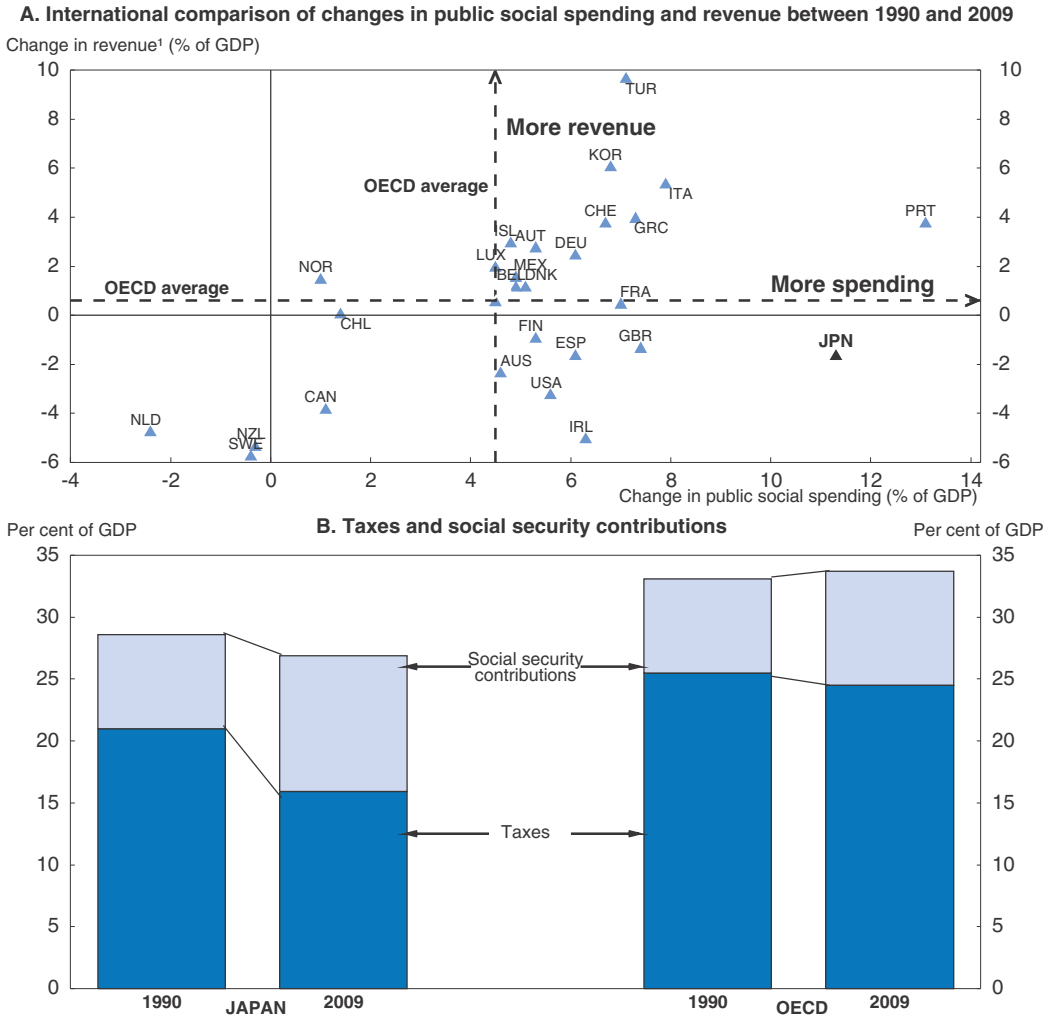
Increasing government revenue

Government spending in Japan, excluding interest payments and social security outlays, was the fifth lowest in the OECD area at 27% of GDP in 2010, compared to an OECD average of 33%, suggesting limited scope for spending cuts. Moreover, continued rapid ageing will keep the elderly's share of the population the highest in the OECD. In the government's long-term projection, the primary budget remains in deficit through 2023 even if primary spending, excluding social security, is kept constant (Figure 2.6). In short,

revenue increases are inevitable if fiscal sustainability is to be achieved. Tax revenues were the seventh lowest in the OECD at 27.6% of GDP in 2010. A recent OECD study found that large consolidations tend to be achieved through both revenue and spending measures (Molnar, 2012).

Japan's tax revenue has failed to increase in line with social spending. As noted above, public social spending doubled from 11% of GDP in 1990 to 22% in 2009, the second-largest increase among OECD countries after Portugal and well above the OECD average of 4% (Figure 2.9). Meanwhile, total revenue fell by 1.5% of GDP over the same period in Japan, as the rise in social security contributions was more than offset by the fall in tax revenue (Panel B). In sum, the deterioration in the balance between public social spending and revenue stands out in Japan.

Figure 2.9. **Public social spending has risen while revenue fell in Japan**



1. Includes tax and social security contributions.

Source: OECD Social Expenditure Database and *OECD Revenue Statistics Database*.

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The consumption tax needs to be further increased after 2015

Taxes on goods and services amounted to 5.2% of GDP in 2010, less than one-half of the OECD average (Table 2.8). Revenue increases should come primarily from further hikes in the consumption tax, which is a value-added tax (VAT). It currently generates revenues of only 2.6% of GDP, reflecting the low rate of 5%, the lowest in the OECD and well below the OECD average of 18%. A VAT is a relatively stable revenue source and less harmful for economic growth, as it imposes fewer distortions on employment and investment (Arnold *et al.*, 2011). A greater role for the VAT would also improve intergenerational equity, as the elderly would bear more of the tax burden. In short, a VAT is the most appropriate tax for raising the revenue needed to achieve a balanced budget.

