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**Working Paper**

## Japan's post-triple-disaster growth strategy

ADB Working Paper, No. 376

**Provided in Cooperation with:**

Asian Development Bank Institute (ADBI), Tokyo

*Suggested Citation:* Kawai, Masahiro; Morgan, Peter J. (2012) : Japan's post-triple-disaster growth strategy, ADB Working Paper, No. 376, Asian Development Bank Institute (ADBI), Tokyo

This Version is available at:

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## **ADB Working Paper Series**

### **Japan's Post-Triple-Disaster Growth Strategy**

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Masahiro Kawai  
and Peter J. Morgan

No. 376  
August 2012

**Asian Development Bank Institute**

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Suggested citation:

Kawai, M. and P. J. Morgan. 2012. Japan's Post-Triple-Disaster Growth Strategy. ADBI Working Paper 376. Tokyo: Asian Development Bank Institute. Available: <http://www.adbi.org/working-paper/2012/08/22/5218.japan.post.triple.disaster.growth.strategy/>

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**Abstract**

The Great East Japan Earthquake on 11 March 2011 was the biggest earthquake recorded in Japanese seismic history, and the fourth largest recorded in the world. The scope of the disaster far exceeded that of the Hanshin Earthquake of 1995. The repercussions of this disaster spread far beyond the geographical areas directly affected. For example, Electric power supply capacity in the Kanto area, which accounts for about 40% of Japanese gross domestic product (GDP), fell at one stage by about 40% from the normal peak—a severe constraint on economic activity, and the supply of nuclear-generated electric power has largely been cut off since then. Production supply chains were significantly disrupted, not only in Japan, but all over Asia.

The disaster also highlighted Japan's many other structural challenges besides reconstruction needs, including persistently low growth, population aging and low fertility, burgeoning government debt, declining international competitiveness, and uncertain energy supplies. Moreover, the global financial crisis and the ongoing euro area financial crisis suggest that Japan needs to create its own growth momentum without relying excessively on markets in the United States (US) and Europe. This paper discusses the scope of these challenges and sets out a long-term strategy for overcoming them and putting the Japanese economy on a stable growth path. Domestically, key areas that need to be focused on are supply-side reforms, including support for R&D in high-technology, knowledge-intensive, green growth areas; deregulation to promote growth in service sectors and agriculture; corporate tax reduction; and increased energy security; as well as fiscal and social security reforms to put the public debt to GDP ratio on a sustainable basis. Externally, Japan needs to link its economy firmly with the strong growth track of emerging Asia and its rapidly growing middle class. It needs to promote greater economic links with the rest of Asia, including moves toward an East Asian FTA and support for the TPP that could eventually develop into a trans-Pacific FTAAP.

**JEL Classification:** E58, E62, F13, H2, H53, J13, L4, O25

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# 1. INTRODUCTION

The Great East Japan Earthquake on 11 March 2011 was the biggest earthquake recorded in Japanese seismic history, and the fourth largest recorded in the world. The ensuing tsunami was even more devastating, as much of the coastline of three prefectures—Fukushima, Iwate, and Miyagi—was hit by a wall of seawater over 8 meters high, and in some places much higher. The tsunami disabled the backup electricity generating systems at Tokyo Electric Power Company's (TEPCO's) Fukushima Daiichi Nuclear Power Plant, leading to the second most severe nuclear disaster in the world.

The repercussions of this disaster spread far beyond the geographical areas directly affected. Electric power supply capacity in the Kanto area served by TEPCO, which accounts for about 40% of Japanese gross domestic product (GDP), fell at one stage by about 40% from the normal peak—a severe constraint on economic activity. Global and Asian industrial supply chains, especially in the auto and electronics sectors, were hit hard by parts shortages emerging from damage to factories, disruption to transport infrastructure, and electricity shortages. The nuclear emergency disrupted production and transportation, and directly threatened residents' health and the overall environment. Finally, consumer and business sentiment throughout Japan was adversely affected, further depressing consumption and investment. The bill for the cleanup and for compensation of evacuees and affected farmers and fishermen is huge, coming on top of Japan's already very high government debt level.

The disaster also highlighted Japan's many other structural challenges besides reconstruction needs, including persistently low growth, population aging and low fertility, burgeoning government debt, declining international competitiveness, and uncertain energy supplies. Moreover, the global financial crisis and the ongoing euro area financial crisis suggest that Japan needs to create its own growth momentum without relying excessively on markets in the United States (US) and Europe. This paper discusses the scope of these challenges and sets out a long-term strategy for overcoming them and putting the Japanese economy on a stable growth path.

The paper is organized as follows. Section 2 describes the direct impacts of the triple disaster, i.e., earthquake, tsunami, and nuclear disaster; its broader impacts on the Japanese economy; and the near-term recovery process. Section 3 identifies other long-term structural challenges to economic growth. Section 4 lays out policy directions for Japan's long-term growth strategy. Section 5 concludes the paper.

## 2. DISASTER IMPACTS AND JAPAN'S ECONOMIC RECOVERY

This section briefly describes the direct impacts of the triple disaster, the broader indirect economic consequences, and the process of economic downturn and recovery.

### 2.1 Direct Impacts of the Earthquake and Tsunami

The Great East Japan Earthquake struck at 14:46 on 11 March 2011, registering magnitude 9.0 on the Richter scale—the largest recorded in Japan and the fourth largest recorded in the world. The epicenter was 72 kilometers (km) east of the coast of Miyagi prefecture, at a depth of 24 km. Intensity readings of 7 (the highest on the Japanese scale) were recorded in Miyagi prefecture (Government of Japan, Prime Minister's Office 2011). However, the main damage

came from the tsunami that struck shortly thereafter, hitting the entire coastline of three prefectures—Fukushima, Iwate, and Miyagi—with a wall of water at least 8 meters high, and in some cases much higher. For example, in the city of Miyako in Iwate prefecture, the tsunami is estimated to have towered an astonishing 37.9 meters high, a record high for Japan (Kyodo News 2011). The waves penetrated as far as 10 km inland in some locations. The first earthquake was followed by a large number of aftershocks, some of them with significant magnitudes.

Table 1 shows some of the direct impacts. The combined total of missing and dead was close to 19,000—over three times the number lost in the Hanshin Earthquake of 1995. The damage to buildings was significantly more serious than that of the Hanshin Earthquake, mainly reflecting the destructive force of the tsunami. Damage to major infrastructure trunk lines such as the high-speed Shinkansen train tracks or high-speed expressways was limited, but local lines and roads received more damage, and ports were significantly hit. Even those railway lines not severely damaged saw frequent shutdowns as a result of continuing aftershocks and the need for renewed safety inspections, further disrupting transportation and production activity.

**Table 1: Comparison of Impacts of the Triple Disaster and Hanshin Earthquake**

Item	Great East Japan	Hanshin
Deaths/missing	15,868/2,848	6,434/3
Damage in ¥ trillion (% of GDP)	16.9 (3.5%)	10.2 (2.0%)
Gross prefectural product in affected areas as a ratio of gross national product	4.0% (FY2007) for Fukushima, Iwate, Miyagi prefectures	4.0% (FY1994) for Hyogo prefecture
Value of manufactured goods shipped in affected areas as a ratio of national value	3.6% (FY2008) for Iwate, Fukushima, Miyagi prefectures	4.8% (FY1993) for Hyogo prefecture
Number buildings destroyed:		
- Totally destroyed	129,316	104,906
- Half destroyed	263,845	144,274
- Partly damaged	725,760	390,506
Transport infrastructure destroyed		
- Roads	4,200	
- Bridges	116	
- Railway lines	29	
- Airports	1	
- Fishing ports	263 catastrophically damaged; 62 damaged	17
Fishing boats destroyed	20,239 catastrophically damaged; 2,506 damaged	40
Farmland damaged (hectares)	23,600	214
Payment of private casualty insurance (¥ billion)	1,200	78

GDP = gross domestic product.

Sources: Government of Japan, Prime Minister's Office (2011); National Police Agency (2012); Government of Japan, Cabinet Office (2011); Government of Japan, Fire and Disaster Management Agency (2006).

Table 2 summarizes the economic size of the impacted areas. The three heaviest hit prefectures—Fukushima, Iwate, and Miyagi—account for 4.0% of Japanese GDP, 4.5% of the population, and 4.6% of total employment. More limited damage was seen in five neighboring

prefectures—Aomori, Chiba, Ibaragi, Tochigi, and Yamagata—which account for 9.3% of GDP and similar shares of population and employment. The government has estimated the total value of the destruction to property at ¥16.9 trillion, or 3%–5% of GDP, though this does not include the damage made by nuclear radiation such as the cost of cleanup, compensation payments for evacuees, and decommissioning of the affected nuclear power plants.

**Table 2: Regional Exposure to Earthquake and Tsunami by Prefecture**

FY2007	Nominal GDP		Population		Employment	
	(¥ trillion)	(% of total)	(million)	(% of total)	(million)	(% of total)
<b>High exposure</b>	<b>20.7</b>	<b>4.0</b>	<b>5.8</b>	<b>4.5</b>	<b>2.9</b>	<b>4.6</b>
Fukushima	7.9	1.5	2.1	1.6	1.0	1.6
Iwate	4.5	0.9	1.4	1.1	0.7	1.2
Miyagi	8.3	1.6	2.3	1.8	1.1	1.8
<b>Moderate exposure</b>	<b>48.3</b>	<b>9.3</b>	<b>13.7</b>	<b>10.7</b>	<b>6.2</b>	<b>9.9</b>
Aomori	4.6	0.9	1.4	1.1	0.7	1.1
Chiba	19.7	3.8	6.1	4.8	2.4	3.9
Ibaragi	11.6	2.2	3.0	2.3	1.4	2.2
Tochigi	8.3	1.6	2.0	1.6	1.0	1.6
Yamagata	4.2	0.8	1.2	0.9	0.6	1.0
<b>Total exposed areas</b>	<b>69.0</b>	<b>13.3</b>	<b>19.5</b>	<b>15.2</b>	<b>9.1</b>	<b>14.4</b>
<b>Total Japan</b>	<b>520.2</b>	<b>100.0</b>	<b>127.8</b>	<b>100.0</b>	<b>62.9</b>	<b>100.0</b>

GDP = gross domestic product.

Note: Numbers may not sum precisely because of rounding.

Sources: Government of Japan, Cabinet Office; authors' estimates.

The earthquake and tsunami also severely affected the electricity generating capacity of TEPCO, which supplies electricity to eight prefectures in the Kanto area, accounting for about 40% of Japanese GDP (Table 3), as a result of the meltdown at its Fukushima Daiichi Nuclear Power Plant and the shutdown of the Fukushima Daini Nuclear Power Plant. This is particularly problematic because TEPCO produces electricity at 50 cycles while the western part of the country produces electricity at 60 cycles. Because there is only limited capacity to convert from 50 cycles to 60 cycles, TEPCO is effectively cut off from the western part of the national electricity grid, which was not physically affected by the triple disaster. In addition, Japan's electricity power market has been geographically segmented by nine monopoly power companies, limiting the transmission of electricity power across different parts of Japan. As a result, TEPCO has had difficulty securing sufficient electricity power from other parts of Japan that are capable of increasing their power supplies.

**Table 3: Economic Size of the Area Served by Tokyo Electric Power Company**

FY2007	Nominal GDP		Population		Employment	
	(¥ trillion)	(% of total)	(million)	(% of total)	(million)	(% of total)
<b>TEPCO Area</b>	<b>209.3</b>	<b>40.2</b>	<b>45.6</b>	<b>35.7</b>	<b>22.7</b>	<b>36.1</b>
Tokyo	92.3	17.7	12.8	10.0	8.3	13.2
Kanagawa	32.0	6.1	8.9	6.9	3.7	5.8
Chiba	19.7	3.8	6.1	4.8	2.4	3.9
Saitama	21.1	4.1	7.1	5.5	2.8	4.4
Gunma	7.5	1.4	2.0	1.6	1.0	1.6
Ibaragi	11.6	2.2	3.0	2.3	1.4	2.2
Tochigi	8.3	1.6	2.0	1.6	1.0	1.6
Shizuoka	16.9	3.3	3.8	3.0	2.1	3.3
<b>Total Japan</b>	<b>520.2</b>	<b>100.0</b>	<b>127.8</b>	<b>100.0</b>	<b>62.9</b>	<b>100.0</b>

GDP = gross domestic product, TEPCO = Tokyo Electric Power Company.

