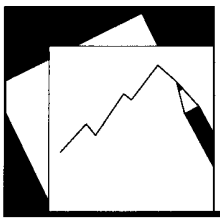
WP/14/142



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Health Spending in Japan: Macro-Fiscal Implications and Reform Options

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Health Spending in Japan: Macro-fiscal Implications and Reform Options

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Abstract

Health spending has risen rapidly in Japan. We find two-thirds of the spending increase over 1990–2011 resulted from ageing, and the rest from excess cost growth. The spending level will rise further: ageing alone will raise it by 3½ percentage points of GDP over 2010–30, and excess cost growth at the rate observed over 1990–2011 will lead to an additional increase of 2–3 percentage points of GDP. This will require a sizable increase in government transfers. Japan can introduce micro- and macro-reforms to contain health spending, and financing options should be designed to enhance equity.

JEL Classification Numbers: H51, I10, I13, I18

Keywords: Japan, health spending, long-term care, fiscal policy

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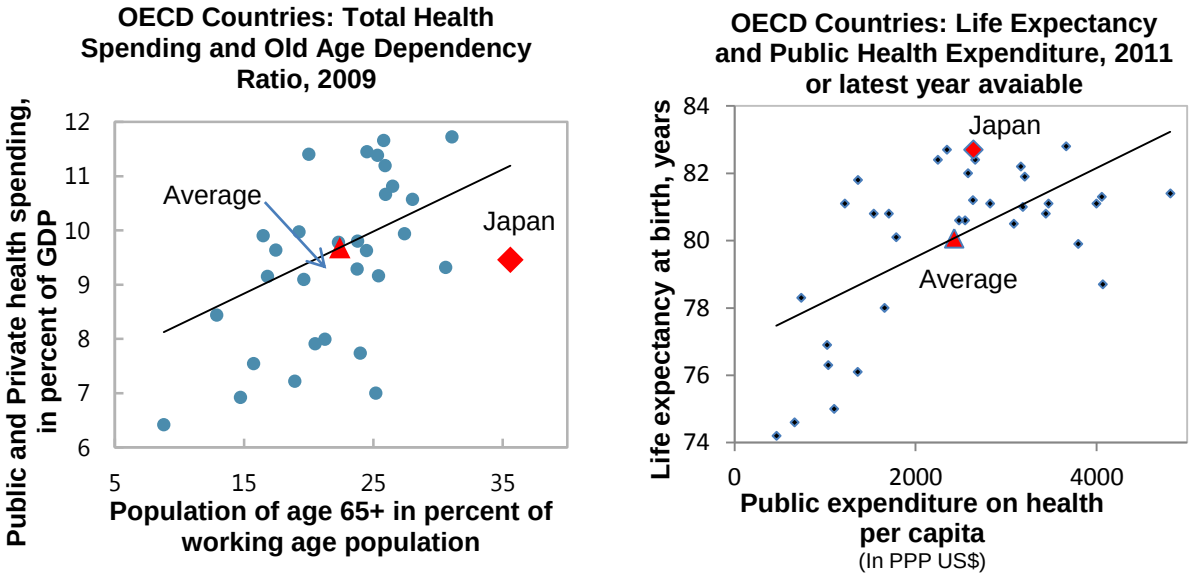
I. INTRODUCTION

Providing the population with universal care, Japan's health system accomplished superior health outcomes. Japan achieved universal health insurance coverage in 1961, and started to provide its citizens with long-term care insurance in 2000 (see Box 1 for a brief description of Japan's health care and long-term care system). Despite the highest old-age dependency ratio among advanced economies, Japan's public health spending as a percent of GDP is only marginally higher than the OECD average (Figure 1, left panel). While Japan's life expectancy is among the highest, public health spending on a per-capita basis is comparable to the peers (Figure 1, right panel). Quantitative analyses that take account of socio-economic and lifestyle factors also point to high spending efficiency for Japan (Joumard and others, 2010). Shibuya and others (2011) argue that universal health care at affordable costs contributed to the increase in life expectancy through reduced cardiovascular-associated mortality rates.

Figure 1. Advanced Economies: Health Spending and Outcomes, 2009–11

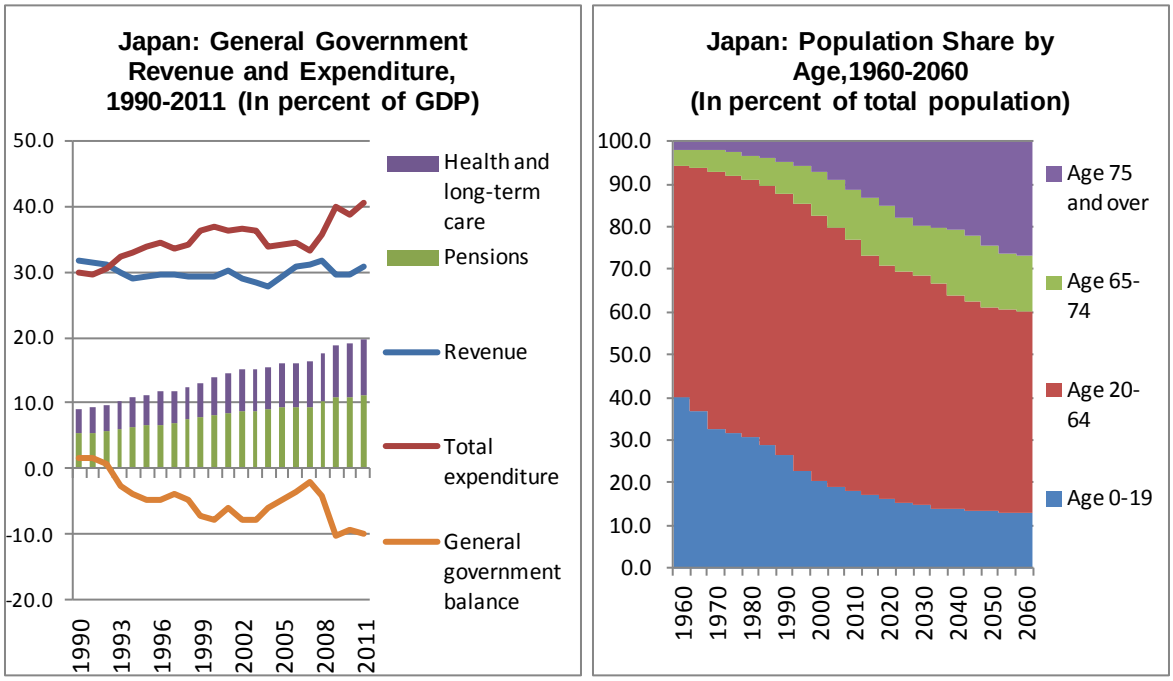


Source: OECD.

Despite this, health spending has been rising rapidly in Japan, constituting a key driver for its deteriorating fiscal condition. Public and private spending on health care and long-term care more than doubled from 4½ percent of GDP in 1990 to 10 percent of GDP in 2011. The corresponding increase in public spending on health care and long-term care was 4¾ percentage points of GDP during this period. This, together with an increase in public pension spending, accounts for a large portion of the increase in the general government deficit of 11½ percentage points of GDP during this period (Figure 2, left panel). Going forward, a continued increase in the old-age dependency ratio will add further pressure on health care and long-term care costs (Figure 2, right panel), while public pension spending is expected to be contained in relation to GDP owing to the so-called macro-indexing

arrangement.[2] Thus, health spending growth adds substantially to Japan's already elevated fiscal risk and constitutes a major challenge for fiscal consolidation.

Figure 2. Japan: Fiscal Developments and Demographic Trend, 1960–2060



Sources: Ministry of Health, Labor, and Welfare; National Institute of Population and Social Security Research; IMF World Economic Outlook database; and IMF staff estimates.

Against this background, we analyze Japan's health spending in the past and in the future, and discuss possible reform options to keep spending growth at bay. We look at spending on both health care and long-term care, and use a simple approach to decompose the past spending increase and distill effects of population ageing and excess cost growth. Ageing raises health spending because the elderly spend more on health than the young. Excess cost growth is defined as the excess of growth in per capita health spending over the growth in per capita GDP after controlling for the effect of demographic change. Excess cost growth has been positive in many advanced economies, pointing to the importance of non-demographic effects such as technological advances (Clements and others, 2012). We then present a range of long-run health spending projections, building on expected demographic changes and the past trend of excess cost growth in Japan, and also examine how to finance the spending increase. To identify reform options, we analyze inefficiencies in Japan's health system, drawing from a cross-country database on health system characteristics, the government's reform blueprint, and existing studies such as OECD (2009), McKinsey (2009), Hashimoto and others (2011), and Shibuya and others (2011).

[2] For more details, see Kashiwase, Nozaki, and Tokuoka (2012).

Our findings can be summarized as follows. First, the rapid increase in health spending over the last two decades resulted from population ageing as well as excess cost growth. We estimate that population ageing accounted for two-thirds of the spending increase. Ageing raises a country's aggregate health spending because an elderly person spends more on health and long-term care than the young. Because the difference in per capita health spending between the old and the young is much more pronounced in Japan than in other advanced countries, the ageing effect is correspondingly more significant. Excess cost growth during the last two decades was positive and at a rate comparable to other advanced economies, accounting for one-third of the spending increase during this period. Healthy ageing—if the health status of the elderly improves in tandem with higher life expectancy, their per-capita spending at a given age would become lower, thus mitigating the ageing effect on health spending—has not taken place in Japan during the last decade.

Second, health spending is likely to increase substantially over the long run. The ageing effect alone will bring up health spending from 9½ percent of GDP in 2010 to 13 percent of GDP in 2030. In addition, if excess cost growth continues at the trend rate observed during the last two decades, health spending will balloon to 15½ percent of GDP in 2030. In this scenario, we project that the spending increase will be financed by a combination of premium contributions (2 percentage points of GDP), government transfers (3½ percentage points), and patient copayments (½ percentage points). Owing to the shrinking working-age population, the increase in premium contributions will have to be achieved by higher payroll tax rates, which would have a detrimental effect on labor supply and demand. The estimated increase in government transfers is equivalent to raising the consumption tax rate by 7 percentage points. In a worst-case scenario where excess cost growth is twice as fast as the trend rate, health spending will reach 19 percent of GDP in 2030. On the other hand, healthy ageing in line with the expected increase in life expectancy could reduce the estimated increase in health spending by 1 percentage point of GDP in 2030.

Third, reforms can help contain health spending growth. There is room to introduce micro-level reforms in Japan that can potentially contain spending without adversely affecting health outcomes. Such reforms include introducing gatekeepers for secondary and tertiary care, improving public management of health care resources, reforming provider payment arrangements to reduce supplier-induced demand for health care, and encouraging use of generic drugs. In addition, macro-level controls such as introducing budget caps and fine-tuning supply constraints and price controls can be effective in reining in health spending, while these options should be designed carefully. On the financing side, raising patient copayments will limit the increase in public health spending while reducing excess demand for health care. This can be implemented with progressive copayment rates (i.e., higher rates for the rich than for the poor) to make reforms equitable and preserve the effectiveness of public health insurance to protect against health risks. In the same vein, raising premium contributions can be accompanied with correcting inequalities among insurers and winding down preferential treatments (e.g., dependent spouses under employment-based insurance programs are exempted from contribution payments).