Table 2.8. **The tax mix in OECD countries**

Tax revenue as a per cent of GDP

	2000		2010			Change[1]
	Japan	OECD	Japan	Rank	OECD	2000-10
Direct taxes on households	5.6	9.3	5.1	26	8.4	-0.5
Direct taxes on firms	3.7	3.4	3.2	9	2.9	-0.5
Social security and payroll	9.4	9.3	11.4	15	9.5	2.0
Goods and services	5.1	11.3	5.2	33	11.0	0.1
Property	2.8	1.8	2.7	8	1.8	-0.1
Holding taxes	2.0	0.9	2.1	6	1.0	0.1
Taxes on property transactions	0.4	0.6	0.3	19	0.4	-0.1
Estate, inheritance and gift taxes	0.3	0.1	0.3	5	0.1	0.0
Other	0.1	0.2	0.1	13	0.2	0.0
Total	**26.6**	**35.2**	**27.6**	**28**	**33.8**	**1.0**

1. For Japan in percentage points.

Source: OECD Revenue Statistics 1965-2011 (edition 2012).

Even with the doubling of the consumption tax rate to 10% by 2015, the government's projection shows that the primary budget balance would remain in deficit of around 3% of GDP in FY 2020 (Figure 2.6). If the primary balance were to be achieved through the consumption tax alone, the rate would need to rise by six percentage points to 16%, given that a one-point hike in the consumption tax rate generates revenue equivalent to ½ per cent of GDP. Achieving the primary budget surplus of 3.9% needed to stabilise the debt ratio (Table 2.5) would require another eight percentage-point hike in the tax rate. Consequently, 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. Reducing the debt ratio from 2021 would require an even larger tax hike.

The comprehensive reform plan for social security and taxes has led to discussions of whether to introduce a multiple-rate VAT, with a lower rate for food and other necessities, to mitigate the regressive nature of a higher consumption tax. Given its single-rate approach, Japan's VAT base is the eighth largest in the OECD area.[6] Japan should retain its single-rate approach, as a multiple-rate VAT would have little impact on the regressive nature of the consumption tax (Owens *et al.*, 2011). Instead, the negative impact on income distribution should be addressed through other measures targeted on low-income earners, notably an earned income tax credit (EITC) (see below). In addition, introducing multiple VAT rates has a number of drawbacks. *First*, it would entail higher administrative and compliance costs. *Second*, it would provide opportunities for fraud through the

misclassification of items. *Third*, it would have to be compensated by a higher standard rate. *Fourth*, it would reduce the neutrality of the VAT, thus distorting consumption decisions and decreasing welfare.

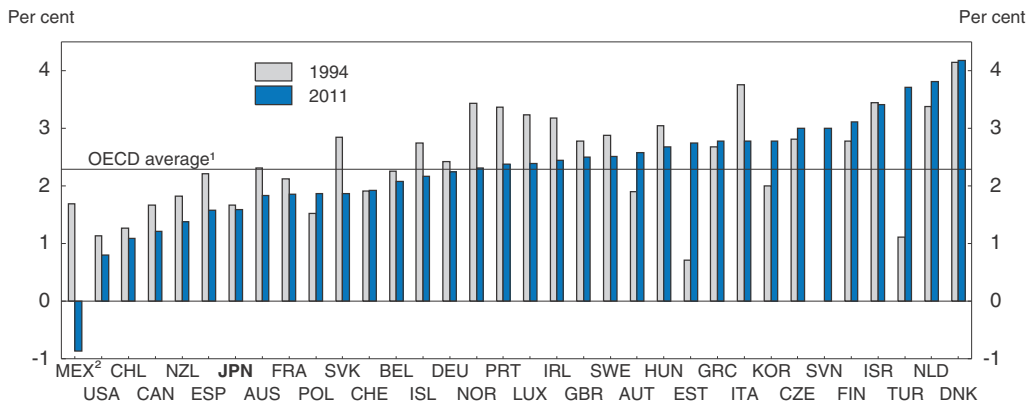
As noted above, the implementation of the tax hike in 2014 and 2015 is contingent on an improvement in the economic situation, which is to be assessed based on a range of factors explained above. While it is important to avoid a recession, the authorities should also consider the risk that delaying fiscal consolidation would hurt credibility and lead to a rise in long-term interest rates. Although consolidation may slow output growth in the short term, a number of studies find that credible consolidation has a positive impact on growth in the medium and long run by boosting private-sector confidence (OECD, 2010a and OECD 2010b). The importance of limiting the impact of fiscal consolidation does suggest that the hike in the VAT towards 20% and above should be implemented gradually.

Other measures to boost revenues

Environmental taxes hold the promise of both boosting revenue and helping to achieve environmental objectives, such as reducing pollution and greenhouse gas emissions. While revenues from environmentally-oriented taxes averaged 2.3% of GDP in the OECD, their share in Japan was only 1.6% (Figure 2.10). Further promoting the use of such taxes would spur green innovation and growth, in addition to raising additional revenue and achieving environmental objectives.

Figure 2.10. **Revenues from environmental taxes are low in Japan**

Per cent of GDP



1. The solid line shows the arithmetic average. The weighted average was 2%.
2. In Mexico, consumer prices on motor vehicle fuels are held more or less constant, in spite of large variations in world market prices. In years when world market prices are high, the excise tax on fuels turns into a subsidy – equalling 1% of GDP in 2011.

Source: OECD/EEA Database on Instruments Used for Environmental Policy.

StatLink http://dx.doi.org/10.1787/888932798259

Broadening personal and corporate income tax bases is another option to raise revenue, although in the FY 2013 budget, tax deductions have been expanded. In Japan, less than one-half of wage income is taxed, reflecting deductions for wage income that are intended to level the playing field for employees relative to the self-employed. As a result, personal income tax revenues are low in Japan, at 5.1% of GDP in 2010, well below the OECD average (Table 2.8). Additional personal income tax revenue could be generated by

broadening the tax base as transparency about self-employed income is enhanced. For example, taxation of pension income should be strengthened (2008 *OECD Economic Survey of Japan*). Moreover, reforming the treatment of spouse earnings under the tax and social security system would also boost incentives for female employment.