Note: Numbers may not sum precisely because of rounding.

Sources: Government of Japan, Cabinet Office; authors' estimates.

In other words, shortfalls of capacity in the TEPCO area cannot easily be offset by excess generating capacity in the rest of the country. As a result, the Kanto area, which is 10 times larger economically than the area directly hit by the earthquake and tsunami, has been affected by the electricity shortage. This is very different from the case of the Hanshin Earthquake of 1995, where there were few impacts outside of the directly hit areas. Moreover, the subsequent shutdowns of nuclear power plants in the rest of the country for safety reasons have spread the loss of capacity throughout the nation.

The nuclear disaster at the TEPCO Fukushima Daiichi Power Plant exacted both direct and indirect costs. The most direct cost was the shutdown of economic activity in the evacuation zone of 20 km around the plant; the cost of cleaning up of the radiated buildings, land, and other facilities; and the cost of relocating evacuees. In the first few weeks after the disaster, transportation and production were disrupted by the refusal of truck drivers to enter the radiated area out of concern about exposure to radiation and lack of fuel supplies. Concerns over radiation also reduced demand for products from Fukushima prefecture and surrounding areas, including vegetables, meat, dairy products, and fish.

## 2.2 Broader Economic Impacts

Following the triple disaster, the economy was negatively affected by the combination of multiple shocks—physical damages from the initial earthquake and tsunami, negative impacts of nuclear radiation, disruptions to industrial supply chains, loss of power generating capacity, and negative impacts on consumer and business sentiment. We refer to this as the initial or “shock” phase. In the medium term, the economy can be expected to benefit from the unwinding of earlier negative shocks and the start of reconstruction efforts, as bottlenecks on production, transport, and energy are gradually relieved, reconstruction activity begins, and sentiment recovers. We refer to this as the “reconstruction” phase. The impacts on longer-term growth are less clear, but issues such as the viability of nuclear power generation both in Japan and elsewhere and other countries' willingness to source production in Japan, will bear on the outlook.

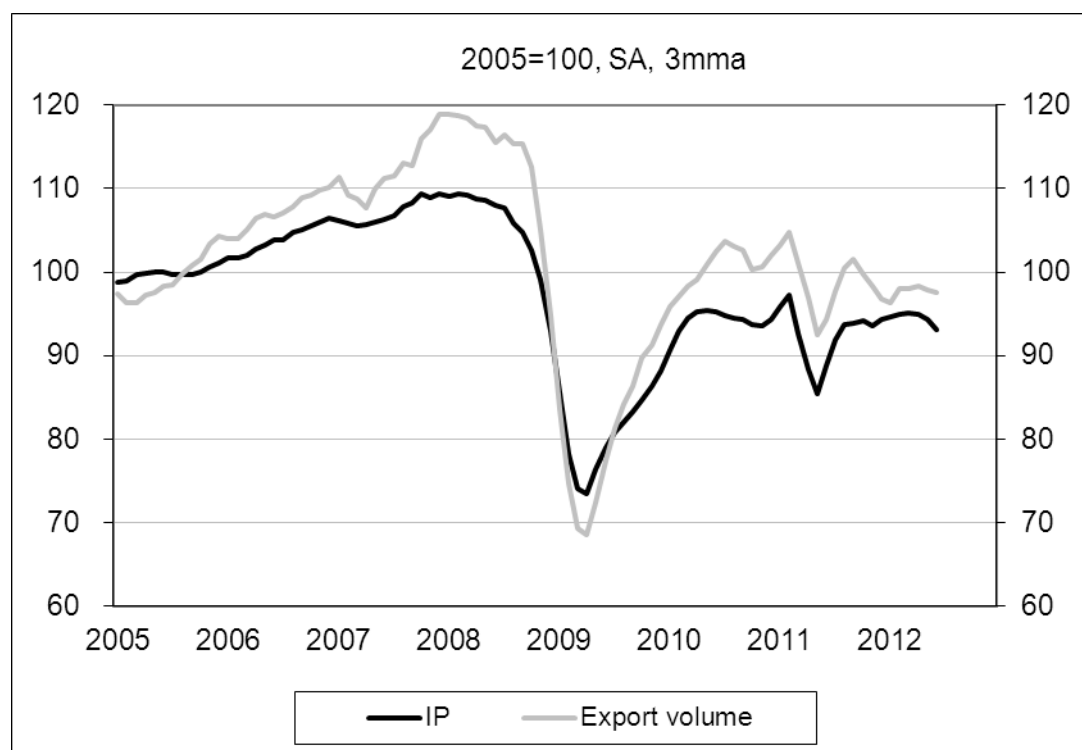
The earthquake and related impacts highlighted how vulnerable the modern manufacturing economy has become to supply disruptions. High levels of specialization of production, especially for high value-added products sourced in Japan, physical dispersal of factories, and lean just-in-time inventory systems mean that the loss of even one critical part or component

can bring the whole production process to a halt. This has been observed most clearly in the automobile, general machinery, and electronics—especially semiconductors, televisions, personal computers, and cell phones—sectors.

Only a few production plants suffered major damage, but many had to halt for inspections and/or repair work. Transport disruptions affected both inputs and outputs of these plants. For example, Toyota Motor Corporation and Honda Motors had to shut down all of their plants in Japan, while Nissan Motors and other auto makers had to halt at least some factories (*Wall Street Journal* 2011a). This affected auto makers worldwide. Shortages ranged from engines at the Nissan plant to small but critical parts such as air flow sensors and LCD screens. Reports indicated that as much as 45% of Toyota's production was affected (*Wall Street Journal* 2011b). There were widespread plant closures overseas as well as production stoppages caused by shortages of key parts.

Overall merchandise exports fell the most in April 2011, down 12.4% year on year and were down 10.5% year on year in volume—the biggest drops since just after the Lehman shock in September 2008 (Government of Japan, Ministry of Finance 2011a), before gradually recovering thereafter (Figure 1).<sup>1</sup> The declines were led by autos, down a stunning 69.7% year on year, and industrial machinery, down 18.6% year on year, showing the vulnerability of the supply chain in those sectors. The declines in electrical machinery were somewhat less.

**Figure 1: Japan's Export and Industrial Production Growth**



SA = seasonally adjusted; 3mma = three-month moving average; IP = industrial production.

Source: CEIC Data, <http://www.ceicdata.com/index.html> (accessed 6 August 2012).

<sup>1</sup> The renewed decline of exports and production in late 2011 mainly reflected the disruptive impacts of the flood in Thailand.

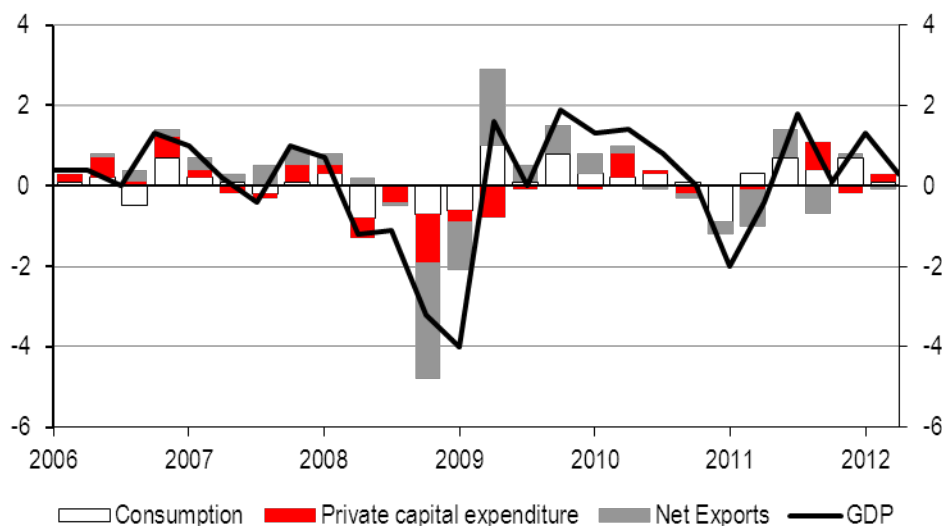
Supply chain impacts quickly spread to other countries because of their dependence on Japanese suppliers for critical parts and components. In the automobile sector, these included gears, LCD screens, and sensors of various kinds—even various paint colors. In the electronics sector, Japanese producers have high global market shares in a number of critical segments: 30% of global flash memory, 15% of D-RAM chips, 10% of global technology hardware, and 30% of lithium-ion battery cells.

These supply chain constraints gradually eased as Japanese suppliers adjusted their production lines, both in Japan and abroad, and foreign competitors expanded production where they were able to do so.

As demonstrated in Figure 1, there is a close correlation between growth of Japanese exports and industrial production. Essentially, a 10 percentage point drop in exports resulted in a similar drop in overall industrial production.

Looking at the contribution to quarter-on-quarter growth of real GDP by major demand items (Figure 2), it is clear that the main source of the fall of real GDP in the first quarter was a decline in domestic demand. However, in the subsequent quarters in 2011, changes in net exports were the main factor driving the growth of GDP. Following the large decline of exports in the second quarter, they rebounded sharply in the third quarter as industrial supply chains recovered, only to fall somewhat again in the fourth quarter because of the floods in Thailand. GDP growth followed this pattern. Somewhat surprisingly, public capital investment fell in both the third and fourth quarters of 2011, possibly reflecting delays in the implementation of reconstruction efforts although emergency public support for affected people and rehabilitation support were provided. Shortages of electric power and other inputs presumably constrained growth in the second half of 2011, although it is difficult to estimate how much.

**Figure 2: Contribution to Real Gross Domestic Product Growth by Demand Item**  
(quarter-on-quarter seasonally adjusted, percentage points)



GDP = gross domestic product.

Source: Government of Japan, Cabinet Office

<http://www.esri.cao.go.jp/en/sna/data/sokuhou/files/2012/qe122/gdemenua.html> (accessed 2 April 2012).

## 2.3 Risks to the Recovery

The positive impact of reconstruction investment spending, which will support economic recovery, will be visible in 2012. However, Japan faces several risks to sustained economic recovery. These include uncertain global economic conditions, the persistently strong yen, shortage of electricity power supply, and lack of implementation of an effective growth strategy.

The biggest risk to Japan's continued recovery is the fragile global growth environment. US economic growth indicators have improved since March 2010, especially the increase in employment, but the recovery remains fragile because of continued high unemployment rates, weak housing prices, and the overhang of household debt. The outlook for the European economy is weak, as a result of the continued euro area sovereign debt and banking crisis. Although the European Central Bank's €1 trillion injection of liquidity, through long-term repo financing operations, has helped to stabilize the banking sector and sovereign debt markets at least in the short run, many of the fundamental problems are still unresolved, and the International Monetary Fund (IMF) forecasts that the euro area as a whole will see negative growth in 2012 (IMF 2012b).

The second risk is the high yen, which can have a significant negative impact on the manufacturing sector. On 16 March 2011, the yen moved sharply higher against the US dollar, hitting an intra-day high of ¥76.3. This presumably reflected the market expectation that Japanese insurance companies would have to repatriate funds from abroad to make payments to insurance beneficiaries by the end of the fiscal year (ending on 31 March) and that some Japanese companies must raise yen funds in anticipation of higher expenditure requirements stemming from the earthquake.