The rest of the paper is organized as follows. In Section II, we decompose the past increase in health spending into the effects of population ageing and excess cost growth, and analyze the decomposition result in a cross-country context. We then present projections on health care and long-term care spending and the financing mix, and compare our results with other studies. In Section III, we discuss a list of possible reform options and present estimates of fiscal savings. We provide concluding remarks in Section IV.

II. Anatomy of Health Care and Long-term Care Spending and Financing

A. Decomposition of Past Spending Increases

We decompose the past increase in health spending in this subsection. For the rest of this paper, "health spending" encompasses total (i.e., public and private) spending on health care (HC) and long-term care (LTC) covered by the public insurance system. The data are published by the Ministry of Health, Labor, and Welfare (MHLW). Private spending equals patient copayments, and public spending equals total spending minus private spending. Heath spending equals HC spending for 1970–2000 and the sum of HC and LTC spending for 2001–11. Prior to the launch of long-term care insurance in 2000, HC spending included some LTC services that are covered by public health insurance. Nevertheless, long-term care insurance significantly expanded the scope of long-term care services covered by public insurance, thus giving rise to a structural break around 2000.

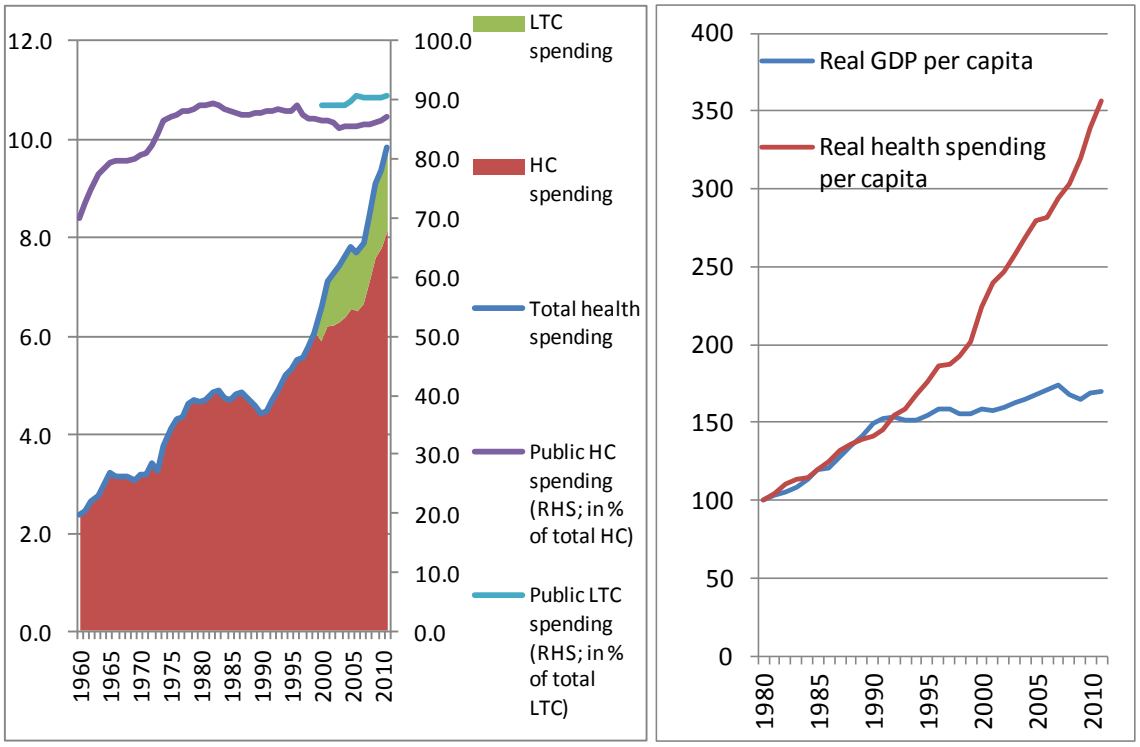
The spending data we use is tightly connected to the coverage of the public insurance system. It differs from the data published by the OECD, which is based on the System of Health Account. Specifically, (i) some spending items covered by the OECD data are not included in our data (e.g., expenses for normal childbirth) and (ii) a large part of long-term care spending in our data is not included in the OECD data (see Appendix I for more details). Our choice is guided by our focus on the long-term sustainability of Japan's health system, rather than cross-country comparisons. In addition, the detailed spending data by age cohort are not available for the OECD data. Nevertheless, our results are not sensitive to the choice of the data source, as discussed in Appendix I.[3]

Health spending in Japan has increased over time as a percent of GDP (the left panel of Figure 3). The right panel of Figure 3 indicates that the rapid increase in the ratio of health spending to GDP during the last two decades reflect rising per-capita spending as well as stagnation of real GDP per capita.

[3] Ii (2012) points out the importance of using the SHA-based health spending data published by the OECD for cross-country comparisons.

Figure 3. Japan: Health Spending, 1960–2011

(In percent of GDP, unless otherwise noted)



Sources: Ministry of Health, Labor, and Welfare; IMF World Economic Outlook database; and IMF staff estimates.

Methodology

We focus on the ratio of health spending to GDP, and decompose the growth rate of the ratio (that is, not the growth rate of health spending in nominal terms). The spending-to-GDP ratio (g_t) is expressed as

$$g_t \equiv \frac{G_t}{Y_t} = \frac{\sum G_{it}}{Y_t} = \left(\frac{G_{bt}/N_{bt}}{Y_t/N_t}\right)\sum_i \left(\frac{G_{it}/N_{it}}{G_{bt}/N_{bt}}\right)\left(\frac{N_{it}}{N_t}\right) = e_t \sum_i h_{it}\, n_{it}$$

where $G_t, Y_t,$ and N_t are health spending in nominal terms, nominal GDP, and the population year t, respectively. G_{it} and N_{it} are health spending and the population for age cohort i. $\frac{G_{bt}}{N_{bt}}$ is the benchmark per capita health spending, i. e. , per capita spending of a benchmark population group. This equation shows that g_t consists of:

- e_t: the benchmark per capita health spending, divided by GDP per capita;
- h_{it}: per capita health spending of cohort i, divided by the benchmark per capita health spending; and
- n_{it}: the population share of cohort i.

With this, the growth rate of g_t can be decomposed into three components:[4]

$$\hat{g}_{t+k} = \underbrace{\Sigma_i w_{it}\hat{n}_{i,t+k}}_{\substack{\text{Ageing}\\ \text{effect}}} + \underbrace{\hat{e}_{t+k}}_{\substack{\text{Excess cost}\\ \text{growth}}} + \underbrace{\Sigma_i w_{it}\hat{h}_{i,t+k}}_{\substack{\text{Spending profile}\\ \text{shift}}}$$

where $w_{it} \equiv h_{it}n_{it}/(\sum h_{it}n_{it})$. Here, a "hat" represents the percent change of a variable, i. e., $\hat{a}_{t+k} = (a_{t+k} - a_t)/a_t$. Thus, the spending ratio to GDP grows when:

- the share of old-age population increases (*ageing*);
- The benchmark per capita health spending rises faster than GDP per capita (*excess cost growth*); and/or
- per capita spending of some age cohorts grows faster than the benchmark per capita spending (*spending profile shift*).

Ageing—an increase in the population share of the elderly—raises the health spending to GDP ratio because an elderly person spends more on health than the young. More specifically, ageing brings up the population share (n_i) of the elderly, while reducing that of the young. This increases the ageing effect component $(\Sigma_i w_{it}\hat{n}_{i,t+k})$ because the weight w_i is larger for the elderly cohort than for the young cohort.

Excess cost growth can result from various non-demographic factors, such as high income elasticity of health care demand; technological advances (which expand the boundary of medically possible treatments and improve the quality of services at a higher cost); the so-called Baumol effect (which refers to rising unit labor costs in the health sector reflecting its relatively low productivity growth); and health policies and institutions (Clements and others, 2012). Excess cost growth will be further decomposed into changes in three subcomponents: (i) the benchmark per capita spending in real terms (x_t); (ii) potential real GDP per capita $(poty_t)$; and (iii) the output gap plus one $(ygap_t)$.[5] The idea is to separate the effect of the output gap on excess cost growth. Specifically,

$$\hat{e}_t = \hat{x}_t - \widehat{poty}_t - \widehat{ygap}_t.$$

By looking at *spending profile shift*, we can examine whether healthy ageing has taken place or not. In other words, if the health status of the elderly improves in tandem with higher life expectancy, their per-capita spending at a given age would be lower. If this is the case, health spending growth would slow down.

[4] The right hand side can differ from the left hand side because of compounding, but the difference is negligible.

[5] This follows because $e_t = \frac{G_{bt}/N_{bt}}{Y_t/N_t} = \frac{G_{bt}/P_t}{N_{bt}}\frac{N_t}{Y_t^*/P_t}\frac{Y_t^*}{Y_t} = x_t\frac{1}{poty_t}\frac{1}{ygap_t}$, where P_t and Y_t^* are GDP deflator and potential GDP, respectively.

We decompose health spending growth during 1970–2011 into the three components. For HC, we examine spending data broken down for 18 age cohorts, with age 0–4 as the youngest age cohort and age 85 and over as the oldest. The breakdown of HC spending by age cohort is not available for years before 1998; for these years, the normalized per capita health spending for each age cohort (h_{it}) is assumed to be unchanged at 1998 levels. For LTC, we examine spending for 6 age cohorts (age $40-64, 65-69, 70-74, 75-80, 80-84$, and 85 and over). For HC, the benchmark per capita health spending (G_{bt}/N_{bt}) is per-capita spending for the working age population (age 20–59). For LTC, it is per-capita spending of the cohort with age 65–69, because per-capita spending of younger age cohorts is very small.

Decomposition results

Table 1 summarizes the result of the decomposition analysis. It tabulates the average growth rate of each component for various sub-periods since 1970. We exclude observations for 2000–02 to take account of the structural break associated with the launch of public long-term care insurance. Data for spending profile shift is not available prior to 1998, for the reason noted above.

Key observations are fourfold. First, health spending growth became substantially positive during the last two decades. The increase in the health spending to GDP ratio from 4.4 percent in 1990 to 9.8 percent in 2011 is equivalent to an average annual growth rate of 3.1 percent. In contrast, the ratio had *decreased* during the 1980s at an annual rate of 0.2 percent; thus, health spending growth picked up discontinuously in the beginning of the 1990s, coinciding with the so-called "lost decades" for Japan. The growth rate of the spending ratio accelerated to 3.5 percent annually during 2003–11.