Less than one-half of firms pay income tax. Corporate income tax revenues were close to the OECD average of around 3% of GDP in 2010 (Table 2.8), as the narrow tax base was offset by a relatively high tax rate. Indeed, Japan's corporate tax rate of 39.5% in 2011 was the highest in the OECD and well above the average of 25.5%. As noted above, the corporate tax rate was reduced to 35% in 2012, although the cut has been temporarily offset by a surcharge in FY 2012-14 to pay for reconstruction spending. At the same time, the base broadened, in part by revising the special tax measures for depreciation and loss carryover provisions. The high corporate income tax rate weakens the economic performance of Japanese firms paying the tax, while the numerous exemptions distort the allocation of resources and investment. Further cutting the corporate tax rate and widening its base would stimulate economic activity without necessarily reducing revenues. Cutting down the number and size of tax expenditures, particularly those that target specific industries and regions, would improve the allocation of resources (2008 *OECD Economic Survey of Japan*).

Improving the fiscal policy framework

Independent fiscal councils

Maintaining market confidence in Japan's fiscal position is essential, particularly in light of the sovereign debt crisis in the euro area. In addition to a detailed and credible medium-term plan of spending cuts and tax increases, Japan needs improvements in its fiscal policy framework, as discussed in the fiscal chapter in the 2011 *OECD Economic Survey of Japan*. Responsibility for fiscal policy in Japan has been divided between three institutions: *i*) the Cabinet Office is responsible for the economic forecast underlying annual budgets and produces medium to long-term economic and fiscal projections; *ii*) the Ministry of Finance formulates the annual budgets; and *iii*) the National Policy Unit (NPU), created in 2009 and closed in 2012, set the Fiscal Management Strategy (Box 2.1) and evaluated progress each year in implementing it. While each institution has a different role, thereby enhancing transparency in the policy process, none of them is independent from policymaking.

The establishment of independent fiscal councils in many OECD countries in recent years has helped to improve fiscal policymaking (OECD, 2012a). Such councils have a number of benefits, including providing objective policy analysis and independent budget forecasts. One of the lessons from fiscal councils is that they need to be independent from policymaking and appropriately resourced if they are to boost policy credibility (Hagemann, 2010). Most importantly, such an institution can play a key role in monitoring and assessing fiscal performance relative to the announced objectives. Given such benefits, independent fiscal councils have been established in Sweden (2007), Canada (2008), Slovenia (2010), the United Kingdom (2010), and Australia, Ireland, Portugal, and the Slovak Republic (2011-12) (OECD, 2012a). Several countries have adopted fiscal rules or reformed their budget frameworks, set constitutional limits on debt or deficits (Spain and Poland) or reintroduced pay-as-you-go (Germany, Switzerland, and the United States) (Sutherland *et al.*, 2012). In sum, the creation of independent fiscal institutions is a sign of political commitment to fiscal consolidation and promotes fiscal discipline and

compliance with fiscal rules. The benefit of an independent fiscal council in Japan would be particularly large, given the unprecedented size of its debt ratio and the risk of higher interest rates during the decade, at least, of fiscal consolidation ahead. Such a council, for instance, could provide an objective analysis of economic conditions to determine whether the tax hike should be implemented as planned.

The resurrection by the new government of Japan's Council on Economic and Fiscal Policy (CEFP), which played an important role in fiscal consolidation in the past, could be an important step in this regard. The CEFP will prepare the new government's *Basic Policy for Economic and Fiscal Management* by mid-2013 to replace the Fiscal Management Strategy. The CEFP, though, is not independent from policymaking as its 11 members include the prime minister, four economic ministers, the chief cabinet secretary and the Bank of Japan governor, in addition to two academic experts and two business leaders. Nevertheless, the presence of four private-sector experts may help it function as an objective body in evaluating progress in fiscal consolidation, thereby helping to sustain confidence in the fiscal position.

Other key reforms should include a stronger legal foundation for medium and long-term fiscal targets and multi-year budgeting plan for spending and taxes, even though such plans have to be reconsidered in the event of unforeseeable circumstances (2011 *OECD Economic Survey of Japan*). OECD experience suggests that a mutually reinforcing framework of budget procedures, fiscal rules and independent fiscal oversight can help countries achieve their fiscal objectives.

Improving the electoral system

It is not just institutions that can influence economic policy but also electoral systems. The re-apportionment of electoral districts has lagged behind the population migration from rural to urban areas. By the 1980s, as many as five times the votes were needed to elect a representative from an urban district compared with those needed in a rural district, which the Supreme Court ruled violated the constitutional principle of one person-one vote. Nevertheless, the disparity was still two urban votes to one rural vote in the 2009 House of Representatives election and more than five to one in the 2010 House of Councillors election (Table 2.9). The 2009 election was subsequently found to be unconstitutional by the Supreme Court, a ruling that did not invalidate the election, but required the Diet to reapportion the districts. However, no districting changes were made for the December 2012 election, leading to the filing of lawsuits challenging its legitimacy.

The disparities in the electoral system have important implications for economic policy. In particular, the extra weight given to rural districts provides support for agricultural policies that boost food prices far above world levels and impose heavy burdens on consumers and taxpayers (Chapter 1). In addition, it gives an unfairly large advantage to older voters, who already benefit from large inter-generational transfers in their favour.