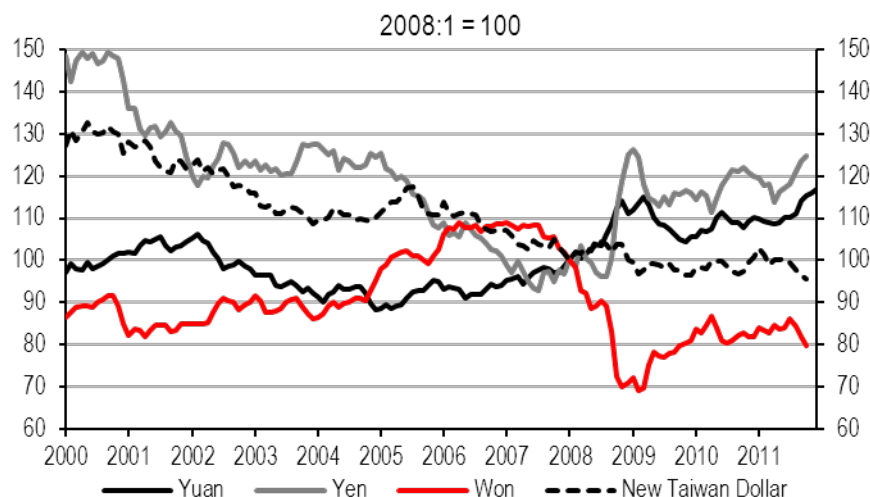
In view of the threat that an excessively strong yen would pose to the Japanese economy in its depressed condition, the governments of Japan and other G7 countries<sup>2</sup> carried out joint foreign exchange intervention to sell the yen on 19 March 2011. The total intervention amount was reported to be a relatively modest ¥692 billion (Government of Japan, Ministry of Finance 2011b). Subsequently, the yen–US dollar rate stabilized in the range of ¥80–¥85 against the US dollar, but rose to less than ¥80 in July 2011, eventually reaching ¥76 in late October 2011. To offset this, the Bank of Japan intervened on a massive scale, with total amounts of ¥4.5 trillion in August and ¥9.1 trillion in October–November 2011, although this time unilaterally without involving other G7 countries.

The yen has risen more strongly in real effective terms since January 2008 than any of its competitor currencies (Figure 3), showing that it has borne a disproportionate amount of appreciation pressure from the financial crisis and recession in the US and Europe. This also contributed to weak export growth throughout 2011.

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<sup>2</sup> G7 countries include the US, Japan, Germany, UK, France, Italy, and Canada.

**Figure 3: Real Effective Exchange Rate Indices of Yen and Major Asian Currencies**



Source: CEIC Database, <http://www.ceicdata.com/index.html> (accessed 1 December 2011).

The third risk is the shortage of electricity power supply. Even when reconstruction investment begins and reconstruction-related production activity—in such sectors as steel, cement, and other materials—expands, the shortage of electricity power supply could prevent a normal economic recovery. In the spring of 2012, all 50 nuclear power plants in Japan were shut down following regular maintenance, posing business concerns that power shortages could damage overall economic activity. Although two nuclear power plants resumed operation in the summer, it may be difficult to restart most other nuclear power plants because of local demands for adequate stress testing and greater safety.

Because of the inability to use nuclear power plants, power generating companies have been relying on traditional thermal power generation by burning petroleum and liquefied natural gas (LNG). As a result, they have been able to secure adequate electricity power supply, though at a lower level than before the triple disaster. However, almost all petroleum and LNG is imported at high prices, leading to the emergence of rising trade deficits and rising electricity prices for consumers.<sup>3</sup>

The fourth risk is the lack of implementation of an effective growth strategy. Even if reconstruction investment supports economic recovery, it will have to phase out once disaster reconstruction ends. Without autonomous private sector driven growth, supported by an effective growth strategy, the phasing out of reconstruction demand can cause economic contraction. Many growth strategies have put in place by the past governments, but none of them have been implemented effectively.

<sup>3</sup> Japan's trade balance, which recorded a surplus of ¥6.6 trillion in 2010, turned to a deficit of ¥2.6 trillion in 2011. Of the difference between the two, ¥9.2 trillion, a net import increase of mineral fuels accounted for ¥4.3 trillion (¥2.0 trillion for crude oil, ¥1.3 trillion for LNG, ¥0.7 trillion for petroleum products, and ¥0.3 trillion for coal); a net export decline of transport machinery and electric machinery accounted for ¥2.2 trillion; and other changes accounted for ¥2.7 trillion.

### 3. JAPAN'S STRUCTURAL CHALLENGES

Japan faces numerous long-term structural challenges to achieving sustainable economic growth, including:

- persistently low economic growth;
- demographic pressure through population aging and low fertility;
- mounting public debt;
- lack of competitiveness in certain sectors such as the social sector and agriculture; and
- lack of stable, low-cost supply of electricity power.

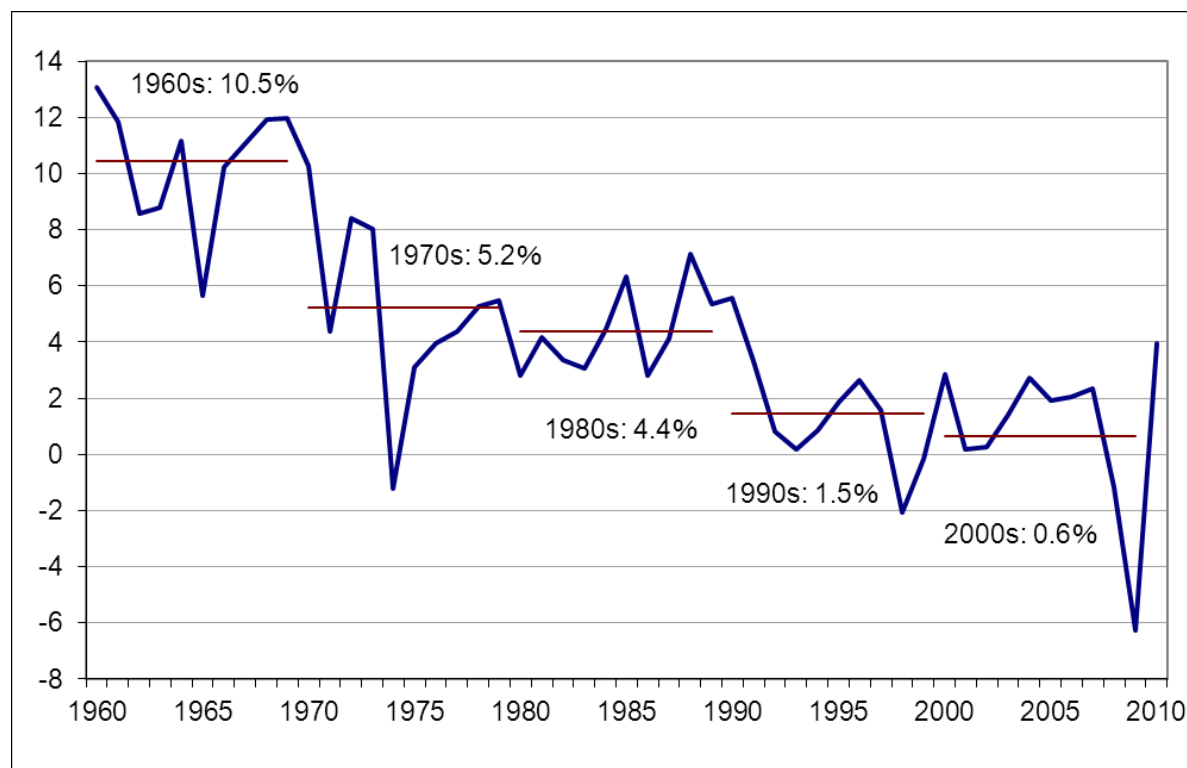
#### 3.1 Persistently Low Growth of Gross Domestic Product

Japan's trend growth rate of real GDP slowed dramatically from 10.5% in the 1960s to only 0.6% during 2000–2009 (Figure 4). This partly reflects the slowdown of labor force growth owing to the aging of society, but also slow growth of labor productivity that cannot offset the decline of the labor force. According to the Organisation for Economic Co-operation and Development (OECD 2012), Japan's per capita GDP (at 2009 purchasing power parity) matched the average of the top half of OECD countries in 1990, but it has fallen behind since the collapse of the bubble economy. By 2010, its per capita GDP was 15% below the average of the top half of the OECD countries.<sup>4</sup> Despite the gradual increase in labor productivity—a 0.7% increase per year during 2000–2009—it has been too small, relative to other OECD countries, to offset the decline in labor supply (Figure 5).

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<sup>4</sup> Japan's per capita GDP was 5th among OECD member countries during 1991–1993 but declined to 18th in 2004, 2006, 2009, and 2011.

**Figure 4: Japan's Long-Term Real Gross Domestic Product Growth Decline**  
(% growth)

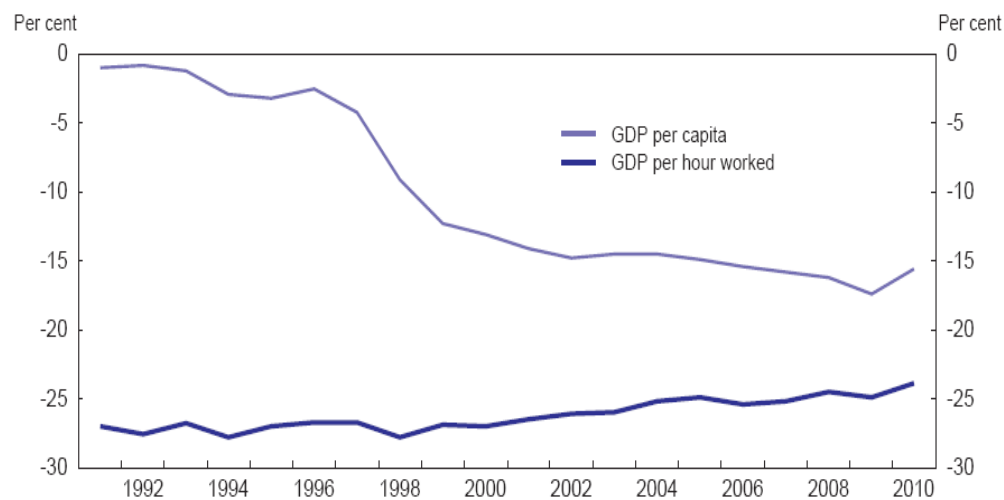


GDP = gross domestic product.

Source: Government of Japan, Cabinet

Office [http://www.esri.cao.go.jp/jp/sna/data/data\\_list/sokuhou/files/2012/qe122/gdemenuja.html](http://www.esri.cao.go.jp/jp/sna/data/data_list/sokuhou/files/2012/qe122/gdemenuja.html) (accessed 10 August 2012).

**Figure 5: Japan's Per Capita Gross Domestic Product Gap and Labor Productivity**



GDP = gross domestic product.

Note: Japan's per capita GDP gap is with respect to the average of the highest 17 Organisation for Economic Co-operation and Development (OECD) countries. Labor productivity is measured by GDP per hour worked.

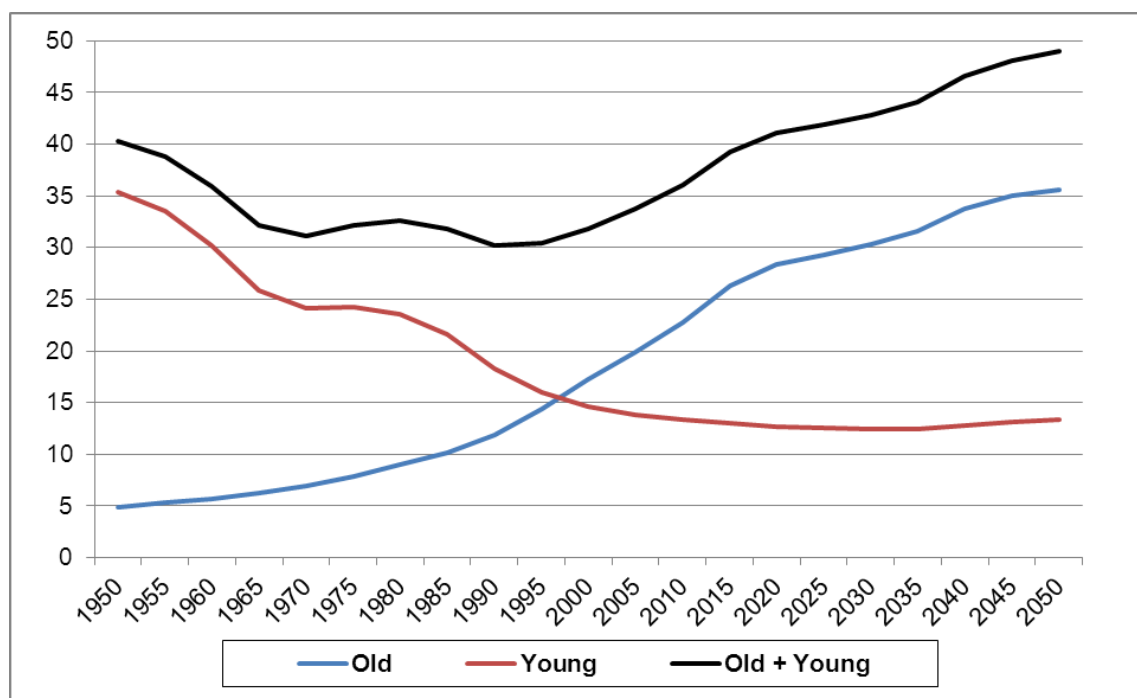
Source: OECD (2010).