Second, about two-thirds of the spending ratio's increase during the last two decades originated from the ageing component, which grew by 1.8 percent annually. The ageing effect accelerated from an annual growth rate of 1 percent during the 1970s to 1.9 percent during the last decade, reflecting the rapid pace of population ageing. The standard deviation of the ageing effect is significantly smaller than that of excess cost growth or spending profile shift, reflecting the fact that population growth does not vary much from year to year.

Third, at an annual average rate of 0.9 percent, excess cost growth also contributed significantly to the rapid health spending growth during the last two decades. An interesting observation is that the growth rate of the benchmark per capita spending has been relatively stable during the last three decades, with the average increase over each decade around 2 percent annually. In fact, the pickup in excess cost growth from minus 1.5 percent during the 1980s to 1.3 percent during 2003–11 reflects a decline in per-capita GDP growth during the lost decades (this is consistent with the right panel of Figure 3). The contribution of the

output gap is negligible for all sub-periods; thus, the recent pickup in excess cost growth did not result from a widening of the negative output gap after the global financial crisis.[6]

Fourth, at an annual average growth rate of 0.3 percent, spending profile shift contributed positively to health spending growth from 1998 to present. Albeit small, the positive contribution from spending profile shift for HC for the elderly (age 60 and older) and for LTC means that healthy ageing has not taken place in Japan during this period.

Table 1. Japan: Decomposition of Changes in Health Spending, 1970–2011

(Annual percent change, period average)

	1990-2011 [1/]		1970-79	1980-89	1990-99	2003-11
	Mean	St. dev.	Mean	Mean	Mean	Mean
Ratio of health care and long-term care spending to GDP	**3.1**	**2.8**	**4.4**	**-0.2**	**2.8**	**3.5**
Ageing effect	**1.8**	**0.2**	**1.0**	**1.4**	**1.7**	**1.9**
Health care	1.6	0.2	1.0	1.4	1.7	1.5
Long-term care	4.4	0.6	…	…	…	4.4
Excess cost growth	**0.9**	**2.9**	**3.3**	**-1.5**	**0.6**	**1.3**
Per capita spending of benchmark cohort (real)	1.8	2.1	7.1	2.3	1.6	2.0
Health care	1.8	2.1	7.1	2.3	1.6	2.1
Long-term care	1.6	4.8	…	…	…	1.6
Potential GDP per capita	0.9	0.9	3.9	4.0	1.1	0.6
GDP gap (plus one)	0.0	1.7	-0.2	-0.1	-0.1	0.1
Spending profile shift	**0.3**	**1.2**	…	…	…	**0.2**
Health care	0.4	1.2	…	…	…	0.3
Age 0-19	0.1	0.2	…	…	…	0.2
Age 20-59	0.0	0.0	…	…	…	0.0
Age 60 and over	0.2	1.1	…	…	…	0.1
Long-term care	0.2	1.2	…	…	…	0.2
Memorandum items:						
Ratio of health care spending to GDP	3.0	2.7	4.4	-0.2	2.8	3.1
Ratio of long-term care spending to GDP	5.5	4.5	…	…	…	5.5

Sources: Ministry of Health, Labor, and Welfare; IMF World Economic Outlook database; and IMF staff estimates.

[1/] Excludes observations for 2000–02.

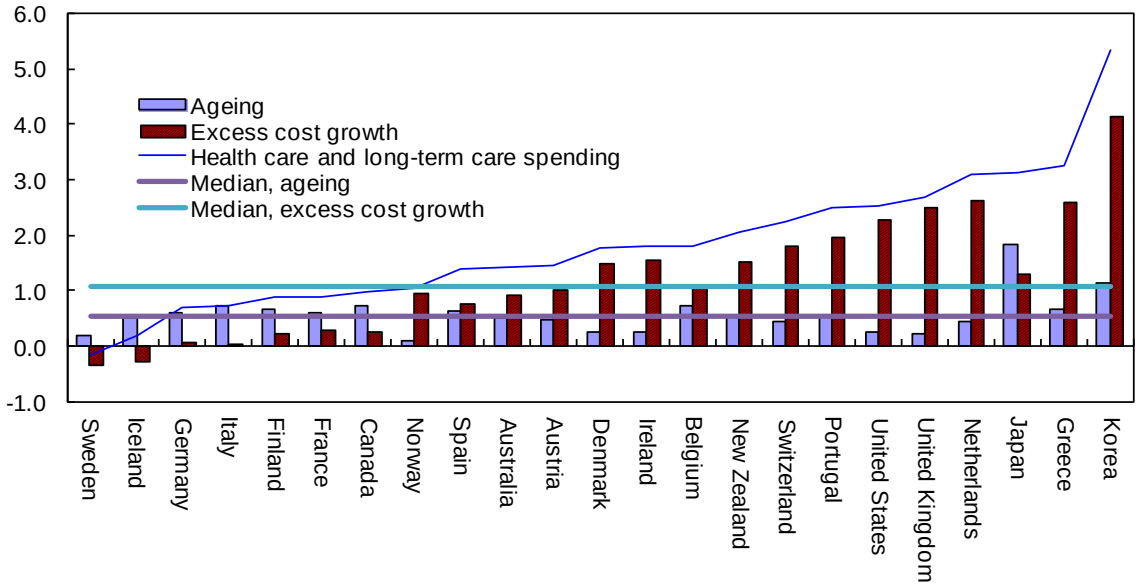
[6] A decline in labor force relative to the population may reduce GDP per capita and hence raise excess cost growth. This effect was negligible during 1990–2010, because the ratio of labor force to the population only marginally declined during this period. This reflects the fact that the declining share of the working age population was offset by rising labor force participation (the ratio of labor force to the working age population). Going forward, if the ratio of labor force to the working age population does not improve, the anticipated decline in the share of the working age population can lead to higher excess cost growth.

Cross-country comparison of health spending decomposition

How do these results compare with other advanced economies? Figure 4 presents a similar decomposition of health spending growth in OECD countries over 1990–2010.[7] Japan's growth rate of the health spending to GDP ratio, at an annual rate of 3.1 percent, was the third highest among these countries (the median increase for OECD countries was 1.8 percent annually). This is a result of the significant ageing effect for Japan—the 1.8 percent annual growth rate of the ageing component was by far the highest among advanced economies (the median increase was only 0.5 percent). In addition, Japan's excess cost growth of 1.3 percent annually (inclusive of spending profile shift) was comparable to its peers (the median increase was 1.1 percent annually).

Figure 4. OECD Countries: Decomposition of Changes in Health Spending [1/]

(Annual percent change, average for 1990–2010)



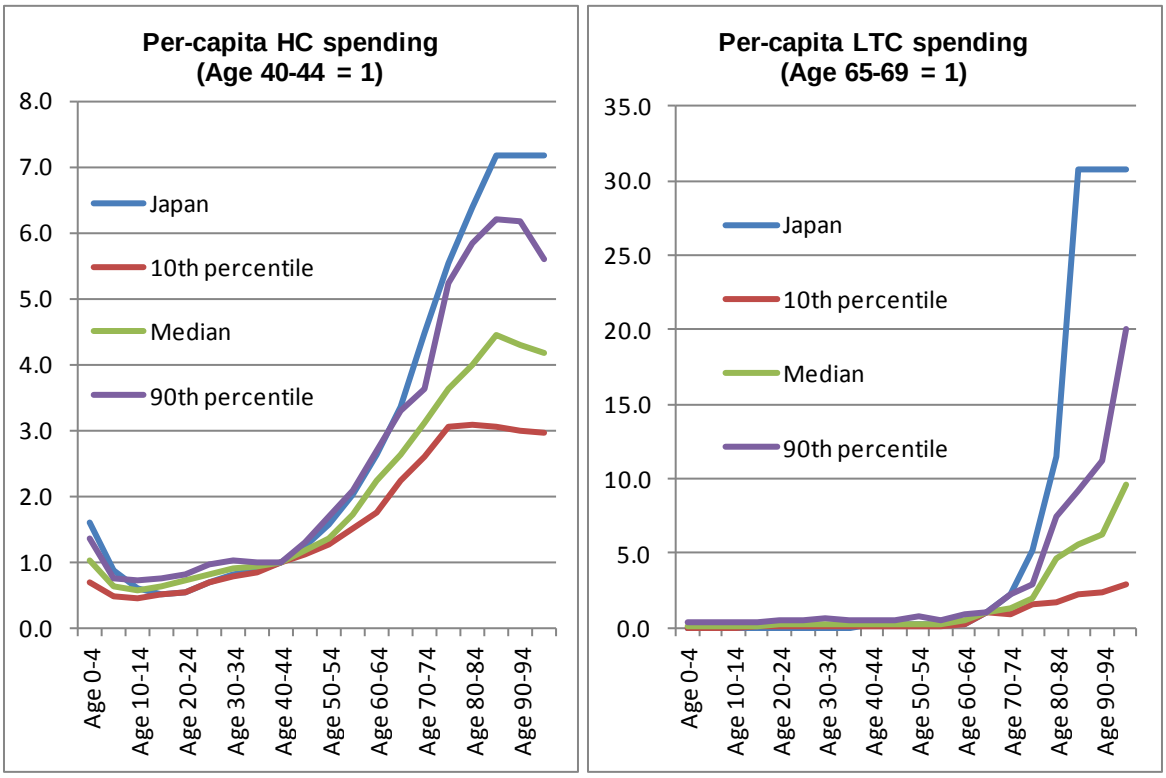
Sources: OECD; IMF, World Economic Outlook database; and IMF staff estimates.
Note: The data for Japan is from Table 1 (public and private spending during 1990–2011 excluding 2000–02). For other countries, OECD data on public spending during 1990–2010 is used.
[1/] Includes LTC spending.

The ageing contribution is substantial in Japan because per-capita health spending by the elderly (relative to that by the young) is much higher than in other countries. Figure 5 illustrates the profile of per-capita spending across age cohorts in OECD countries. In Japan, a person of age 85 years and more spends on health care about 7 times as much as a person of age 40–44 years, and on long-term care about 30 times as much as a person of age 65–69;

[7]For countries other than Japan, the profile of per-capita health spending by age cohort is derived from De La Maisonneuve and Oliveira Martins (2013), which varies by country but does not change over time. Therefore, the impact of spending profile shift is not identified and regarded as part of excess cost growth. This is also the case for Japan for this exercise.

these ratios are the highest among OECD countries. This pattern is also observed for cohorts of age 70 years and older. Because of this, population ageing amplifies health spending growth much more significantly in Japan than in other advanced economies.

Figure 5. OECD Countries: Health Spending by Age Cohort [1/]



Sources: Ministry of Health, Labor, and Welfare; De La Maisonneuve and Oliveira Martins (2013); and IMF staff estimates.

[1/] The data for Japan is public and private spending for 1990–2011. The data for other countries is public spending.