Table 2.9. **National Diet electoral districts with the highest and lowest voting weight**

In thousands

House of Representatives				House of Councillors			
Lowest vote weight		Highest vote weight		Lowest vote weight		Highest vote weight	
District	Registered voters per member elected	District	Registered voters per member elected	District	Registered voters per member elected	District	Registered voters per member elected
Chiba 4	496.14	Kochi 3	207.69	Kanagawa	1 225.48	Tottori	242.48
Kanagawa 10	493.15	Nagasaki 3	211.29	Osaka	1 187.45	Shimane	295.74
Tokyo 6	484.28	Fukui 3	213.56	Hokkaido	1 149.66	Kochi	318.97
Hokkaido 1	482.51	Tokushima 1	214.73	Hyogo	1 139.23	Fukui	326.76
Tokyo 3	480.31	Kochi 1	214.74	Tokyo	1 073.39	Tokushima	328.29
Hyogo 6	475.92	Kochi 2	215.51	Fukuoka	1 029.80	Saga	344.24
Tokyo 1	474.62	Tokushima 3	215.52	Saitama	977.47	Yamanashi	351.36
Tokyo 19	467.80	Miyagi 5	216.93	Aichi	977.29	Fukushima	412.05
Tokyo 23	464.70	Fukui 2	218.40	Chiba	847.03	Kagawa	414.63
Tokyo 22	463.70	Yamanashi 1	219.21	Tochigi	816.88	Gifu	422.24

Source: Ministry of Internal Affairs and Communications.

Ensuring that fiscal consolidation does not exacerbate inequality and poverty

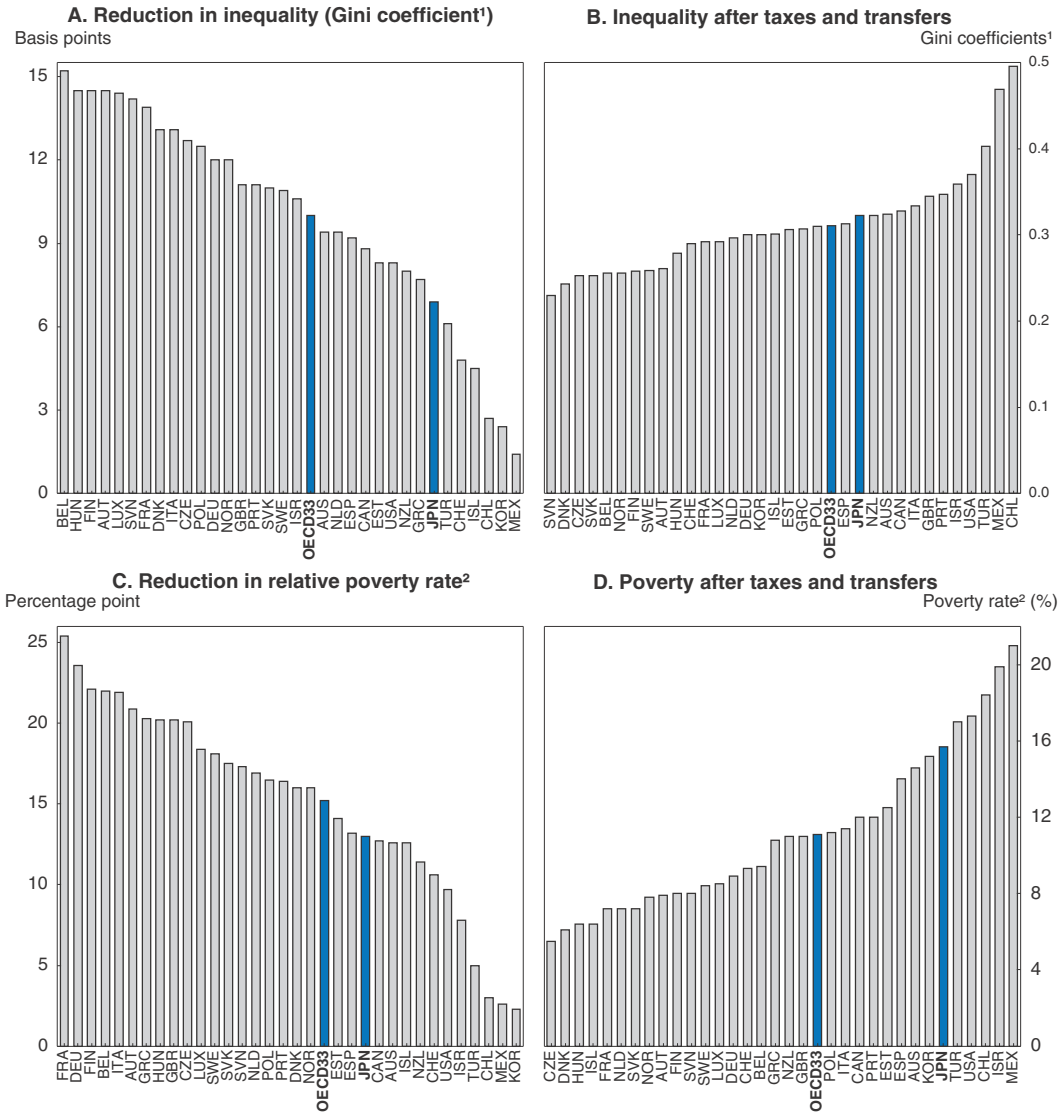
Rising income inequality and relative poverty

OECD studies have found that large and rapid fiscal consolidations can reduce the income share of the two lowest quintiles of the income distribution, thereby increasing income inequality (Rawdanowicz *et al.*, 2013). Compared to other OECD countries, tax and social spending policies in Japan have relatively little impact on income inequality and relative poverty, even though their impact has strengthened in recent years. Indeed, they reduced the Gini coefficient by seven basis points (cutting the coefficient from 0.39 to 0.32) in the late 2000s (Figure 2.11, Panel A). Likewise, the impact of the tax and benefit systems on relative poverty, which was the sixth highest in the OECD, was relatively small (Panel C). This reflects the fact that the Japanese tax and benefit system primarily redistributes income over the life-cycle rather than across individuals.