This low economic growth has been associated with a continued large output gap and debilitating price deflation. The OECD estimates that Japan in 2011 experienced an output gap of 2.2% of GDP, although this was somewhat smaller than the average for OECD countries. As a result of continuing price deflation, Japan's nominal GDP fell at an average rate of 0.7% per year over the past decade (2002-2011), bringing it to the lowest level since 1991. As will be described below, this weakness of nominal GDP compounds the difficulties of paying down Japan's huge government debt to sustainable levels.

### 3.2 Demographic Pressure and Low Fertility

Japan's population has shown the most advanced aging of any major country. The share of old persons (those age 65 and over) reached 24% of the total population in 2011, and is expected to climb steadily to 38% by 2040 (Figure 6). At the same time, the young population will shrink to 11% of the total, severely undermining the source of the future labor force and income tax revenues.

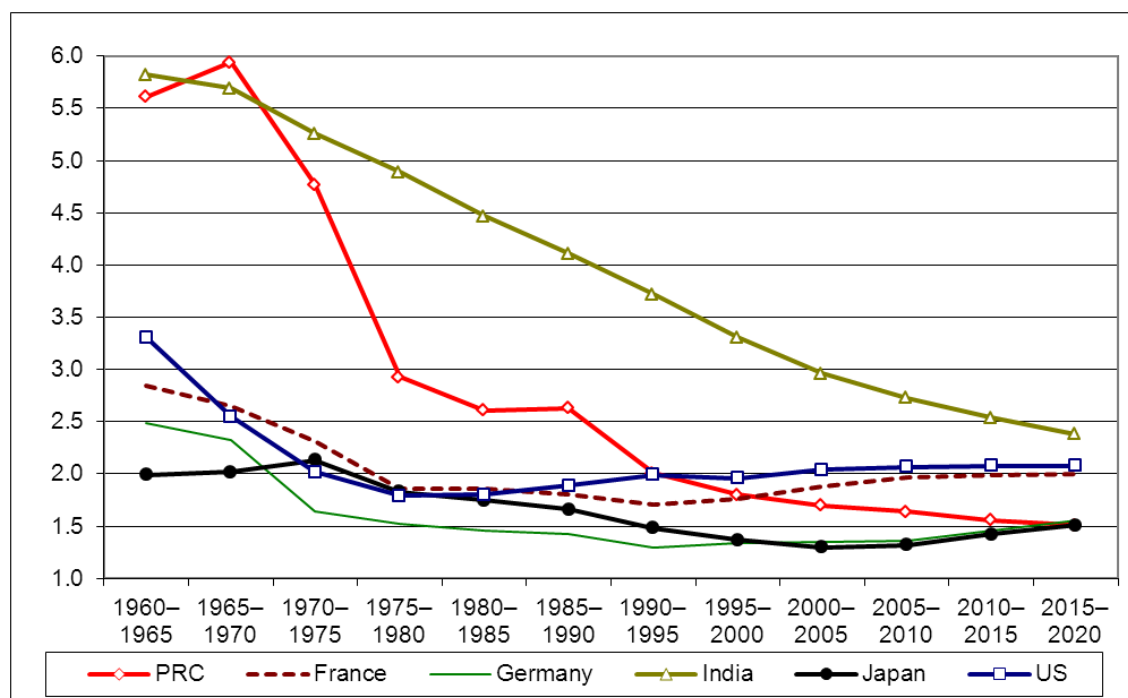
**Figure 6: Japan's Population Aging**  
(Share of Total Population, %)



Source: United Nations (2011).

This aging trend reflects Japan's increasing longevity resulting from improvements in nutrition and health care as well as the very low fertility rate, which has fallen well below the replacement rate of 2.1 since the mid-1970s. There has been some modest positive news recently, as the overall fertility rate rose to 1.39 in 2010 from its near-term low of 1.29 (Figure 7), but it remains well below the replacement rate, pointing to a long-term decline in the population.

**Figure 7: Japan's Fertility Rate—International Comparison**  
(Number births)



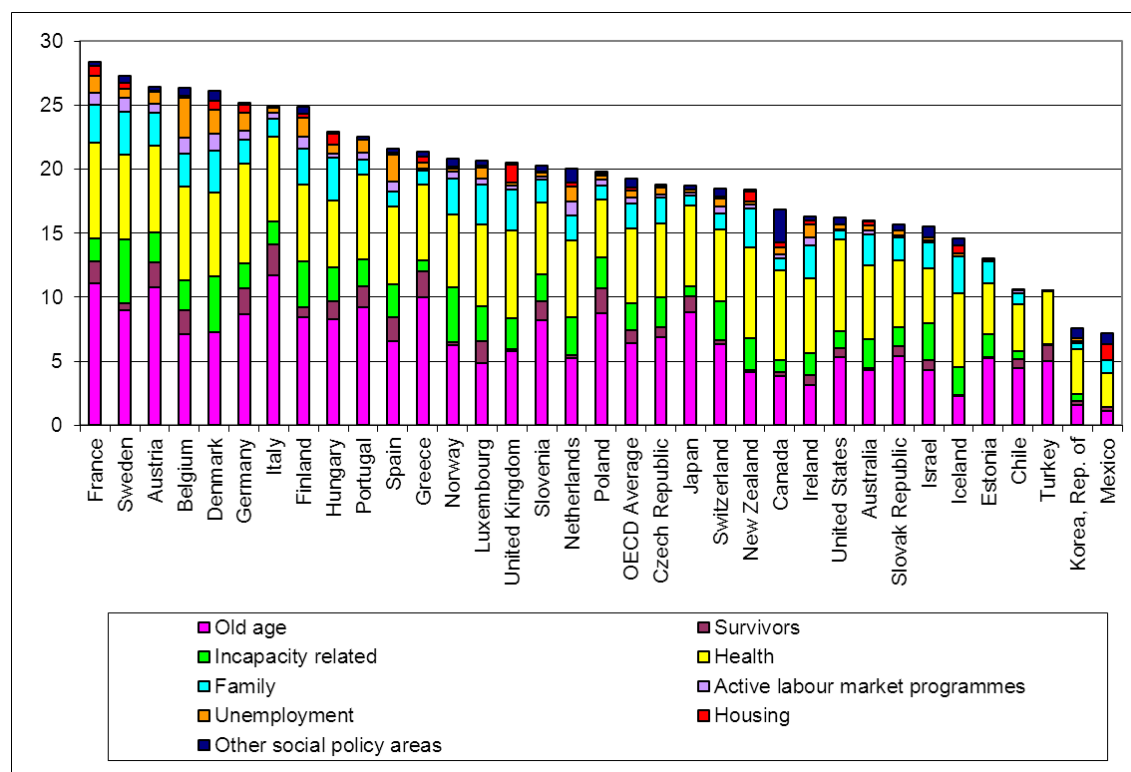
PRC = People's Republic of China.

Source: United Nations (2011).

Despite this advanced aging trend, Japan's total social security spending as a percentage of GDP is still modest among OECD countries at about 18% (Figure 8). However, old-age-related spending (health and pensions) makes up almost half of the total, leaving relatively little room for other social security areas. Aside from health-related spending, which is close to the OECD average, the shares devoted to other areas, particularly family-related spending, are quite small by international standards. The limited size of family-related spending, such as child support and pre-school care, means that Japan's social security system does not provide adequate support for mothers to raise children while working. This may be one of the reasons for women's reluctance to get married and bear children. Without social security system reform toward greater support of families and young mothers, the aging trend of Japan's population is likely to accelerate this disproportion further.

**Figure 8: Japan's Social Spending—Organisation for Economic Co-operation and Development Comparison**

(2007, % of GDP)



GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Source: OECD (2011).

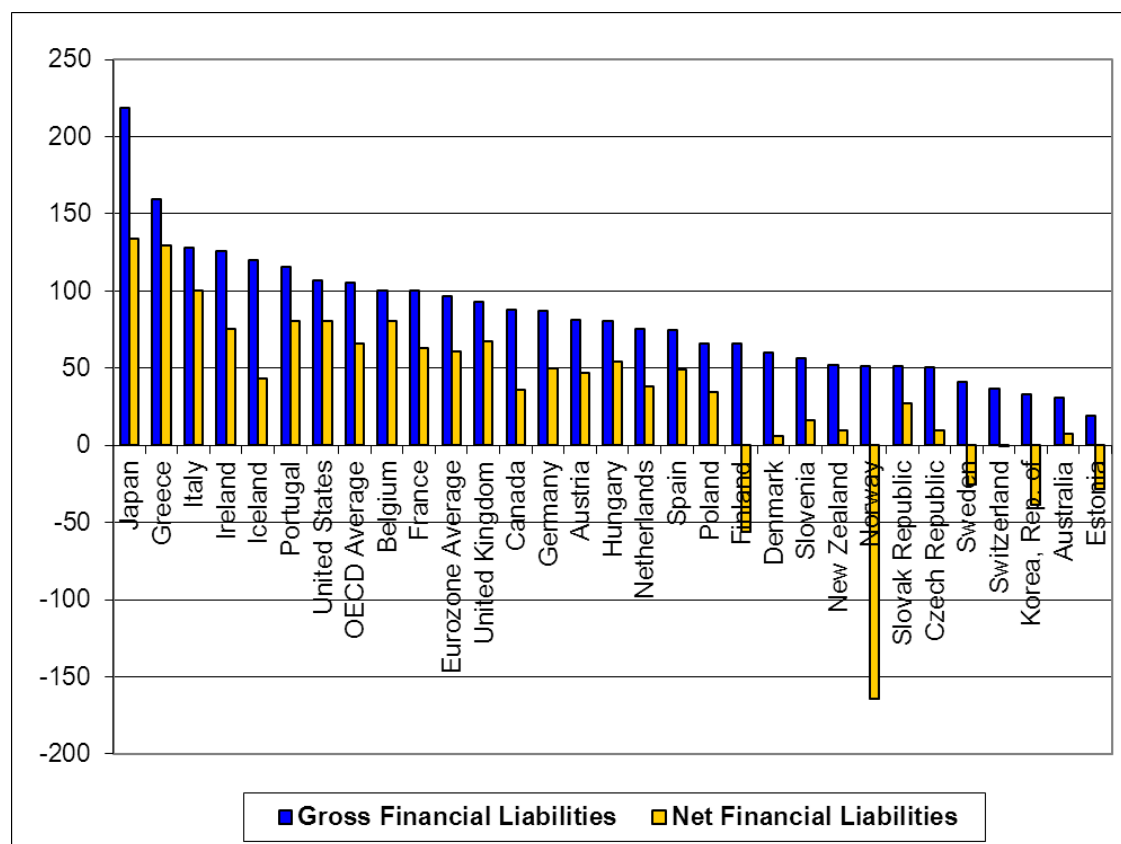
### 3.3 Mounting Public Debt

The biggest financial concern for Japan is to maintain fiscal and debt sustainability as the pressure of the aging population requires that increasing amounts of budgetary resources be allocated for old-age-related purposes, such as pensions, medical care, and elderly care. Following the bursting of the asset price bubble in the early 1990s, the government spent large amounts—mainly for public works—to support aggregate demand in the face of financial sector deleveraging and economic stagnation year after year. Fiscal consolidation began during the growth period of the early 2000s, but this was halted in the wake of the global financial crisis of 2007–2009. The triple disaster has also necessitated additional government spending for disaster reconstruction and nuclear-accident-related needs.