B. Spending and Financing Projections

Spending projection

We project the health spending to GDP ratio using the decomposition framework discussed above. Recall that the spending ratio consists of three components ($g_t = e_t \sum_i h_{it}\, n_{it}$):

(i)the population share by age cohort (n_{it}); (ii)per capita health spending by age cohort, divided by the benchmark per capita spending (h_{it}); and (iii)the benchmark per capita health spending divided by GDP per capita (e_t). For n_{it}, we rely on population projections published by the National Institute of Population and Social Security Research (IPSS), a

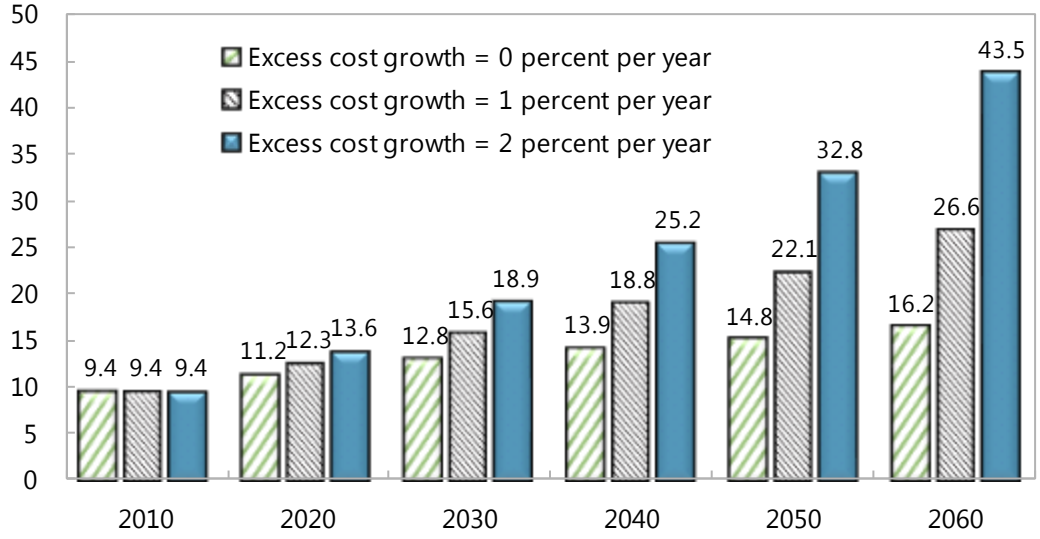
popular source among researchers. The IPSS publishes population projections for 3 variants of fertility and mortality rates (high/medium/low), and we use the one under the medium fertility and mortality rates.[8] For h_{it}, we assume no change throughout the projection period and use the average values for 2009– 11 for each age cohort (later in this subsection, we consider the effect of healthy ageing). For e_t, we consider excess cost growth of 1 percent as a scenario that reflects the historical trend; this would be reasonable also from the cross-country perspective discussed in the previous subsection. In addition, we also consider excess cost growth of 0 percent to illustrate the impact of the ageing effect alone, and 2 percent as an indicative upper bound (Figure 4 shows that 5 out of 23 advanced countries had annual excess cost growth above 2 percent during 1990–2011). Projections are done separately for health care and long-term care, and then aggregated.

Our projection indicates that population aging and continuation of excess cost growth would substantially increase health spending (Figure 6). As shown by the scenario with zero excess cost growth, the ageing effect alone will bring up health spending from 9½ percent of GDP in 2010 to 13 percent of GDP in 2030. The scenario with annual excess cost growth of 1 percent shows that, if excess cost growth continues at the trend rate observed during the last two decades, health spending will balloon to 15½ percent of GDP in 2030, a 6 percentage point increase between 2010 and 2030. As a worst-case scenario, if annual excess cost growth is 2 percent, the ratio will double to 19 percent by 2030. If 1 percent annual excess cost growth continues through 2060, spending will skyrocket to more than a quarter of GDP. The uncertainty surrounding spending projection increases dramatically as the time horizon is extended as far as to 2060.

[8] The low, medium, and high variants of long-term fertility rates assume 1.12, 1.35, and 1.60, respectively, while the observed fertility rate was 1.39 in 2010. The low variant of the mortality rate corresponds to life expectancy of 82.65 years for men and 89.39 years for women in 2030, the medium variant to 81.95 years for men and 88.68 years for women, and the high variant to 81.25 for men and 87.97 years for women. These compare to the life expectancy in 2010 of 79.64 years for men and 86.39 years for women.

Figure 6. Japan: Projected Health Spending, 2010–60 [1/]

(In percent of GDP)

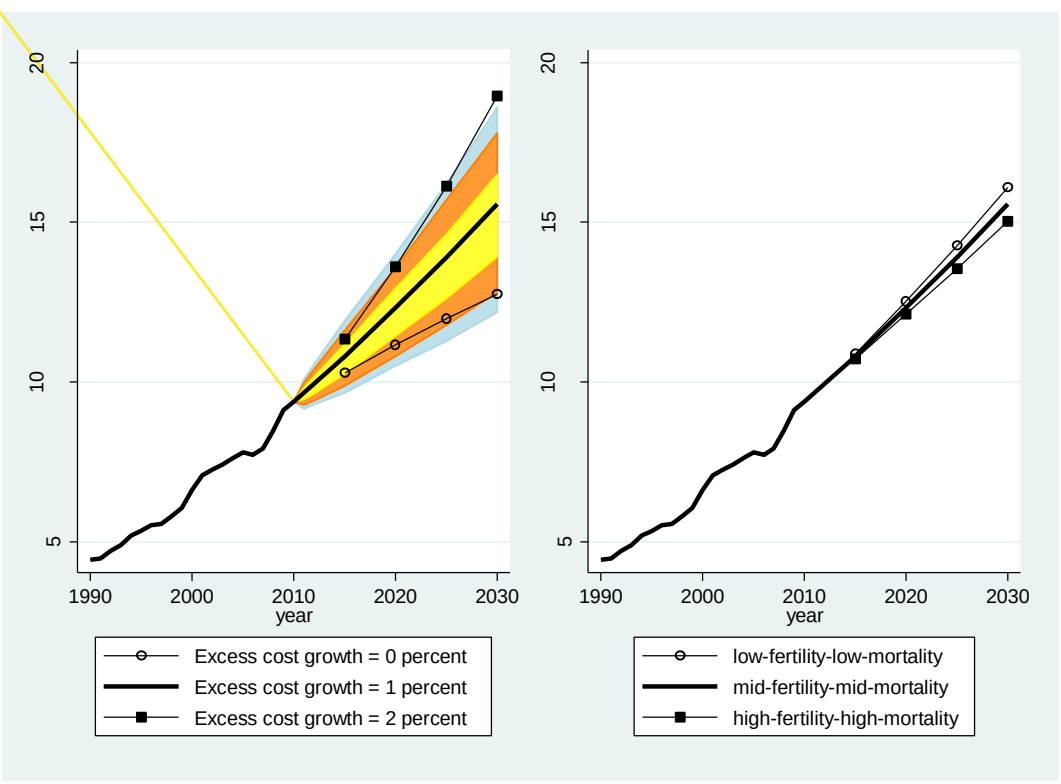


Sources: Ministry of Health, Labor, and Welfare; the National Institute of Population and Social Security Research; and IMF staff estimates.

[1/] Includes LTC spending.

A statistical analysis indicates that the health spending to GDP ratio in 2030 likely falls between the two scenarios with no excess cost growth and with 2 percent annual excess cost growth. The left panel of Figure 7 illustrates a fan chart for the spending to GDP ratio through 2030 based on an assumption that annual excess cost growth follows a white noise process with the mean and the standard deviation observed during 1990–2011 (excluding observations for 2000–02; see Table 1) and the population projection under the medium variant of fertility and mortality rates. The fan chart shows that, in 2030, the lower bound of the spending ratio's 90 percent confidence interval roughly coincides with the projection under no excess cost growth; and the upper bound of the confidence interval with the projection under 2 percent excess cost growth. Additionally, our spending projection does not seem sensitive to assumptions on fertility and mortality rates: the right panel of Figure 7 shows that the projected spending ratio in 2030 under the low-fertility-and-low-mortality case differs only by 1 percentage point from that under the high-fertility-and-high-mortality case.

Figure 7. Fan Chart of Health Spending to GDP Ratio and Sensitivity to Population Dynamics [1/]
(In percent of GDP)

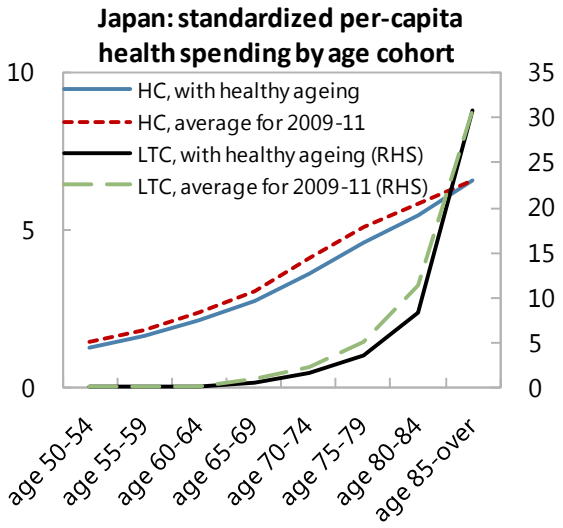


Sources: Ministry of Health, Labor, and Welfare; the National Institute of Population and Social Security Research; and IMF staff estimates.
[1/] Includes LTC spending. In the fan chart (left panel), the yellow area shows the range between the 25 percentile and 75 percentile, the orange area between the 10 percentile and 90 percent, and the light blue area between the 5 percentile and 95 percentile.

Healthy ageing could slow down health spending growth. Between 2010 and 2030, Japanese life expectancy is expected to increase by 2.3 years, according to the population projection by the IPSS (using the medium variant mortality rate). If the health status of the elderly improves in tandem with higher life expectancy, their per-capita spending at a given age would be lower. To gauge the effect of such healthy ageing, we consider a case where the per-capita spending profile by age would shift concomitantly with the increase in life expectancy, as depicted in the left panel of Figure 8. The result presented in the right panel of Figure 8 shows that healthy ageing could trim about 1 percentage point of GDP from the projected increase in health spending over 2010–30.[9]

[9] In a similar vein, Tajika and Kikuchi (2014) analyze the effect on health spending of a decline in the mortality rate and improvements in health status of the elderly, and estimate that these will reduce per-capita health spending in 2060 by 3.7 percent and 13.9 percent, respectively.

Figure 8. Effect of Healthy Ageing



Effect of Healthy Ageing on Health Spending 1/ (Change between 2010 and 2030, in percentage points of GDP)

	With healthy ageing	No healthy ageing
Excess cost growth = 0 percent	2.5	3.4
Excess cost growth = 1 percent	5.1	6.2
Excess cost growth = 2 percent	8.2	9.6

1/ Includes LTC spending.

Sources: Ministry of Health, Labor, and Welfare; the National Institute of Population and Social Security Research; and IMF staff estimates.