The small impact on the income distribution among the working-age population in Japan reflects a number of factors. *First*, while public social spending matches the OECD average (22% of GDP), it is concentrated in pension and health-care programmes (19%) that primarily benefit the elderly, compared to the OECD average of 15% (Figure 2.7). On the other hand, social spending for the working-age population is limited to 2% of GDP, compared to the OECD average of 5%. Given the small amount of support to the working-age population and the large transfers to the elderly, Japan is the only OECD country where the poverty rate among all working households and households with children is higher after taking account of benefits and taxes than before. *Second*, the distribution of benefits between different income quintiles in Japan is the least progressive in the OECD. The poorest 20% of households headed by a working-age person received cash benefits amounting to only 38% of their earned market income, well below the OECD average of 72% (Figure 2.12). *Third*, despite low transfers, the bottom quintile bears a significant tax and social security burden, as they contribute to the income transfers to the elderly. One study found that social security contributions have a regressive nature in Japan, given that the

Figure 2.11. **Taxes and transfers have relatively little impact on income inequality and poverty in Japan**

Working-age population in the late 2000s



1. The Gini coefficient ranges from 0 (perfect equality) to 1 (perfect inequality). Market incomes are all gross incomes from earnings, savings and capital. Disposable income adds transfers and subtracts taxes.
2. The relative poverty rate is defined as the share of population that lives on less than one-half of the median income.

Source: OECD (2011a).

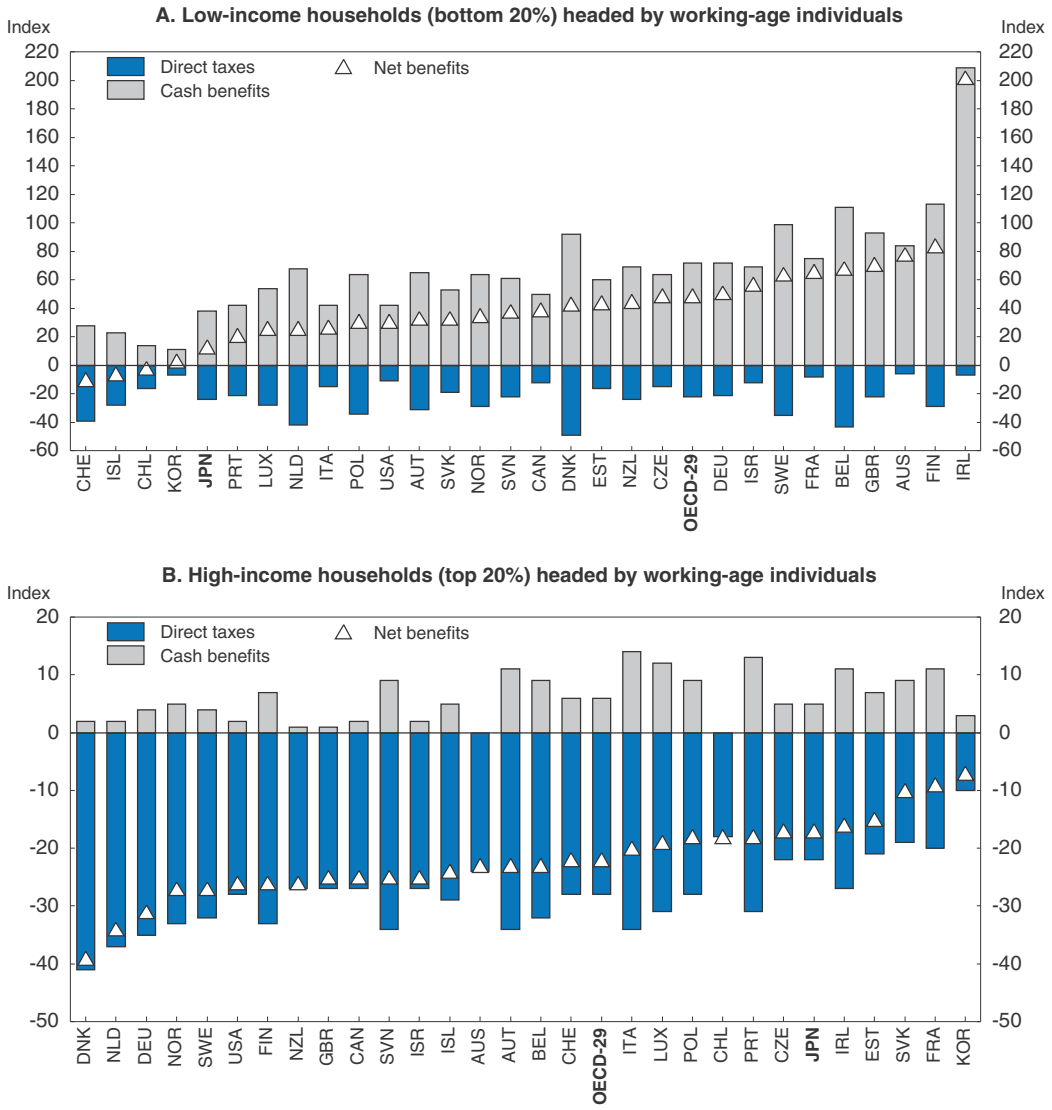
StatLink http://dx.doi.org/10.1787/888932798278

self-employed and economically non-active pay flat-rate contributions to the National Pension and National Health Insurance (Oshio, 2010).

Combining the impact of redistribution through transfers and taxes, the net income transfer to the lowest-income quintile in Japan is 13% of market income, the fifth lowest in the OECD and a quarter of the OECD average of 49% (Figure 2.12). Similarly, for the top income quintile, net taxes paid were low at 17% in Japan, compared to an OECD average of 22% (Panel B). In sum, Japan's redistribution system is less targeted on the working-age poor and less progressive than in other OECD countries.

Figure 2.12. **Assistance to low-income households is low in Japan**

In the late 2000s[1]



1. Countries are ranked by the impact of the redistribution system on household income, *i.e.*, by net benefits (benefits minus taxes). For the three countries with negative net benefits in Panel A, taxes exceed benefits.

Source: OECD Database on Household Income Distribution and Poverty (www.oecd.org/els/social/inequality).