Japan's gross general government debt is huge, standing at 206% of GDP at the end of 2011 (OECD 2012a)—by far the highest among OECD countries—and is projected to rise further to 214% by the end of 2012 (Figure 9). Net liabilities are lower, estimated at 126% of GDP in 2011, since the government holds much of the debt itself, but this is still the second highest level among OECD member countries after Greece.

**Figure 9: Japan's Public Sector Debt—Organisation for Economic Co-operation and Development Comparison**

(% of GDP)



GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Source: OECD (2012a).

Responding to this, the Government of Japan introduced a medium-term fiscal management strategy in June 2010, which attempted to reduce the primary balance deficit (as a ratio of GDP)—for central and local governments—by half by FY2015, to achieve a primary balance surplus by FY2020, and then to reduce the ratio of government debt to GDP steadily afterward. However, Japan is still far from achieving a zero primary balance, which is a basic starting point for ensuring fiscal and debt sustainability.

Despite this alarming situation, government bond yields have been remarkably undisturbed. Since the triple disaster of 2011, the 10-year Japanese government bond (JGB) yield has been stable in the range of 0.7%–1.4%. A number of reasons can be offered for this stability. First, virtually all government debt is yen-denominated and the majority is domestically held, so that foreigners have little scope to sell JGBs.<sup>5</sup> Second, Japan is expected to continue to run a current account surplus, so it remains a net creditor on a flow basis and will not have to borrow from foreigners, despite the fact that the trade balance has turned to deficit.<sup>6</sup> Third, Japan

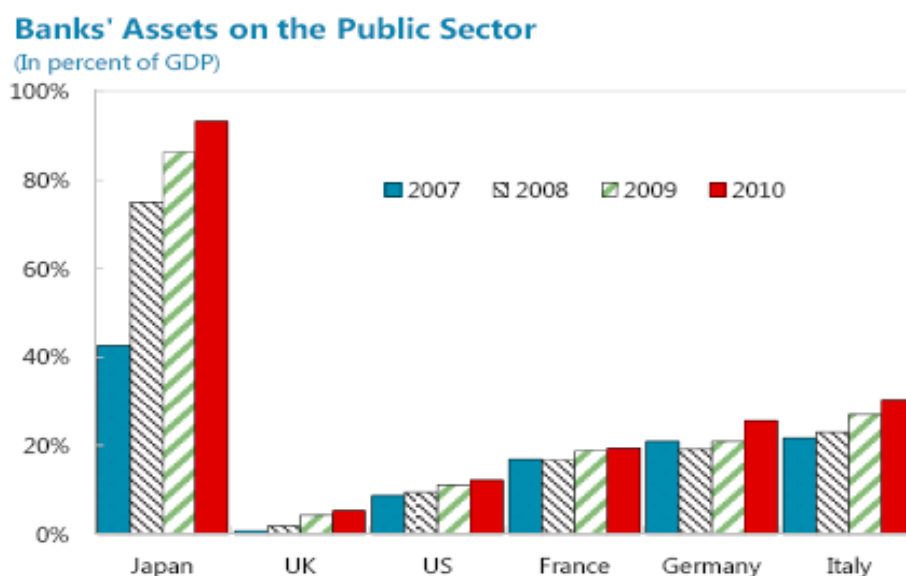
<sup>5</sup> The ratio of foreign holdings of short-term government debt is high at 16.8%, while that of long-term government debt is 8.0% (both at the end of 2011). The overall average ratio is 9.8%.

<sup>6</sup> The trade deficit began to emerge because of (i) the need to import more fuels, such as petroleum and LNG, for power generation to fill the gap created by the shutdown of most nuclear power plants; (ii) weak external demand

remains the world's largest net creditor nation. Finally, the low tax burden in Japan and the low consumption tax, currently at 5%, suggest room for a substantial tax increase, enabling the government to pursue fiscal and debt consolidation. Nonetheless, such high debt levels entail substantial potential risks that the government must take account of.

One risk is concern about banking sector health. The reason is that banks' JGB holdings have risen substantially since 2007 (Figure 10). Japanese banks now hold more than 90% of total JGBs, while banks in the US and Europe hold significantly less government bonds. This suggests that a shock to JGB yields could have potentially serious negative implications for the soundness of Japanese banks and thus for credit growth and GDP growth. This in turn could further weaken economic growth, which would have negative implications for fiscal conditions and could lead to negative feedback loops starting to work between the public sector debt and banking sector problems, much like in euro area problem countries.

**Figure 10: Banks' Holdings of Government Bonds—International Comparison**  
(% of GDP)



GDP = gross domestic product.

Source: International Monetary Fund (2012b).

### 3.4 Lack of Competitiveness in Certain Sectors

Lack of competition drags down efficiency and growth potential in a number of sectors in the services industry—particularly the social sector (health, medical care, elderly care, and education)—and in the agricultural and fishery industry. Given that services account for 70% of GDP and employment in Japan, it is essential to increase the productivity of the services industry. These industries are either highly regulated or heavily protected, without being adequately exposed to market competition.

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in the US and Europe; and (iii) loss of international price competitiveness caused by the strong yen. In 2011, in addition to these general trends, disruptions to industrial supply chains resulting from Japan's triple disaster in the spring and Thai floods later in the year were also factors that led to declines in net exports of parts and components in the automobile, electronic, and other machinery sectors.

Productivity in the services industry in Japan is low, in comparison to other developed countries and to the domestic manufacturing sector. The level of productivity in Japan's services sector is 20%–60% less than in the US and its productivity growth is less than in the manufacturing sector (Morikawa 2009). Factors that affect productivity include entry and exit regulation, availability of information technology, the extent of innovation, and human capital of workers.

Raising productivity in the social sector is an important challenge for Japan. For example, the health-care system faces serious challenges as population aging is putting upward pressure on demand for health and long-term care services, while a shrinking working-age population is making it more difficult to meet the rising demand from the supply side. Japan has one of the lowest ratios of physicians to population among the OECD countries, putting severe pressure and stress on physicians. The number of nurses and elderly caretakers is in short supply, partly because of long working hours and inadequate salaries. Raising efficiency and productivity, in addition to securing an adequate number of health-care professionals and workers, is a vital priority in the aging society.

Japanese agriculture suffers a number of serious structural problems, and can benefit from structural reform (OECD 2010). Reflective of these problems, Japan's agricultural production peaked in 1990 at ¥7.9 trillion and has been declining ever since; in 2008, it was only ¥4.4 trillion or a mere 0.9% of GDP (compared with 3% in the 1980s). Not only is the scale of agricultural farms small but also the agricultural labor force is aging rapidly, with 62% of agricultural workers in 2010 estimated to be over 65 years of age. With a declining and aging agricultural labor force, 7% of the agricultural land remained uncultivated in 2010, and the share is expected to rise. In part responsible for this outcome have been the legal restrictions on agricultural land ownership and the entry of corporations in agricultural production, both designed to protect the traditional form of family farming. The government has eased these restrictions since 2000, but not sufficiently to encourage corporate farming on a full scale.

Current agricultural protection is not conducive to greater efficiency or competitiveness. The current practice of limiting rice production to maintain high domestic prices does not lower rice prices or increase domestic and external demand. Protection has been shifting toward income support by introducing the household income compensation scheme, though the shift has been only partial. However, this new scheme presents perverse incentives for farmers as it provides income subsidies to all farmers irrespective of scale of farmland and production efficiency. As a result, part-time farmers without intention to increase scale and improve competitiveness and management efficiency are willing to stay in agriculture because they can receive income subsidies.

### **3.5 Uncertain and Costly Supply of Energy and Electricity for Economic Growth**

The nuclear power plant accident casts a long shadow over Japan's, and even the world's, energy supply future. Nuclear power was just regaining favor as a non-carbon-producing energy source but, following the TEPCO Fukushima Nuclear Power Plant accident, some countries, including Germany, have decided to abandon nuclear power generation while many others have put their nuclear expansion plans on hold. Before the triple disaster, Japan had ambitious plans to add 14 new nuclear reactors by 2030, which would raise the share of nuclear generation in total electric power generation to more than 40% of the total by 2020 and more than 50% by 2030 versus the pre-disaster level of about 30% (Table 4). But these plans are now on hold because of increased opposition by not only the local communities hosting the nuclear power plants but also by the public. Even restarting the existing nuclear plants, almost all of which have been shut down for safety reasons after regular maintenance, has been quite difficult,

because of local demands for adequate stress testing and assurance of safety. A permanent shutdown of most nuclear power plants would challenge Japan's ability to secure a reliable supply of electricity at a low cost, without increasing consumption of fossil fuels.

**Table 4: Japan's Pre-Triple-Disaster Plan for Electric Power Generation**

<b>% of Total</b>	<b>1990</b>	<b>2008</b>	<b>2020<sup>a</sup></b>	<b>2030<sup>a</sup></b>
Coal	14.4	27.3	21.5	13.0
Oil	29.3	11.8	2.8	2.3
LNG	19.0	23.6	24.0	21.8
Nuclear	30.5	30.5	42.7	51.3
Hydropower	5.0	3.0	2.0	2.0
Others	1.8	3.8	7.0	9.6

LNG = liquefied natural gas.

<sup>a</sup> Estimated. Source: International Energy Agency (2010).

There is also a need to reform the energy sector in Japan, which has been plagued by regional monopoly and segmented markets. The government is considering the separation of the power transmission and distribution operations of power companies from their power generation operation; the introduction of market mechanisms to balance supply and demand; and the promotion of alternative, renewable sources of energy. Separation of power transmission and distribution operations is intended to stimulate new firms' entry into power generation, thereby stimulating electricity supply, so that they can use the transmission lines, which had been virtually inaccessible for them, more cost effectively. This is expected to break the regional monopoly of the existing nine electric power companies. The introduction of market mechanisms would facilitate supply and demand adjustment at the time of heavy demand so that forceful measures, such as directed power supply blackouts, would not be needed.

In the longer term, even if Japan's total energy demand is stagnant, it seems likely that the share of nuclear power in total electric power generation will fall as damaged reactors and other older plants are decommissioned, requiring a search for alternative sources of energy supply. This will need to involve the promotion of renewable energy sources such as solar, wind, geothermal, and biomass power, as well as energy conservation measures, to reduce dependence on traditional carbon fuel sources that produce large quantities of greenhouse gases. The feed-in-tariff system introduced in July 2012 is expected to stimulate the growth of renewable energy sources.

## 4. JAPAN'S NEW GROWTH STRATEGY

Once the reconstruction investment is successfully completed and radiation controlled, the economy will rebound from the triple disaster. However, as described in the previous section, Japan still faces enormous structural challenges. To achieve a sustainable recovery and put the economy back on a long-term growth trajectory, Japan needs to develop and implement a long-term growth strategy. Such a strategy should encompass at least four major areas: (i) an appropriate macroeconomic policy mix to eliminate price deflation, (ii) supply-side policies to increase growth, (iii) reform of social security and fiscal consolidation to achieve fiscal and debt sustainability, and (iv) the formation of economic partnerships for trade and investment.