Economic growth can also affect the health spending to GDP ratio in the long run. In the analysis above, we focused on excess cost growth, assuming a stable relationship between health spending and economic growth. We take this approach to avoid pinning down the long-run GDP growth rate in light of large forecasting errors. Nevertheless, the fact that health spending growth was much higher than economic growth in the last two decades (see Table 1 and the left panel of Figure 3) warrants discussion of an illustrative scenario where health spending is "decoupled" from economic growth. The latest government projection envisages a real GDP growth rate of about 2 percent per year for 2013–2022 under a scenario with growth-enhancing reforms (the "reform scenario"), while also presenting a pessimistic scenario with a real GDP growth rate of about 1 percent per year (the "pessimistic scenario").[10] Assuming the annual growth rate of the benchmark per capita health spending in real terms at 2 percent as observed during the last decades (see Table 1), and incorporating the average population growth rate of -0.5 percent per year during 2010–30 (under the mid-fertility-mid-mortality assumption), the GDP growth rate for the reform scenario would imply excess cost growth of -0.5 percent per year, which corresponds to an increase in health spending by 2.2 percentage points of GDP over 2010–30. Similarly, the pessimistic scenario would be equivalent to excess cost growth of 0.5 percent per year, which implies an increase of health spending by 4.7 percentage points of GDP over 2010–30.

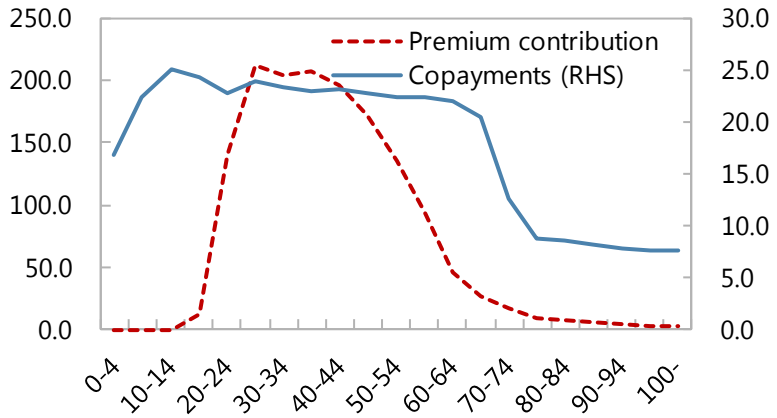
[10] Produced by the Cabinet Office, Government of Japan. See http://www5.cao.go.jp/keizai2/keizai-syakai/shisan.html.

Financing mix projection

Health spending is financed by premium contributions, patient copayments (out-of-pocket spending), and government transfers. In 2010, premium contributions accounted for 48 percent of health spending (48 percent for HC and 45 percent for LTC), and patient copayments for 13 percent (13 percent for HC and 10 percent for LTC). The reminder, 39 percent of health spending, is financed by government transfers (by both the central and local governments).

The working age population carries a heavier burden of premium contributions and copayments than the elderly. Figure 9 depicts premium contributions and copayments for HC spending by age cohort in 2010, as a percent of HC spending for each cohort.[11] Since Japan's health insurance system is built on a social insurance principle, the working age population financially supports the elderly who are vulnerable to financial and health risks. Reflecting this, age-specific premium contributions for working age groups (aged between 20 and 55) exceed their HC spending. The ratio of contributions to HC spending declines with age as HC spending becomes disproportionately higher as individuals get older. With higher HC spending at older age, the ratio reaches even below 10 percent for those aged 75 years and older. Likewise, the ratio of copayments to spending is disproportionately higher for the young: the ratio for HC spending is above 20 percent for people of age 5–69 years and below 10 percent for age 70 years and more.

Figure 9. Japan: Premium Contributions and Patient Copayments for Health Care by Age Cohort, 2010
(In percent of health care spending for each age cohort)



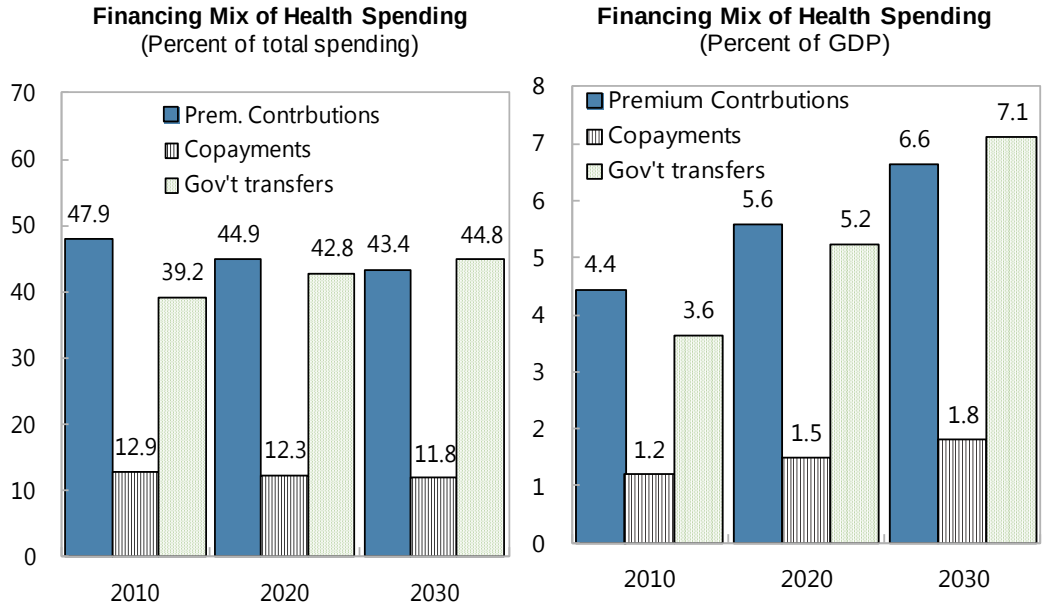
Source: Ministry of Health, Labor, and Welfare.

Taking this profile into account, we project the long-term financing mix of health spending. We focus on the scenario with annual excess cost growth of 1 percent. To project contribution payments and copayments for HC spending, we apply the profile of age-specific

[11] The source is http://www.mhlw.go.jp/file/06-Seisakujouhou-12400000-Hokenkyoku/nenrei_h22.pdf.

premium contributions in percent of spending and copayment rates in 2010 (as depicted in Figure 9). For LTC spending, we project the financing mix based on the statutory splitting rule (45 percent by premium contributions, 10 percent by copayments, and 45 percent by government transfers). Government transfers are then computed as the residual (total HC and LTC spending minus the sum of premium contributions and copayments). Figure 10 shows the projected financing mix through 2030 in percent of total spending as well as in percent of GDP.

Figure 10. Japan: Projected Financing Mix of Health Spending, 2010–30 [1/]



Sources: Ministry of Health, Labor, and Welfare; the National Institute of Population and Social Security Research; and IMF staff estimates.

[1/] Includes LTC spending.

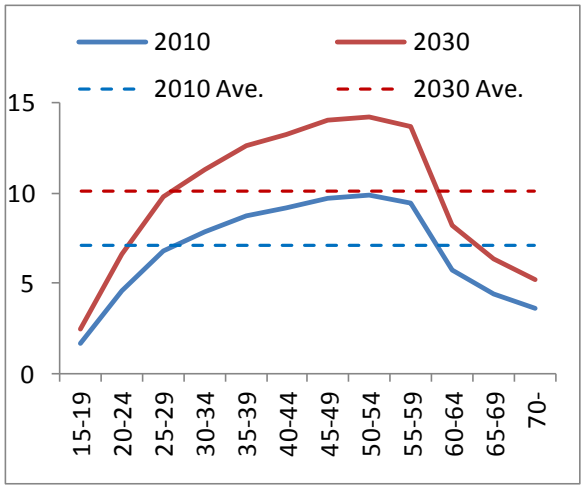
Three observations are worth highlighting. First, the share of health spending financed by copayments is projected to decline marginally from 13 percent in 2010 to 12 percent in 2030. This reflects population ageing, that is, the rising share of the elderly whose effective copayment rate is lower. As a percent of GDP, copayments will increase by 0.6 percentage points over 2010–30 since assumed excess cost growth raises the spending ratio to GDP.

Second, premium contributions are projected to increase as a percent of GDP, from 4.4 percent in 2010 to 6.6 percent in 2030.[12] For HC, this occurs mainly because excess cost growth raises HC spending regardless of age cohort, thereby bringing up premium contributions relative to GDP. For LTC, premium contributions will increase in parallel with total spending owing to their fixed financing share (45 percent). This will result in a

[12] Ueda and others (2011) also analyze the long-run financing mix, taking account of the institutional setting on how premium contributions are determined, especially in consideration of burden sharing for HC spending by the elderly. Their projection envisages a higher level of premium contributions than ours.

substantial increase in the *contribution rate*, i.e., premium contributions as a percent of labor earnings (for the working age population) or pension benefits (for the retirees).[13] For HC, the increase in the contribution rate will be disproportionately higher for the working-age population, whose contributions will increase from 3¾ percent of labor income in 2010 to 12 percent in 2030 (Figure 11). Despite this, premium contributions as a percent of health spending are projected to decrease from 48 percent in 2010 to 43 percent in 2030. This is mainly because population ageing reduces the share of the working age population who contributes much more than retirees.

Figure 11. Japan: Premium Contributions for Health Care by Age Cohort, 2010–30
(In percent of earnings or pension benefits)



Sources: Ministry of Health, Labor, and Welfare; the National Institute of Population and Social Security Research; and IMF staff estimates.

Third, government transfers need to increase because higher premium contributions and copayments fall short of the overall spending increase. Government transfers are projected to increase from 3.6 percent of GDP in 2010 to 7.1 percent of GDP in 2030. To put this figure in perspective, the "financing gap" of 3.5 percentage points of GDP by 2030 is equivalent to raising the consumption tax rate by 7 percentage points.

Comparison of spending projections with other studies

To conclude this section, we compare our projections with those made by the government and other researchers (Table 2). Key observations are as follows.

- The latest government projection envisages an increase of 4–5 percentage points of GDP for public health spending over the next two decades. Spending is larger in the reform scenario than in the no-reform scenario because the former incorporates

[13] The detailed methodology is described in Appendix II.

reorganization of the health care system, which aims to reduce the average length of hospital stays by increasing the number of doctors and nurses. These projections are more pessimistic than our projection with no excess cost growth, but more optimistic than the one with 1 percent excess cost growth.

- The IMF Fiscal Monitor (IMF, 2014) projects public health spending to rise by about 2 percentage points of GDP over 2010–30. This is more optimistic than our projections mainly for two reasons. First, the Fiscal Monitor projection envisages zero excess cost growth for Japan, since it assumes convergence of the long-run excess cost growth toward the average during the last *three* decades (as discussed above, Japan's average excess cost growth was about zero during this period). Second, the Fiscal Monitor projection envisages healthy ageing, resulting in a smaller ageing effect than our projections. Thus, the Fiscal Monitor projection is broadly in line with our scenario with healthy ageing and zero excess cost growth.