StatLink http://dx.doi.org/10.1787/888932798297

The large increase in public social spending in Japan, therefore, has not enabled it to avoid the upward trend in inequality in the OECD area since the mid-1980s. On a disposable income basis, Japan's Gini coefficient for its working-age population increased from 0.30 in the mid-1980s to 0.32 in the late 2000s, pushing it above the OECD average, which also increased during that period (Figure 2.11, Panel B). Rising inequality reflects falling income at the lower end of the income distribution: Japan is one of only two OECD countries, along with Israel, where real household income of the lowest decile has fallen since the mid-1980s in absolute terms.

The increase in income inequality was accompanied by a rise in the relative poverty rate, defined as the share of the population that lives on less than half of the median

income. Based on disposable income, the poverty rate among the working-age population increased from 11.9% in the mid-1990s to 15.7% in late 2000s, the sixth highest in the OECD and well above the average of 11.1% (Figure 2.11, Panel D).[7] In particular, the poverty rate for households with children and one working adult is the highest in the OECD at almost 60%. Widespread poverty among single parents in Japan results in a high incidence of poverty among children. Given the high cost of schooling and private tutoring institutes, children in poor families are at risk of receiving an inadequate education, thus perpetuating poverty across generations.

Widening income inequality in OECD countries reflects a number of structural changes, notably the increase in wage dispersion. This has been a key factor in Japan due to the rising share of non-regular workers, which has doubled since 1990 to almost 34% of total employment in 2012. Given that non-regular workers only earn 60% as much per hour as regular workers, this increased wage inequality (see the labour market chapter in the 2011 *OECD Economic Survey of Japan*). Not surprisingly, the government's 2012 survey on well-being found that the happiness level reported by non-regular workers is below that of regular workers and the self-employed (ESRI, 2012). Moreover, changes in household structure – notably the increase in single-headed households – may have also played a role in increasing inequality, although less so than changes related to the labour market (OECD, 2011a).

Well-targeted increases in social spending are needed to address rising income inequality

There is a growing consensus that economic performance should not be judged solely on the basis of income growth, but should also take into account income distribution, as well as other factors (Stiglitz *et al.*, 2009). The large-scale fiscal consolidation underway in many OECD countries thus raises concerns about the social impact of changing tax and benefit systems. In some cases, the potential trade-offs between deficit reduction and income redistribution can be mitigated by re-designing tax and benefit systems, although other systemic reforms may be necessary in some cases (Joumard and Pisu, 2012).

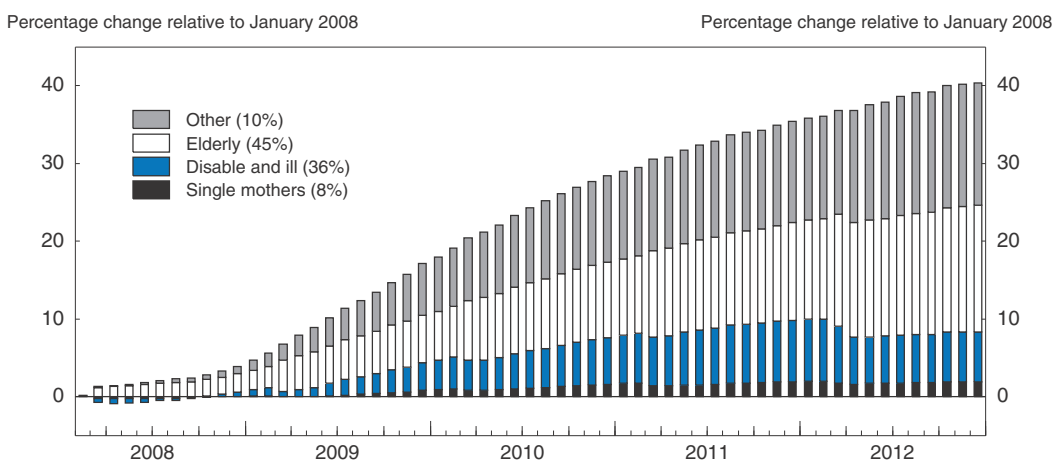
Cash transfers account for three-quarters of the reduction in income disparities in the OECD area, compared to only a quarter for taxes (Joumard and Pisu, 2012). Well-targeted social spending is thus essential to promote inclusive growth. Given its limited fiscal space, Japan needs to carefully design spending to achieve its objectives and, in particular, avoid wasteful spending and weakening work incentives. The government plans to strengthen redistribution through the comprehensive reform of social security and tax, in part by reducing social security contributions for low-income persons (Table 2.4). In addition, as noted above, the progressivity of the tax system is to be strengthened, in part by raising the top rates of the personal income tax and the inheritance tax, while reducing the basic deduction for the inheritance tax.

The falling share of the population contributing to the basic pension system raises concerns that the poverty rate among the elderly will rise in the future. Moreover, the minimum contribution period to be eligible for pension benefits was recently reduced from 25 years to 10 years. This would increase the number of recipients by 170 thousand, equivalent to about 40% of the people currently without pension benefits. However, it would not prevent an increase in the number of elderly with small or no pension benefits. The government plans to increase benefits for the low-income elderly. Better policy co-ordination with other social programmes, notably public assistance, is needed. A

guaranteed minimum pension would resolve the problem of the rising number of persons with inadequate pension benefits, while narrowing the intergenerational gap. However, it would require a large increase in taxes. Moreover, shifting to a new system would create transitional problems and uncertainty about how past contributors to the basic pension would be treated under a guaranteed pension system. It is thus important to avoid expensive new programmes, such as a guaranteed minimum pension, given the dire fiscal situation.