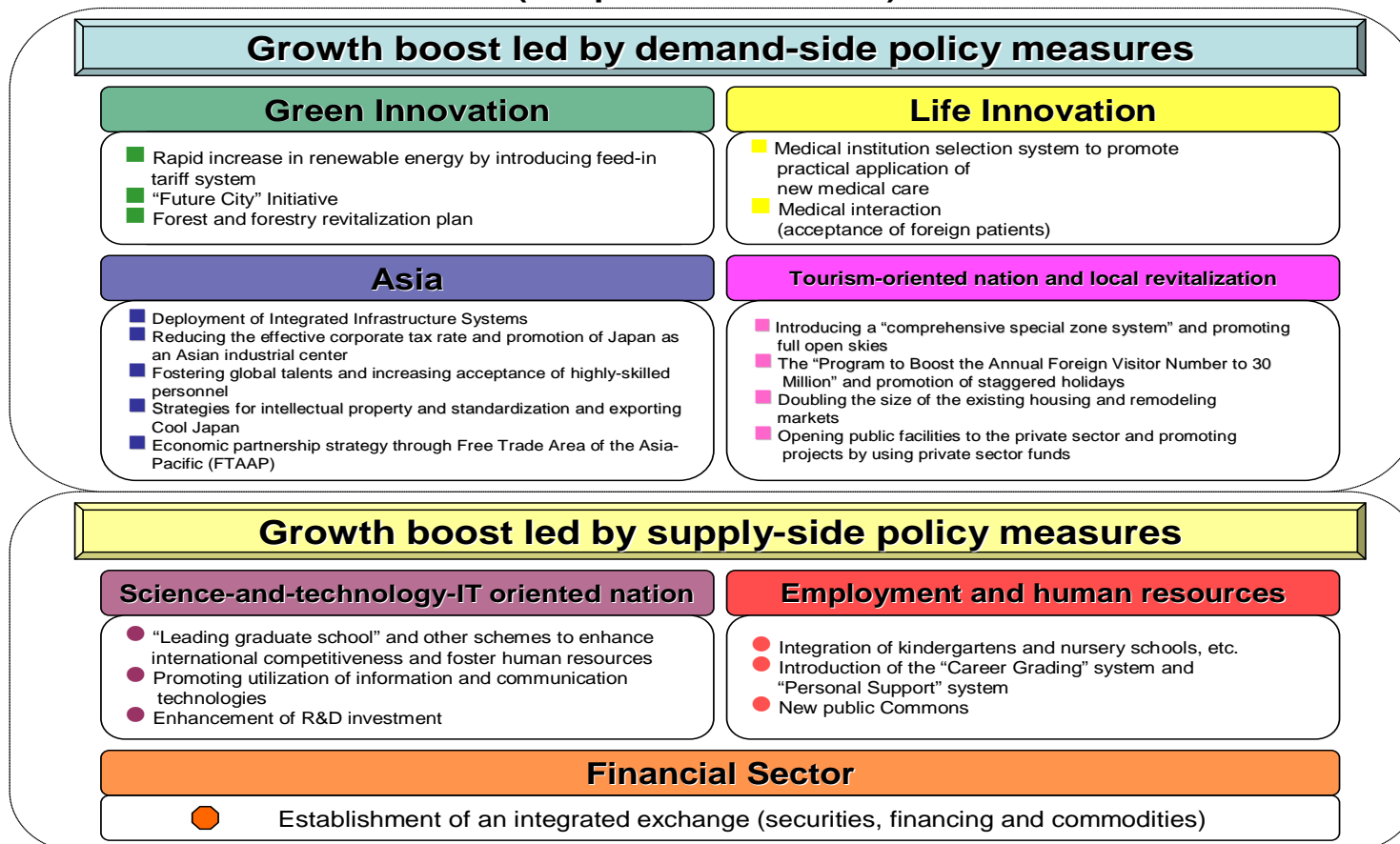
The Cabinet of Prime Minister Kan endorsed a New Growth Strategy in June 2010 (Prime Minister's Office 2010). The new strategy identified seven key areas for this purpose: the environment and energy, health care, growth of the Asian economy, tourism and local revitalization, science and technology, employment, and finance (Table 5). Noteworthy

measures included the promotion of Japan's infrastructure development businesses overseas, a phased-in reduction of corporate taxes from 40% toward the level of other developed countries, economic partnerships through a Free Trade Area of the Asia-Pacific (FTAAP), and better child-care services to encourage female labor force participation. The new strategy, set before the triple disaster, would have to be strengthened in view of the consequences of the disaster, but provides a basically correct approach to raising potential growth.

However, there are concerns that the government may backtrack on the overall implementation of its growth strategy, including corporate tax reduction, social security reform, a Trans-Pacific Partnership (TPP) agreement and agricultural reform. The government's recent self-assessment of the progress of the new strategy was discouraging. Of the 409 policy measures identified in the strategy, only 60% were implemented and a mere 10% were successfully delivered. Thus, the fundamental challenge for the government is to make decisive political commitments to implement the various measures effectively to help raise the potential growth of the Japanese economy.

Table 5: Japan's Growth Strategy, June 2010

## 21 National Strategic Projects for Revitalization of Japan for the 21<sup>st</sup> Century (Adopted in June 2010)



Source: Prime Minister's Office, Government of Japan

## 4.1 Macroeconomic Policy Management

One of the most important challenges is to reset the macroeconomic environment to support long-term growth, including overcoming persistent price deflation. Deflation since 1998 has contributed to stagnant private investment and consumption. It has also been a cause of stagnant nominal GDP, even though real GDP has been growing, albeit anemically. An exit from price deflation is essential to support the economic recovery from the global financial crisis and the triple disaster, as well as to put real GDP back on a higher growth trajectory.

As price deflation tends to occur with a GDP gap—supply capacity exceeding demand—closing such a gap is key to overcoming deflation. Currently, disaster reconstruction spending—planned to be about ¥19 trillion (about 4% of GDP) over 2011–2025—is under way, adding demand to the economy.<sup>7</sup> Given the current fiscal situation, any additional fiscal support to expand aggregate demand cannot be expected. In addition, the reconstruction stimulus will eventually fade away, thus contributing to a reduction of aggregate demand in 2013 and 2014. In addition, the much-needed fiscal consolidation would likely dampen domestic demand in the medium term.

This means that additional domestic demand must come from the private sector, supported by growth-oriented structural reforms, and the stimulus provided by further monetary easing. In this sense, forceful monetary easing is a vital tool to overcome price deflation.

Since February 2012, the Bank of Japan (BOJ) has strengthened its monetary policy framework. It adopted a medium- to long-term price stability goal of 1%, which has helped clarify the objective of monetary policy. In addition, it expanded the Asset Purchase Program to ¥70 trillion in two steps, and extended the maturity of JGB purchases from 1–2 years to 2–3 years. However, the BOJ is unlikely to achieve the 1% inflation goal by 2014. The BOJ needs more aggressive policies.

First, the BOJ can set a more aggressive inflation goal of 1%–3%, rather than 1%, with a time line such as by 2014. This will dispel the concern that the current inflation goal of 1% could be a ceiling and that the BOJ might start tightening monetary policy once the inflation rate comes close to 1%. Stating an explicit time line will provide a stronger message to the market that the BOJ is serious about achieving the inflation goal. The BOJ can also extend its inflation forecast to 3 years or beyond to better guide inflation expectations.

Second, the BOJ can take more aggressive policy measures, including substantial expansion of the Asset Purchase Program beyond current plans; extension of the maturity of JGB purchases beyond 3 years; and purchasing of foreign assets, in consultation with the Ministry

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<sup>7</sup> The triple disaster destroyed the Japanese economy's supply capacity but it has also dented aggregate demand such as private consumption and net exports. The cost of disaster reconstruction is planned to be financed by increases in taxes over the next 25 years.

of Finance which is in charge of currency policy, and more private financial assets.<sup>8</sup> Given the ongoing financial turmoil in the euro area, purchasing euro-denominated assets—such as bonds issued by the European Stability Mechanism once it starts operation in September 2012—would be an attractive option.

These policies would likely change market perceptions of BOJ policy by reducing lending rates, boosting asset prices, depreciating the yen exchange rate, and raising inflation expectations.

## 4.2 Supply-Side Policies

A far-reaching package of structural reforms would be needed to raise long-term GDP growth. Reforms should address the most important constraints on growth: increasing the labor force, especially women and old-aged people; enhancing productivity, particularly in services and agriculture; providing a stable supply of energy and electricity; reducing the corporate tax rate; and improving financial intermediation, particularly for small and medium-sized enterprises (SMEs) in new emerging sectors.

**Increasing the labor force**, especially through higher labor market participation by the female and old-aged workforce, is a key challenge given the shrinking population of productive age. Effective measures would include further expansion of child-care facilities, elimination of the tax reduction for dependent spouses, and an increase in the retirement age to above 65 years. In addition, further liberalization of the immigration policy would be needed to encourage movement of foreign workers with advanced skills and knowledge and with nursing and old-age care credentials.

**Raising labor productivity** is the most important challenge for the Japanese economy, ranging from the manufacturing to services and agricultural industries, given the shrinking labor force. Facing greater competition from the rest of Asia, the Japanese manufacturing industry needs to keep moving up the value-added chain and increasing the innovation content of its production. To this end, it needs to encourage research and development (R&D) in high-tech and knowledge-intensive sectors, and provide further support for R&D at universities. To raise productivity in protected services sectors, easing regulations and barriers to entry in areas such as social services (health, medical, and old-age care) would be needed. The agricultural sector remains a major bastion of protection and an obstacle to achieving broad free trade agreements (FTAs). To help overcome such protectionism, the government needs to raise agricultural productivity by setting a policy framework that enables farmers to compete domestically and create scope for exports, through more targeted income support to professional firms and corporate entities with large-scale farmland.

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<sup>8</sup> Purchasing foreign assets is equivalent to unsterilized market intervention to sell yen and thus requires a full agreement with the Ministry of Finance, since it is in charge of currency policy.

**Providing a stable supply of energy and electricity** is a fundamental requirement for any country's sustained economic activity. Given the rising concerns over nuclear safety among the public, the government must take a decision as to the best mix of energy sources for electricity power generation, including nuclear, fossil fuels, and renewables. From the perspective of reducing greenhouse gasses, it would be desirable to promote the use of environmentally friendly alternative energy sources such as wind, solar, geothermal, and biomass power. However, it is expected to take time for the renewables to become the dominant source of energy, implying that the government will likely have to restart operating existing nuclear power plants that are judged safe. In addition, Japan needs to reform the energy sector—to integrate the segmented markets, to introduce competition in areas such as renewables supplies, and to introduce price mechanisms—as well as continuing to encourage energy conservation and switches to less polluting energy technologies. This will require a variety of incentive schemes, including investment tax credits and other subsidies.

**Reducing the corporate tax rate** from the current 40.7%, one of the world's highest corporate tax rates among OECD countries, to about 35% is welcome news, but further cuts would be desirable.<sup>9</sup> Considering that the average corporate income tax for OECD countries is 25.5% (OECD 2012a), scope exists for further reduction. This should be accompanied by broader tax bases of corporate and personal income tax, so many more would pay taxes.

**Improving financial intermediation** is a supportive supply-side policy, particularly for credit-constrained SMEs. In emerging growth sectors such as green industries and senior market sectors, potential is huge for innovative SMEs to be active. However, sufficient bank loans do not seem to be flowing to these firms.

### 4.3 Social Security Reform and Fiscal Consolidation

The government needs to pursue both social security reform and fiscal consolidation. Priorities for social security reform include the implementation of well-targeted social protection programs and maintenance of sustainable pension and medical insurance. Social sector protection programs should be targeted at strengthening family support to encourage child-raising mothers to stay in the labor market, as well as protecting low-income earners to promote social cohesion. Putting social security on a sustainable basis should increase public confidence in the system, and thereby increase the willingness of individuals to make their required contributions to the system.<sup>10</sup>

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<sup>9</sup> The government added a 3-year surcharge on the corporate tax rate of 2.4 percentage points to help pay for disaster-related reconstruction, so that will limit the positive impact on investment of the tax cut.

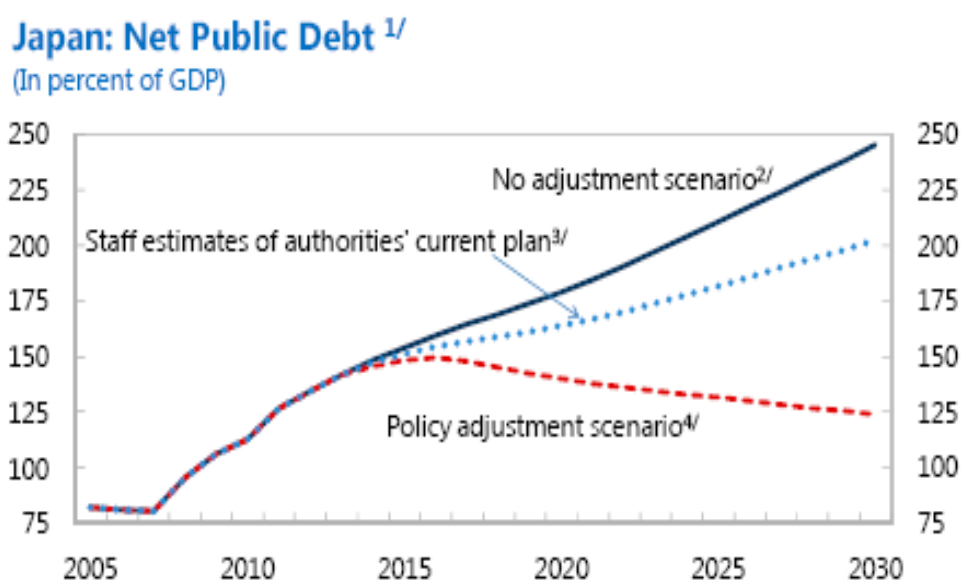
<sup>10</sup> Many individuals do not contribute to national pension and health care plans, though they are legally required to do so.