- The projection by the OECD (De La Maisonneuve and Oliveira Martins, 2013) envisages public health spending to rise by 2–3 percentage points of GDP for 2010–30 and 3–8 percentage points for 2010–60. Their projection is more optimistic than ours mainly because of a smaller ageing effect.

- The long-run projections by the Fiscal System Council (2014a) and Ueda et al. (2011, 2014) are more pessimistic than our projection with no excess cost growth, reflecting the increasing trend of utilizing in-house long-term care services and labor cost, but more optimistic than the one with 1 percent excess cost growth.[14]

[14] The Fiscal System Council uses the methodology of Ueda et al. (2014). (https://www.mof.go.jp/about_mof/councils/fiscal_system_council/sub-of_fiscal_system/proceedings/material/zaiseia260428.html).

Table 2. Japan: Comparison of Projected Increases in Health Spending, 2010–60

(In percentage points of GDP)

		2010-30			2010-60		
	Definition of spending	Total	Ageing / demographic	Other	Total	Ageing / demographic	Other
Our projection							
Without healthy ageing							
Excess cost growth = 0%	HC + LTC, public + private	3.4	3.4	0.0	6.8	6.8	0.0
Excess cost growth = 1%	HC + LTC, public + private	6.2	3.4	2.8	17.2	6.8	10.4
Excess cost growth = 2%	HC + LTC, public + private	9.6	3.4	6.2	34.1	6.8	27.3
Excess cost growth = 1%	HC + LTC, public only	5.6	3.1	2.5	15.6	6.2	9.4
With healthy ageing							
Excess cost growth = 0%	HC + LTC, public + private	2.5	2.5	0.0	…	…	…
Excess cost growth = 1%	HC + LTC, public + private	5.1	2.5	2.6	…	…	…
Excess cost growth = 2%	HC + LTC, public + private	8.2	2.5	5.7	…	…	…
The government projection, March 2012 1/							
No reform scenario	HC + LTC, public only	4.2	…	…	…	…	…
Reform scenario	HC + LTC, public only	5.1	…	…	…	…	…
Fiscal monitor (IMF, 2014) 2/	HC + LTC, public only	2.2	2.2	0.0	…	…	…
OECD (De La Maisonneuve and Oliveira Martins, 2013) 2/							
Cost pressure scenario	HC + LTC, public only	2.8	0.8	2.0	7.7	1.1	6.6
Cost containment scenario	HC + LTC, public only	2.1	0.8	1.3	3.3	1.1	2.2
Ueda and others (2011)	HC + LTC, public + private	3.9	…	…	8.8	…	…
Ueda and others (2014)	HC + LTC, public + private	4.1	…	…	8.6	…	…
	HC + LTC, public only	3.7	…	…	7.9	…	…

Sources: references cited; and IMF staff estimates.

1/ http://www.mhlw.go.jp/seisakunitsuite/bunya/hokabunya/shakaihoshou/dl/shouraisuikei.pdf. Spending projection is available only for 2015, 2020, and 2025. Projection for 2030 is calculated by authors with linear extrapolation.

2/ Uses OECD spending data based on SHA. Computed by the authors from Statistical Table 12a of IMF (2014), which shows an increase in Japan's public health spending by 1.8 percentage points of GDP during 2014–30.

III. Reform Options

A. Options to Contain Health Spending Growth

Policy options to curb health spending growth are classified into three broad categories: macro-level controls to cap spending or to regulate the price and quantity of services; micro-level reforms to improve the functioning of the health system to increase spending efficiency; and demand-side reforms to curb health care demand by increasing cost sharing by patients (Clements and others, 2012).

In this subsection, we discuss possible macro- and micro-level options for Japan. As a macro-level control, budget caps and supply constraints can be effective, albeit with caveats. Micro-level reforms such as introducing gatekeepers and reforming provider payment arrangements can prevent inefficient use of health care resources. Other options such as expanding the use of generic medicines and promoting prevention of lifestyle related diseases can also generate savings. Our analysis builds on the current policy framework in Japan, the institutional indicators published by OECD (Joumard and others, 2010; see Appendix III for details), as well as existing studies such as OECD (2009), McKinsey (2009), Hashimoto and others (2011), Shibuya and others (2011), and the 2013 report by the National Council on Social Security System Reform ("the 2013 National Council Report").[15] Demand-side reforms will be discussed in the context of financing options in the next subsection.

Budget caps

Introducing budget caps for hospitals or health care providers can help contain health spending. Budget caps are a typical macro-level control, and refer to limits on overall health care spending for hospitals and practitioners. Case studies indicate that they were used to contain cost increases in many successful reform episodes (Clements and others, 2012). Budget caps, however, must be designed carefully. They are a blunt instrument to contain costs and can limit access to health care, as evidenced by longer waiting times for elective surgery in Canada, Sweden, and the United Kingdom during the period of expenditure consolidation (Clements and others, 2012). Health care providers in Japan are currently not subject to a budget cap. Reflecting this, the OECD indicator for the stringency of the budget constraint is 0 for Japan (the indicator ranges between 0 and 6 with the score of 6 representing the most stringent), while the OECD average is 2.0.

Introducing budget caps would be challenging in Japan. While strict budget caps tend to be implemented in countries where public health providers play a predominant role (such as Italy and Sweden), public hospitals account for only about 30 percent of total hospital beds in Japan. Nevertheless, health budget targets exist in countries where health services are mainly provided privately; in these counties, budget overshooting is possible, but it triggers cost-containment measures (Paris and others, 2010).[16] Thus, there would be scope for Japan to draw from successful practices in other advanced countries.

[15] http://www.kantei.go.jp/jp/singi/kokuminkaigi/pdf/houkokusyo.pdf.

[16] Such countries are Australia, Belgium, France, Germany, and the Netherlands.

Supply constraints

Supply constraints, another type of macro-level controls, aim to regulate the volume of health care supply including in areas such as workforce and medical facilities and equipments. In Japan, supply constraints are imposed on both workforce and facilities, but they are less effective for the latter (Table 3):

- The government controls the health care workforce with enrollment quotas for medical schools.[17] Reflecting this, the number of doctors per capita is lower in Japan than in other OECD countries.

- It also regulates the number of hospital beds by restricting installation of new units beyond benchmarks set at regional levels. Despite this, Japan has the highest number of beds per capita among OECD countries. Since hospitals are granted discretion over the purchase of medical equipments (Hashimoto and others, 2011), high-tech medical equipments are the most available in Japan on a per-capita basis.

Table 3. OECD Countries: Health Care System Characteristics, 2011 or Latest Year Available

	Japan	OECD median	Japan's ranking	No. of countries
Physicians per 1,000 population (head counts)	2.2	3.3	29th highest	34
Total hospital beds per 1,000 population	13.4	4.2	1st highest	34
Curative (acute) care beds per 1,000 population	8.0	3.0	1st highest	34
MRI units, total, per million population	46.9	10.7	1st highest	32
CT scanners, total, per million population	101.3	16.1	1st highest	32
Doctors consultations, number per capita	13.1	6.6	2nd highest	34
Average length of stay at hospitals, days	18.2	7.2	1st highest	34

Source: OECD.

Redesigning supply constraints, especially targeted at the number of beds per capita and aimed to rationalize the abundance of medical equipments, may help contain health spending growth in Japan. According to the OECD indicator that measures the degree of regulation of health workforce and equipment, Japan's score is 1.5, lower than the average of 2.9 (the indicator ranges between 0 and 6 with the score of 6 representing the highest degree), suggesting potential room for additional supply constraints. The number of beds per capita would be an important target to contain per-capita health spending by the elderly, because these two indicators are positively correlated at prefecture levels. Japan could learn from the experience in Canada and Finland, where reduction of the number of beds helped contain health care spending. Nevertheless, supply constraints need to be carefully designed since

[17] The nationwide quota was reduced from 8,280 in 1981 to 7,625 by 2003 and was frozen at this level until 2007. It has been gradually raised since 2008.

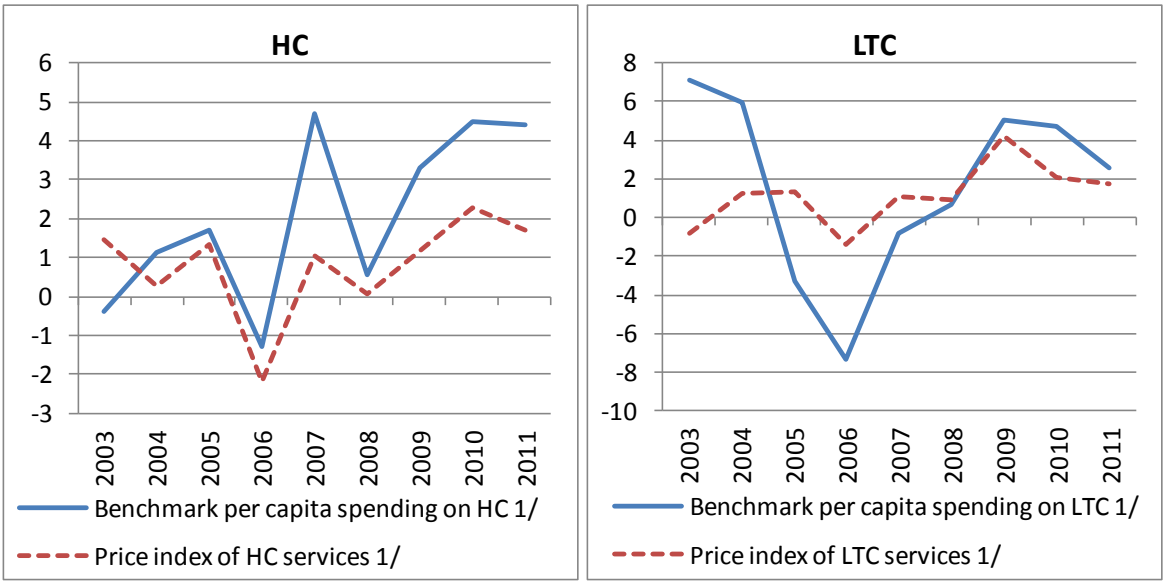
they can be less effective when providers can circumvent or offset the effect of controls (Clements and others, 2012).

Price controls

Price controls, currently a primary lever for the Japanese government to control health spending, need to be designed carefully. The government determines prices of services covered by health and long-term care insurance, with prices adjusted every two years for health care and every three years for long-term care. The government restrained the price increase during 2003–08, and succeeded in reining in health spending especially in 2006 (Figure 12). Nevertheless, for HC, the price control measures in 2006 and 2008 were followed by a pickup in spending in the subsequent year. This seems consistent with a hypothesis that price controls are circumvented by service providers' reactions to increase service volumes or direct patients to higher-cost services (Docteur and Oxley, 2003). Also, at times, price adjustments across HC services resulted in unintended consequences and exacerbated distortions in the health system (the 2013 National Council Report). In this context, price controls should be carefully designed and can be complemented by other options.