Upgrading the safety net, notably the Basic Livelihood Protection Programme (BLPP), which provides cash and a package of in-kind benefits to those living under the absolute poverty line, is another priority. The benefits are relatively generous: for a married couple with two children, they amount to half of the national median income (67% including the housing benefit) (OECD 2012c). The limited impact on poverty is due to the low coverage of the BLPP. In 2012, only 3% of households received BLPP benefits, reflecting strict eligibility requirements, including an asset test and the exclusion of persons who could receive support from family members. Nevertheless, the number of recipients has increased by 40% since 2008, spurred by the rise in unemployment in the wake of the global financial crisis (Figure 2.13). In addition, there has been a marked shift in the composition of recipients since 2008, when single mothers, handicapped or ill persons and the elderly accounted for 90% of recipients. The category "other" – which presumably includes many persons capable of working – has jumped from 10% of total recipients to 18%. With the rising number of recipients, total benefits were set to increase to 3.7 trillion yen (0.8% of GDP) in the initial FY 2012 budget. The government plans to reduce spending on public assistance, while providing job assistance for the poor and needy in FY 2013.

Figure 2.13. **The upward trend in public assistance recipients in Japan**[1]



1. The number in parentheses in the legend of the graph shows the share of each category in the total number of public assistance recipients in January 2008.

Source: Ministry of Health, Labour and Welfare.

StatLink http://dx.doi.org/10.1787/888932798316

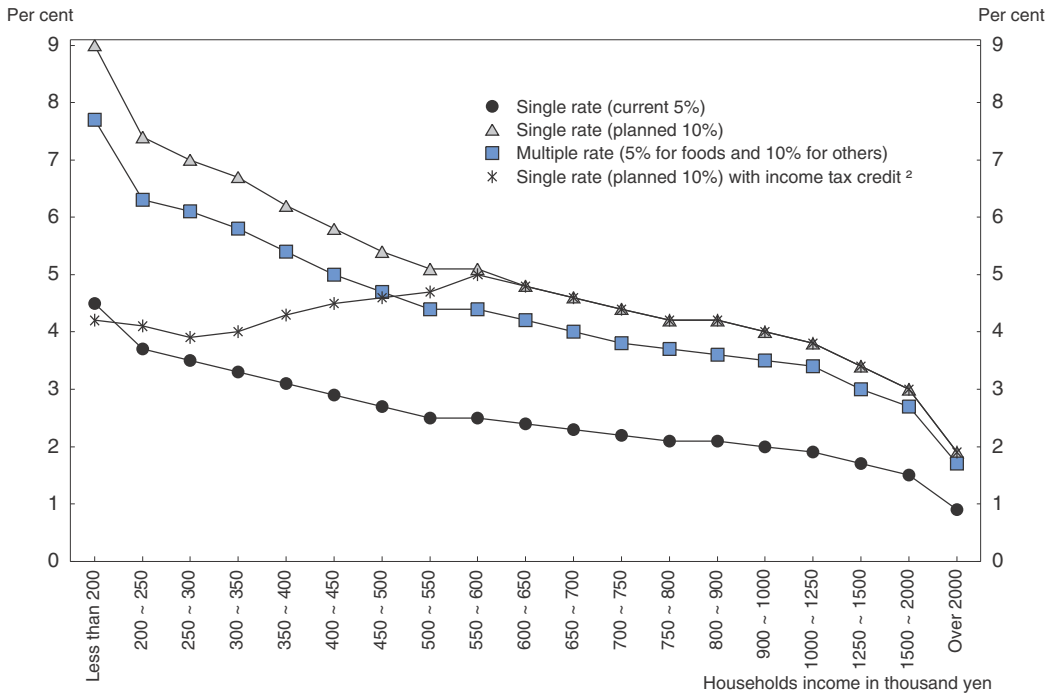
The BLPP needs to adjust to the rising number of welfare recipients capable of working. The "Life Support Strategy" announced in September 2012 aims at addressing poverty in a more comprehensive way. The initiative includes: *i*) strengthening job support for those with weak vocational abilities; *ii*) preventing the perpetuation of poverty across

generations; and *iii*) enhancing incentives to leave public assistance, in part by introducing the "working-income reserve system", which keeps some of the earned income of households receiving public assistance and then refunds it to them when they leave the programme. It is essential to integrate the BLPP with other programmes, notably the "second safety net", which was introduced in 2009 and provides income support primarily to former non-regular workers who are enrolled in training programmes but do not receive unemployment benefits.

The main priority is to introduce an EITC, an in-work benefit that is used in a number of OECD countries. The EITC lowers taxes or provides a refund when the deduction is larger than the tax amount, thereby raising take-home pay at the low end of the income distribution, while strengthening work incentives. Such an approach is likely to be effective in Japan, given its relatively wide earnings distribution, low taxes on labour and low benefits for the non-employed. Indeed, one study showed that an income tax credit would effectively ease the burden of the consumption tax hike for the lowest income decile (Figure 2.14). An EITC could be financed by an additional hike in the consumption tax or other revenues. Such a system would be more successful if accompanied by effective activation measures, such as training, to help the unemployed find jobs that would allow them to participate in the EITC. Finally, the introduction of an EITC would be facilitated by

Figure 2.14. **The regressive nature of the consumption tax and possible policy responses**[1]

Consumption tax payments as a share of annual income by income decile



1. The regressiveness is defined as a higher tax burden for lower-income households.
2. The amount of the income tax credit matches the amount of revenue that would be lost by introducing a 5% rate for food. It assumes that the amount of tax credit is 48 thousand yen, which is proportionally reduced once income exceeds a threshold of 3 million yen.

Source: The Tokyo Foundation (2010).

StatLink http://dx.doi.org/10.1787/888932798335

the introduction of a single identification number for taxpayers and those contributing to social security, a proposal that is currently under discussion, to enhance transparency about income, particularly for the self-employed.