Achieving the government's goal of a primary budget surplus by FY2020 and putting the public debt ratio on a downward trend thereafter will require both spending cuts and revenue increases. To do so, the Noda administration decided to double the consumption tax in two stages to 10% by 2015.<sup>11</sup> However, even with this consumption tax increase, tax revenues are not likely to be enough to achieve a primary budget surplus by FY2020. Figure 11 suggests that a consumption tax hike would be helpful in moderating the pace of debt ratio increase, but more policy adjustment efforts will be needed to achieve fiscal and debt sustainability.

**Figure 11: International Monetary Fund Projections of Japan's Net Public Debt**

**—Alternative Scenarios**

(% of GDP)



GDP = gross domestic product.

<sup>1</sup> Net debt of the general government, including the social security fund.

<sup>2</sup> No consumption tax increases assumed.

<sup>3</sup> A consumption tax increase to 10% in 2015 assumed.

<sup>4</sup> An additional 5% of GDP improvement of the structural primary balance assumed over 2011–2020.

Source: International Monetary Fund (2012b).

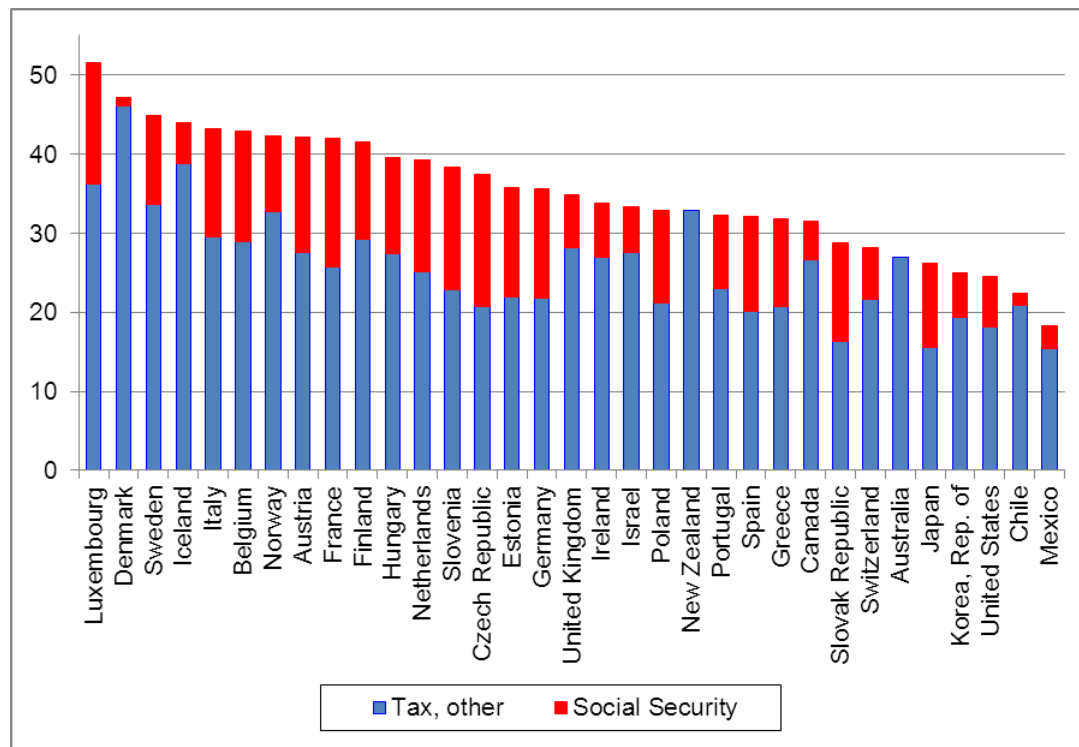
This suggests that a more ambitious fiscal consolidation program, including both revenue increases and spending cuts, is needed to maintain fiscal and debt sustainability. These include, for example, a further increase in the consumption tax rate (to 15%–20%), curbing the growth of non-social security spending, and limiting growth in social security spending.

<sup>11</sup> Under the current proposal, the consumption tax will be raised from 5% to 8% in April 2014 and to 10% in October 2015.

Fortunately, international comparisons show that the combined burden of taxes and social security contributions relative to gross national income (GNI) in Japan is relatively low compared with other developed countries (Figure 12). Therefore, there should be room to raise taxes and social security contributions somewhat as part of an overall fiscal consolidation policy that includes further spending and benefit cuts.

**Figure 12: Japan's National Tax Burden – International Comparison of Social Security and other Tax Revenues**

(2010, % of GNI)



Note: Data for the Netherlands, Poland, New Zealand, Australia and Japan are for 2009.

GNI = gross national income.

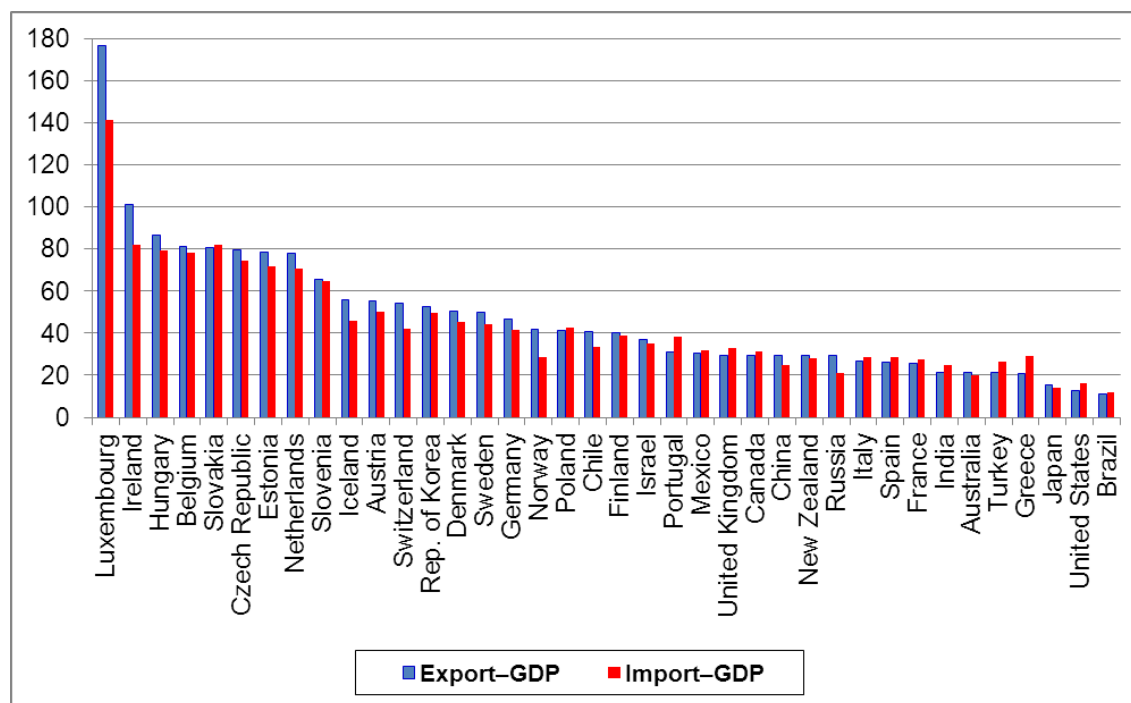
Source: Organisation for Economic Co-operation and Development (2012a).

## 4.4 Economic Partnerships

Japan's strength in manufacturing and its location in Asia, the fastest-growing region in the world with a rapidly rising middle class, make it imperative to maximize the growth benefits by taking advantage of business opportunities in this rapidly growing market. However, Japan's share of trade in GDP is still surprisingly small (Figure 13)—about the same as that of the US. Even though exports have been one of the important growth drivers of Japan's economic growth, the ratio of exports to GDP is quite low among the OECD countries (34th), and the

ratio of imports to GDP is even lower. The Japanese economy has yet to internationalize itself even in the area of trade.

**Figure 13: Japan's Trade–Gross Domestic Product Ratio,  
International Comparison, 2010 (% of GDP)**

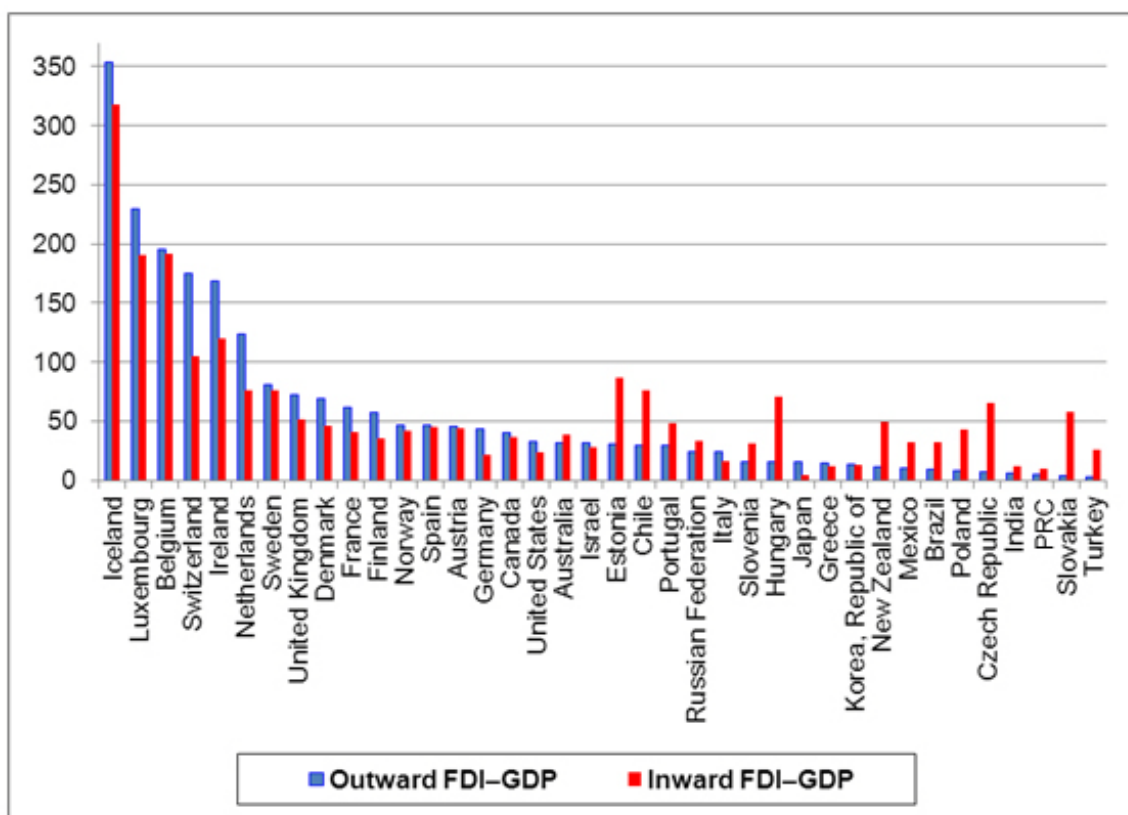


GDP = gross domestic product, PRC = People's Republic of China.

Source: International Monetary Fund. International Financial Statistics <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393> (accessed 2 August 2012).