Figure 12. Japan: Price Index of HC and LTC Services and Per-capita Health Spending, 2003–11

(In annual percentage change)



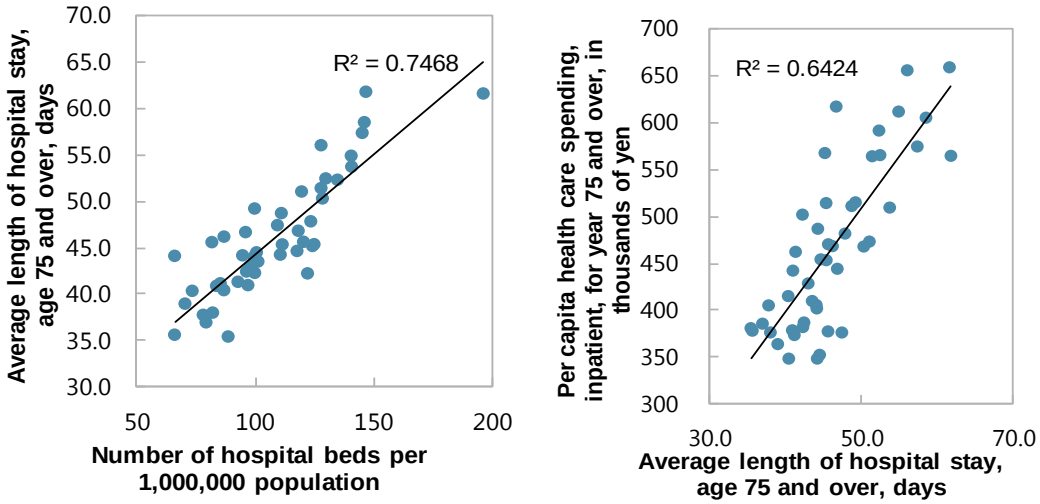
Sources: Ministry of Health, Labor, and Welfare; and IMF staff estimates.
1/ Converted to real terms using the GDP deflator.

Reforming provider payment arrangements

A micro-level reform of provider payment arrangements could help contain health spending by correcting incentive problems. Specifically, shifting from a fee-for-service arrangement (providers are paid according to the volume of services provided to patients) to a Diagnostic-Related Group (DRG) arrangement (providers are paid a fixed amount based on the diagnostics of a patient, regardless of the volume of services provided) would reduce supplier-induced health care demand and hence help contain spending growth.

With a fee-for-service arrangement used for compensating doctors and limited use of DRG-type arrangements for hospitals, Japan's system tends to encourage supplier-induced demand (Joumard and others, 2010). According to the OECD indicator to measure the strength of providers' incentives to increase the volume of care, Japan's score is 5.7, much higher than the OECD average of 3.1. This may explain, at least partially, the fact that doctor consultations per capita and the average length of hospital stay in Japan are very high compared with other advanced economies (Table 3). Moreover, the positive correlation between the average length of hospital stay and the number of beds per capita at prefecture levels (Figure 13, left panel) may reflect hospitals' desire to minimize unoccupied beds. Given that the average length of hospital stay is positively associated with per-capita health spending of the elderly at prefecture levels (Figure 13, right panel),[18] mitigating the incentive problem could be effective in reining in health spending growth.

Figure 13. Japan: Per-capita HC Spending by the Elderly, Their Length of Hospital Stay, and the Number of Beds Per-capita, by Prefecture [1/]



Source: Ministry of Health, Labor, and Welfare.
[1/] Scatter plots for 47 prefectures.

[18] The Fiscal System Council (2014b) also points out that prefectures with the larger number of beds per-capita tend to have higher per capita health spending.

Introducing gatekeeping and improving public management

As a micro-level reform, introducing gatekeeping arrangements could help contain spending without undermining health outcomes in Japan. Gatekeeping requires patients to register with a general practitioner and/or to receive referral from a general practitioner to access specialist care (Joumard and others, 2010). It can save healthcare costs by preventing unnecessary treatments. While 20 out of 29 OECD countries use gatekeeping arrangements at least to some extent, there is no such arrangement in Japan as patients are guaranteed "free access": they can choose hospitals and health care providers regardless of locations and specializations, and are not required to obtain referrals from general practitioners to receive secondary- or tertiary-level care.[19] The need for gatekeeping is emphasized in the 2013 National Council Report.

More broadly, there is room to improve public management and coordination of health care resources. The high share of private hospitals and providers, relatively lax supply controls, and the limited effectiveness of price controls seem to have led to suboptimal allocations of health care resources. For example, the share of hospitals that can offer highly acute care was about 40 percent in 2010, much higher than the range considered as ideal by the government (under 20 percent); a large number of long-term care beds still remain in hospitals, not in long-term care facilities as was intended when the long-term care insurance was launched (OECD, 2009); and a supply shortage of in-home care induces provision of long-term care at hospitals. Also, supply and demand mismatches exist across doctor specialties and regions (Shibuya and others, 2011; the 2013 National Council Report). While medium-term planning and target setting by prefecture governments started in 2006, it has not led to a dramatic decline in the average length of hospital stay, and the mismatches still persist. As proposed by the 2013 National Council Report and Shibuya and others (2011), a possible option is to strengthen the regulatory power of prefecture governments to monitor and coordinate resource allocations.

Other options

Policies to promote the use of generic medicines can save health care cost. Japan's utilization of generic medicines was 24 percent in 2009, while it was 89 percent in the United States, 75 percent in Germany, and 71 percent in the United Kingdom (Sheppard, 2010). Further incentivizing and advertizing the use of generic drugs should be pursued.

Prevention of lifestyle related diseases can promote healthy ageing. Major risk factors for non-communicable diseases, such as high blood pressure, smoking, and high concentrations of blood glucose, can be further reduced for the Japanese (Ikeda and others, 2011). The ongoing public campaign for prevention of lifestyle related diseases can be

[19] To promote the usage of local practitioners, some large hospitals ask a patient who goes there without a reference letter from his/her local clinic to pay extra fees. The government is examining to make this additional payment mandatory and more expensive.

supplemented by greater use of monetary incentives, such as higher tobacco taxes (OECD, 2009).

B. Options to Raise Copayments and Premium Contributions

We discuss below raising patient copayments and premium contributions as options to finance higher health spending, taking account of their implications for economic efficiency and equity.[20]

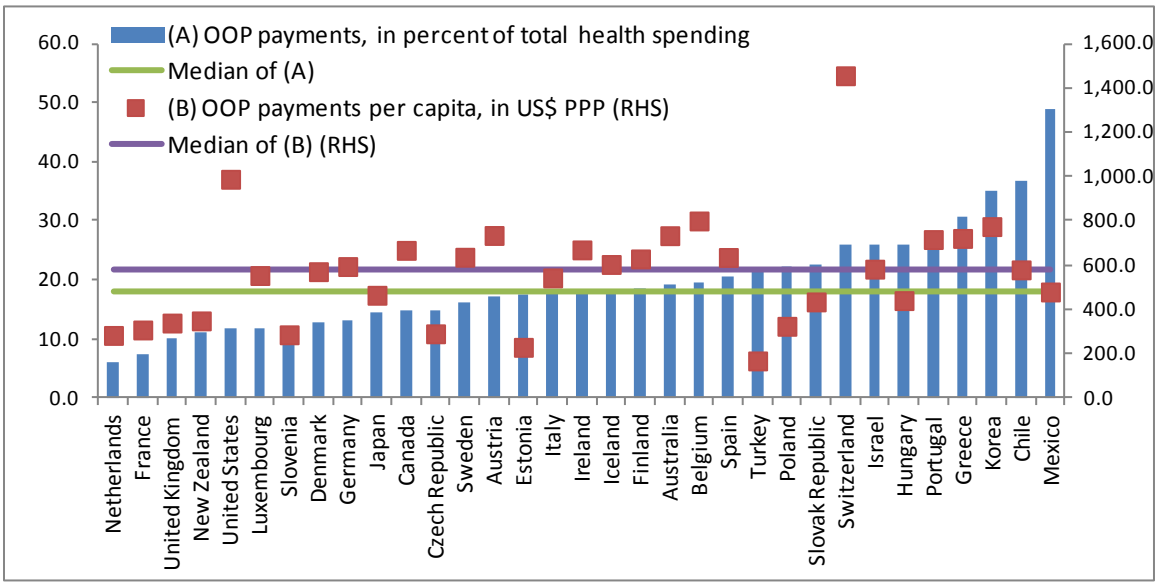
Raising patient copayments

Raising copayment rates would contain *public* health spending while reducing excess demand for health care and long-term care. Compared with other OECD countries, the copayments in Japan are relatively low both in levels and as percent of total spending (Figure 14), indicating potential room to increase copayment rates. Research indicates that higher copayment rates are also expected to discourage unnecessary demand, and thus help to contain total health spending.[21] Increasing copayments, however, should be designed carefully since it can weaken the effectiveness of public health insurance to protect against health risks and limit health care access by the poor (OECD, 2009). An option to address this is to further differentiate copayment rates based on income levels.

[20] Reviewing the scope of insurance coverage, i.e., the range of HC and LTC services covered by public insurance, may also be considered as an option.

[21] Shigeoka (2013) estimates that out-of-pocket medical spending drops by about 70 percent when a patient turns 70 years old (because the copayment rate decreases from 30 percent to 10 percent), and this reduction drives up outpatient visits and inpatient admissions by 10 percent and 8 percent, respectively. He does not find that the increases in health care utilization improve health outcomes such as mortality.

Figure 14. OECD Countries: Out of Pocket Payments, 2011 or Latest Year Available [1/]



Source: OECD.
[1/] Including for LTC.

Raising premium contributions

Raising premium contributions have benefits and costs. As a benefit, the link between contributions and income can be tightened to ameliorate negative effects of health care reforms on income inequality. There is scope to strengthen the link in Japan; for example, ceilings on individual premium contributions can be increased, as proposed by the 2013 National Council Report. As a major disadvantage, higher premium contributions could increase the labor tax wedge (the sum of personal income tax and employee plus employer social security contributions), thereby reducing labor supply and demand. This can be mitigated by introducing a progressive contribution (or payroll tax) schedule (i.e., the contribution rate rises as income rises), which can reduce tax wedges for low-skilled workers where distortions are the largest (IMF, 2012).

Premium contributions can also be increased by reducing inequality in contribution payments. Among others, the current system exempts dependent spouses of employees covered by employment-based HC insurance programs (Kyokai Kempo, Kumiai Kempo, and Mutual Aid Associations; see Box 1) from paying health care insurance premiums if their annual earnings are below 1.3 million yen (approximately US$13,000), while dependent spouses of self-employed workers (covered by the NHIP) are required to pay contributions. This also creates work disincentives, providing the exempted spouses with a strong incentive

to work part-time and keep their labor earnings below the threshold.[22] More generally, inequality in the contribution rates across health care insurers should be reduced, given that the average contribution rate for the NHIP is three times as high as that for employment-based Kumiai Kempo insurance programs (Ikegami and others, 2011).