The government is considering measures to ease the effect of the consumption tax hike on low-income persons. While the planned increase to a 10% rate would double the burden on all income classes, tax payments for the lowest decile would rise by 5% of their income, compared to only 1% for the highest decile, thus raising inequality and poverty (Figure 2.14). Such calculations based on annual income data may overstate the regressive impact of consumption taxes since consumption largely depends on lifetime income, which is less variable than annual income. In particular, pensioners with low annual income may consume out of their previous (accumulated) earnings (Joumard and Pisu, 2012). The tax hike legislation requires the introduction of a cash benefit as a temporary measure when the consumption tax rate is raised to 8% in 2014. It also calls for a discussion of other measures, including an EITC and multiple consumption tax rates, to prepare for the hike to 10% in 2015. As noted above, an income tax credit – such as the EITC – would be most effective in limiting the regressiveness for employed persons, while multiple consumption tax rates should be avoided.

Japan should also address the underlying causes of inequality by reforms in the labour market and education system, as discussed in the Assessment and recommendations. A recent OECD study concluded that while technological change and globalisation play at least some role in driving inequality patterns, structural policy can also have an important influence on inequality, in particular through education and labour market policies (Koske *et al.*, 2012). The priorities are to break down labour market dualism, ensure low-income families' access to high-quality early childhood education and care and to reduce reliance on private, after-school tutoring institutions known as *juku* (2011 *OECD Economic Survey of Japan*).

Conclusion

Overcoming Japan's decades-long fiscal deterioration and restoring fiscal sustainability requires a detailed and credible fiscal consolidation plan, including specific revenue increases and measures to control spending, in addition to boosting nominal GDP growth. The major concern on the spending side is the rapid increase in social security outlays in the context of rapid population ageing, making reforms to contain such spending a priority. Much of the consolidation, though, will have to be on the revenue side, mainly through hikes in the consumption tax rate beyond the currently planned 10% in 2015. In view of the severity of Japan's fiscal predicament, a reform of the fiscal framework is needed to help achieve the fiscal targets and bolster credibility, thereby mitigating the risk of a run-up in long-term interest rates. The adverse effects of fiscal consolidation on equity should be addressed by enhancing redistribution through taxes and benefits. Recommendations to achieve fiscal sustainability are summarised in Box 2.5.

Box 2.5. **Summary of recommendations to restore fiscal sustainability**

Develop a new fiscal consolidation plan

- Develop a more detailed and credible fiscal consolidation plan, including spending targets by category and a timetable for tax hikes, to maintain confidence in the fiscal situation and prevent a run-up in interest rates.
- Aim for a sufficiently large primary budget surplus – around 4% of GDP – to stabilise the debt ratio by 2020.

Limit government spending

- Achieve spending cuts in such areas as public investment and the government wage bill to partially offset rising social security outlays.
- Implement approved reconstruction spending before creating new budget plans.
- Continue the screening process to find ways to reduce low-priority and ineffective spending programmes.
- Reform social security to limit spending increases, particularly in the areas of health and long-term care.
- Ensure the sustainability of the public pension programme by accelerating the hike in the retirement age.

Increase government revenue

- Implement the planned doubling of the consumption tax rate in two stages to 10% by 2015.
- Maintain a single rate for the consumption tax to avoid the distortions associated with multiple rates, while introducing measures, notably an earned income tax credit, to address the regressive nature of the tax.
- Rely primarily on the consumption tax and other indirect taxes, such as environment-related levies, as well as the broadening of income tax bases, to boost government revenue.

Improve the fiscal policy framework

- Ensure that the Council on Economic and Fiscal Policy functions as an effective impartial body to monitor and evaluate progress in fiscal consolidation.
- Reform the fiscal policy framework through a multi-year budgeting plan and a stronger legal basis for fiscal targets.

Take measures to address inequality

- Enhance redistribution through well-targeted taxes and benefits to increase the share of social spending received by low-income households.
- Introduce an earned income tax credit, initially for wage earners, and then expand it to the self-employed as transparency about their income is enhanced, in part by introducing a tax identification number.
- Upgrade public assistance by ensuring that those capable of working are enrolled in training, while promoting incentives to leave assistance and co-ordinating such programmes with the existing safety net.
- Address the underlying causes of inequality through reforms in the education system and the labour market.

Notes

1. A one percentage-point increase in the yields on all maturities would be largely offset by unrealised gains on securities and bond holdings, according to the Bank of Japan.
2. The screening process by the Government Revitalisation Unit (GRU) helped to limit spending. In 2009, the GRU screened 449 government programmes, leading to 1 trillion yen in spending cuts (1.4% of central government primary spending). In addition, it generated 1 trillion yen in non-tax revenue by requiring incorporated administrative agencies and public service corporations to refund surplus funds. The second round in the spring of 2010 examined 117 public service corporations and 233 programmes, followed by a third round that examined all 51 special accounts. The second and third rounds cut spending by another 0.4 trillion yen and secured another 1.4 trillion yen in non-tax revenue. In addition, the number of special accounts was reduced. The fourth round in 2011 reviewed ten policy areas.
3. In addition to three reconstruction packages, the government implemented a fourth supplementary budget of around ½ per cent of GDP in December 2011, in part to cope with the impact of yen appreciation.
4. The total for reconstruction (17 trillion yen) is obtained by excluding non-reconstruction spending included in the three packages and the FY 2012 budget, such as the cost of the government paying back its contribution to the basic pension fund (2.5 trillion yen), responding to the impact of yen appreciation (2 trillion yen) and the cost of recovering from the damage caused by a typhoon (0.3 trillion yen). The 17 trillion yen does not include some reconstruction-related expenditures, notably decontamination spending, which will be reimbursed by TEPCO.
5. As noted in Table 2.4, 800 billion yen will be used to finance the increase in social security benefits and thus will not reduce the deficit.
6. Based on the VAT revenue ratio, which is defined as VAT revenues as a share of consumption divided by the standard rate, expressed as a percentage. Given that the VAT in most countries excludes the wages and salaries of the public sector, Japan's relatively small public sector increases the ratio.
7. Given that income distribution and poverty statistics for the elderly are affected by changes in living arrangements and dis-saving, this section focuses on the working-age population.

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