On top of this, Japan's internationalization in the area of foreign direct investment (FDI) is also limited. Its ratio of outward FDI (stock) to GDP is low at 27th among the OECD countries and its ratio of inward FDI (stock) to GDP is miniscule (Figure 14), as it ranks last among major countries by a large margin. This means that Japan is passing up valuable investment opportunities that foreign firms could take advantage of to stimulate productivity, employment, and growth. Japan needs to take more aggressive measures to encourage inward FDI by improving the climate for FDI inflows—i.e., lowering barriers to investment and ownership, eliminating behind-the-border regulations, simplifying administrative procedures and market access, and relaxing labor regulations.

**Figure 14: Japan's Foreign Direct Investment Stock—Gross Domestic Product Ratio—International Comparison, 2010 (% of GDP)**

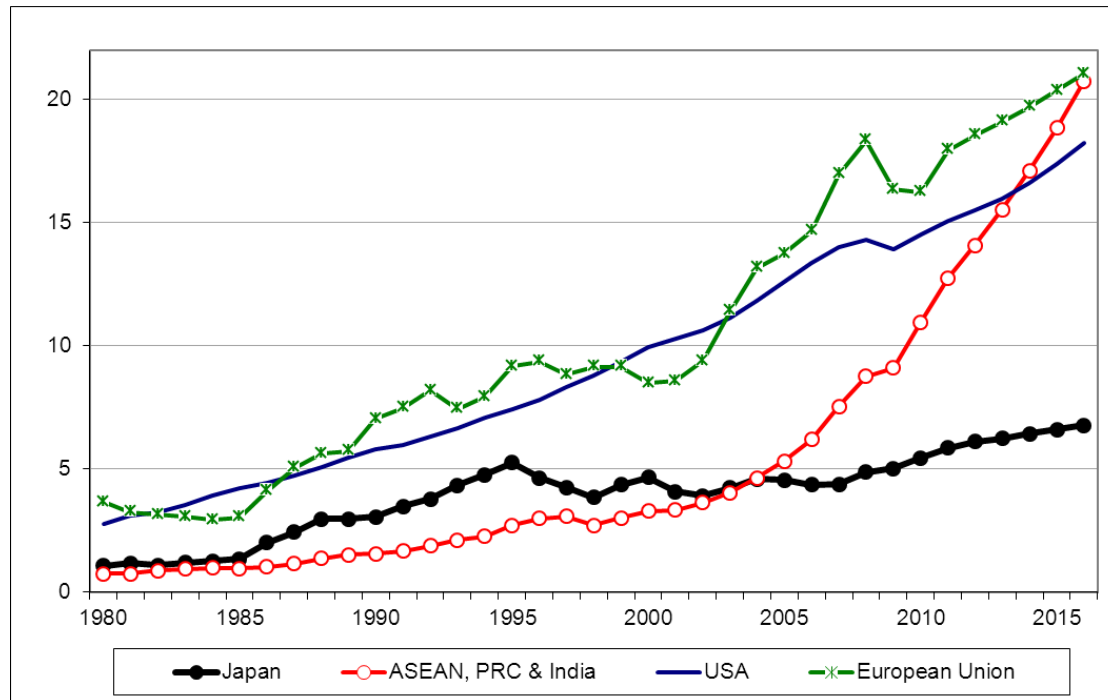


FDI = foreign direct investment, GDP = gross domestic product, PRC = People's Republic of China.

Source: UNCTAD (2012).

From Japan's perspective, three major economies—the US, the European Union (EU), and emerging Asia—are attractive potential economic partners (Figure 15). The US and European markets are large and mature for highly sophisticated manufacturing products, which Japanese firms can serve well. Japanese producers need to maintain their markets shares in these economies. On the other hand, emerging Asia is expanding rapidly and its GDP is set to overtake that of the US and the EU by the second half of the 2010s. Japanese firms also need to capture some segments of this market.

**Figure 15: Economic Size of the United States, European Union, and Emerging Asia**  
(US\$ trillion)



ASEAN = Association of Southeast Asian Nations, PRC = People's Republic of China.

Note: The data are nominal gross domestic products measured at current exchange rates, including International Monetary Fund projections.

Source: International Monetary Fund (2011).

Building economic partnerships with emerging Asia is a promising way to promote sustainable growth. The government should work to create an Asia-wide free trade and investment area to be able to participate more effectively in these markets. The first step could be to form a People's Republic of China (PRC)–Japan–Republic of Korea FTA, and to connect it with the existing Association of Southeast Asian Nations (ASEAN)<sup>12</sup>+1 FTAs, such as the ASEAN–Japan FTA, ASEAN–PRC FTA, and ASEAN–Republic of Korea FTA. This could develop either into an ASEAN+3 or ASEAN+6 Economic Partnership Agreement (EPA), depending on whether or not Australia, India, and New Zealand are included.

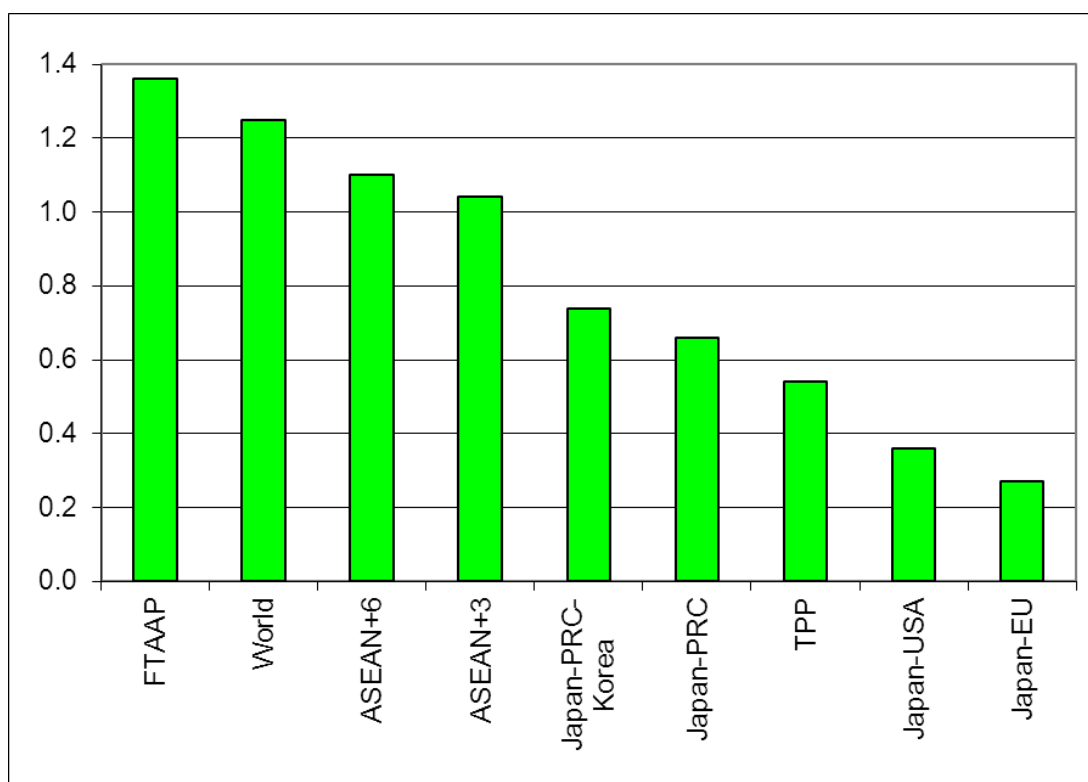
Japan also needs to promote agreements to harmonize rules, regulations, and market practices, particularly through a TPP agreement. The TPP rules on trade and FDI have the potential to become dominant in Asia and the Pacific, so it is vital for Japan to join the

<sup>12</sup> ASEAN members include Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

negotiations at an early stage, rather than joining later and having to accept the negotiated rules.<sup>13</sup> Connecting a TPP with an ASEAN+6 EPA could lead to the development of an FTAAP.<sup>14</sup> Japan must convince ASEAN members that the TPP agreement is not aimed at dividing it, but should be seen as a step toward an FTAAP, which all ASEAN members can eventually join. Figure 16 shows that the benefits to Japan of FTAs increase steadily with a rise in the number of partner countries included in the agreement. Japan's benefit from a TPP by itself is small (0.5% of GDP), but connecting it with ASEAN+3 or ASEAN+6 to form an FTAAP yields a significantly bigger gain (1.4% of GDP).

**Figure 16: Japan's Benefits from Various Free Trade Agreements and Economic Partnership Agreements**

(% of GDP)



ASEAN = Association of Southeast Asian Nations, EU = European Union, FTAAP = Free Trade Area of the Asia-Pacific, GDP = gross domestic product, PRC = People's Republic of China, TPP = Trans-Pacific Partnership, US = United States.

Source: Kawasaki (2011).

<sup>13</sup> One of the biggest hurdles for Japan joining the TPP is to open the agricultural sector to international competition, which would require significant reforms of the sector.

<sup>14</sup> Although India is neither an Asia-Pacific country nor a member of Asia-Pacific Economic Cooperation, it may join an FTAAP in the future.

Other steps to increase economic partnership with emerging Asia include creating a seamless Asia through cross-border infrastructure connectivity; promoting a green Asia through enhanced support for environmental improvement, energy efficiency, and clean energy technologies; and transforming Tokyo into a competitive international financial center and strengthening financial cooperation in Asia.

Enhancing infrastructure and environmental cooperation could include high-speed trains, water resource management, energy saving technology, and smart cities. Connecting Japan with emerging Asia through information technology, marine, and air transport systems is essential to reduce Japan's business costs of trading with other Asian economies. Connecting emerging Asian economies through cross-border infrastructure would also benefit Japanese multinational firms operating in these economies. By transforming Tokyo into a truly international financial center, Japan could channel its massive, underutilized savings for productive investment in emerging Asia. Stronger financial cooperation in Asia could include further efforts to improve the effectiveness of the Chiang Mai Initiative Multilateralization, the ASEAN+3 Macroeconomic Research Office, and Asian bond market development initiatives and programs, as well as the introduction of an Asian financial stability dialogue and an Asian currency basket index.

## 5. CONCLUSIONS

The Great East Japan Earthquake was the biggest disaster for Japan since World War II. In the short term, reconstruction and other related costs will exert a heavy drain on a fiscal situation in Japan that was already stretched. Total financing needs are expected to be close to ¥20 trillion (4% of GDP) over the coming years. However, Japan's current account is still in surplus, so its fiscal deficit continues to be financed by domestic excess savings, an important stabilizing factor. It remains to be seen how much the government will be able to finance the fiscal deficit out of consumption tax increases, and what impacts such increased taxation would have on aggregate demand. It is to be hoped that the government will be sufficiently mindful of potential deflationary drags in a situation where the economy is already weak. Monetary policy and exchange rate policy can contribute to reducing the deflationary impact.

Japan faces numerous structural challenges as well, including a low trend growth rate, population aging, inadequately funded social security programs, high government debt, weak productivity in certain sectors, and the need to obtain secure and environmentally friendly energy supplies.

To recover from the disaster on a sustainable basis, the key challenge for Japan is to implement a new growth strategy. It needs to use reconstruction from the triple disaster as an opportunity for pursuing more far-reaching structural reforms. Domestically, key areas that need to be focused on are supply-side reforms, including support for R&D in high-technology,

knowledge-intensive, green growth areas; deregulation to promote growth in service sectors and agriculture; corporate tax reduction; and increased energy security; as well as fiscal and social security reforms to put the public debt to GDP ratio on a sustainable basis.

To this end, the areas most affected by the triple disaster can be used to promote a new economic growth model for the rest of Japan. For example, productivity in the agriculture and fishery sector can be raised by introducing private sector vitality by consolidating affected farmland into large-scale operations to increase productivity, and consolidate 250 or so affected fishing ports into a handful of large-scale ports. In addition, building tsunami-free, eco- and old-aged-friendly cities and towns in these areas can also be a model for the rest of Japan.

Externally, Japan needs to link its economy firmly with the strong growth track of emerging Asia and its rapidly growing middle class. It needs to promote greater economic links with the rest of Asia, including moves toward an East Asian FTA and support for the TPP that could eventually develop into a trans-Pacific FTAAP. A wide FTA could bring substantial benefits to the Japanese economy.

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