C. Estimated Fiscal Savings

Table 4 summarizes estimates of fiscal savings from the reform options discussed above.

- Introducing budget caps, strengthening supply controls, and introducing gatekeepers could contain health spending by about 0.7 percentage points of GDP by 2030. This is based on a cross-country econometric model adopted by Clements and others (2012), which regresses excess cost growth on the OECD indicators of health system characteristics.[23] Due to possible estimation errors, these estimates should be regarded as highly illustrative.

- Incentivizing use of generic drugs and promoting prevention of lifestyle related diseases could contain health spending by about 0.4 percentage points of GDP by 2030. This is based on estimates by the government.

- Raising health care copayment rates for patients aged 70 and older and those for long-term care by 5 percentage points in effective terms would generate fiscal savings of 0.6 percentage points of GDP by 2030 (this estimate does not factor in the possible dampening effects of higher copayments on service utilization). Collecting premium contributions from dependent spouses who currently are exempted from paying them could add revenue of 0.3 percent of GDP by 2030.

[22] Winding down this exemption should be pursued in tandem with reforming a similar preferential treatment on pension contributions. Kashiwase, Nozaki, and Tokuoka (2012) discuss collecting pension contributions from dependent spouses.

[23] The saving for reforming provider payment arrangements cannot be calculated because the coefficient has the wrong sign. Price controls in Japan is slightly more stringent than in other OECD countries.

Table 4. Japan: Estimated Fiscal Savings from Reform Options
(In percentage points of GDP)

	Estimated savings in 2030
Options to contain health spending growth	
Introduce budget caps	0.2
Strengthen supply constraints	0.2
Introduce gatekeeping	0.3
Incentivize use of generic drugs	0.3
Promote prevention of lifestyle related diseases	0.1
Options to raise copayments and premium contributions	
Increase copayment rates by 5 percent for elderly 1/	0.6
Collect premiums from depndent spouses 2/	0.3
Total	1.9

Sources: Ministry of Health, Labor, and Welfare; Clements and others, 2012; Joumard and others, 2010; and IMF staff estimates.
1/ For health care patients with age of 70 years and more and all long-term care users.
2/ For those who are currently exempted from premium payments.

IV. CONCLUDING REMARKS

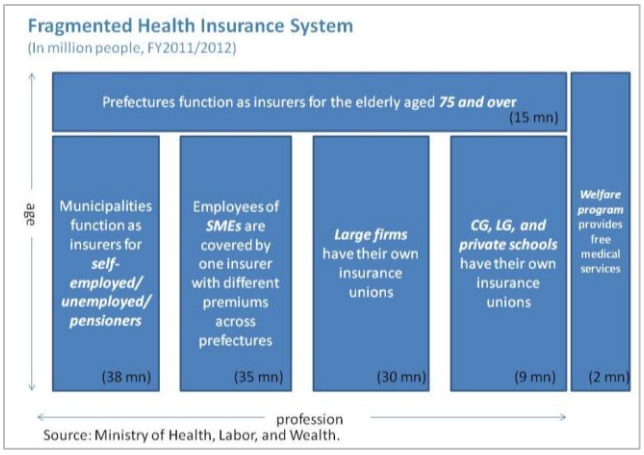
In this paper, we analyzed Japan's health spending in the past and in the future, and discussed possible reform options to keep spending growth at bay. Our findings are threefold. First, two-thirds of the spending increase over the last two decades resulted from population ageing, and the rest from excess cost growth. Second, health spending is likely to increase substantially over the long run. The ageing effect alone will raise health spending from 9½ percent of GDP in 2010 to 13 percent of GDP in 2030. In addition, if excess cost growth continues at the trend rate observed during the last two decades, health spending will balloon to 15½ percent of GDP in 2030. Third, there is scope to introduce micro-level and macro-level reforms in Japan that can potentially contain spending. On the financing side, while raising copayments and premium contributions can contain government transfers to the health system, these options should be designed to preserve equity.

Our projections for health spending and the financing mix entail large uncertainty, especially because the source of excess cost growth is not clear. In addition, the key question for Japan is how to curtail per-capita spending by the elderly. Micro-level research could shed light on these questions. For example, it would be useful to examine factors that contribute to significant disparities in per-capita spending by the elderly across regions.

Box 1. Japan's Health System

Japan's health system consists of universal health care (HC) and long-term care (LTC). The HC system virtually covers the entire population. The LTC system covers people at age 65 and older, as well as those between ages 40–64 who meet eligibility criteria. Japan's HC system is highly fragmented: there are over 3,000 plans according to where patients reside and where they are employed. The insured enjoy "free access" to care in the sense that they can choose any service providers regardless of where they live or to which insurer they belong. Privately owned hospitals account for a majority of total hospital beds, while they operate in general on a not-for-profit principle (Tatara and Okamoto, 2009). Key features are as follows.

Insurers. Age and employment largely determine one's HC insurer (see text figure). People aged 75 and above are covered by the insurer operated by the prefecture government of their residence. For people aged 74 and below, four kinds of insurance programs exist. Employees of small and medium enterprises are all covered by one insurer (Kyokai Kempo), while employees of large firms are covered by their employers (Kumiai Kempo). There are around 1,500 Kumiai Kenpo insurers. Public sector employees and teachers at private schools have their own insurers (Mutual Aid Associations). Residents who are not covered by these insurance programs, that is, the self-employed, unemployed, and pensioners, belong to a National Health Insurance Program (NHIP), which is administered by each municipality. There are around 1,800 NHIPs. LTC insurance is administered by municipal governments.



Contributions. Contributions for HC insurance are adjusted to income and differ across insurers. The Kyokai Kempo insurer has different contribution rates across prefectures although it is a single insurer. For employment-based HC insurance programs, contributions are proportional to income but become flat beyond a certain threshold. Employers provide a matching contribution to each insured. Dependent spouses with annual income below 1.3 million yen (about $13,000) are exempted from paying contributions. Contribution rates for the NHIP enrollees are based on a family unit and vary across municipalities. Contribution rates for LTC insurance are adjusted to income and differ across municipalities.

Patient copayments. The copayment rate for HC insurance is uniform (30 percent), except for pre-school children (20 percent) and the elderly (10 percent). The 30 percent rate is applied to participants at age 70 and older who earn income comparable to that of the working-age population. LTC insurance has a uniform copayment rate of 10 percent. Copayments are subject to a monthly cap, which is based on age and income. People on the welfare program receive free care (such families account for about 3 percent of the total number of households).

Government controls. The central government sets unit prices of all medical procedures, drugs, and devices every two years, and they are applied uniformly to all physicians and hospitals (both private and public). Similarly, it also determines prices of LTC services every three years. The government also regulates the health care workforce through enrollment quotas for medical schools.

APPENDIX I. TWO SOURCES FOR HEALTH SPENDING DATA

Two data sources are available for spending on health care and long-term care in Japan. The data used in this paper is the spending covered by the public health and long-term care insurance systems, published by the Ministry of Health, Labor, and Welfare ("government data"). The other available source is the spending data based on the System of Health Account, published by the OECD ("OECD data"). The data coverage differs as follows.[24]

- Some spending items covered by the OECD data are excluded from the government data. Examples are procedures not covered by public health insurance, such as expenses for normal childbirth and a comprehensive medical checkup, and capital expenditure by hospitals.

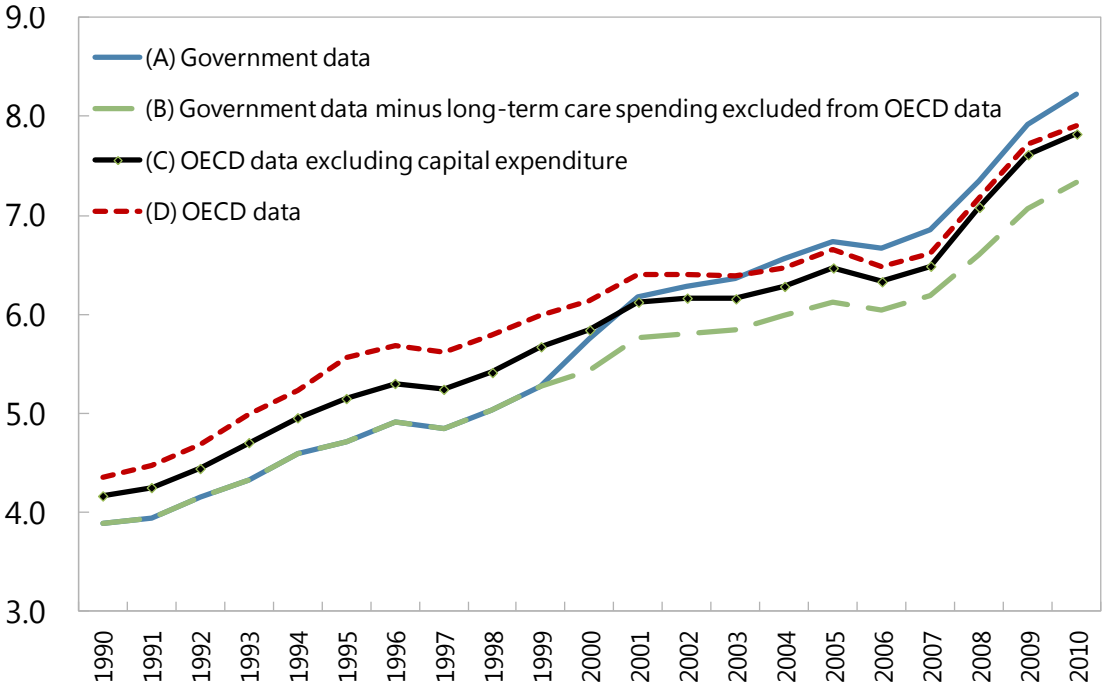
- Some spending items covered by the government data are excluded from the OECD data. Personal care services covered by public long-term care insurance (e.g., non-medical support for daily activities such as eating and washing) fall into this category.

The chart below compares the government data with the OECD data, plotting the ratio of public spending to GDP. The government data (line A) diverges from the OECD data (line D) from 2000 onwards. This reflects two factors. First, the long-term care spending excluded from the OECD data is large (the difference between lines A and B). Because of this, the government data exceeds the OECD data from 2003 onwards. Unlike the government data, the OECD data does not show a structural break around 2000 that results from the introduction of long-term care insurance. Second, capital expenditure, which is covered by the OECD data but not by the government data, has decreased gradually as a percent of GDP. The government data adjusted for the impact of the long-term care spending (line B) moves closely in parallel with the OECD data adjusted for capital expenditure (line C) in the last two decades.

Our results for the spending decomposition are not sensitive to the choice of the two series, as long as the structural break for the introduction of long-term care insurance is taken into account. Using the OECD data, the annual average increase of the public spending-to-GDP ratio over 1990–2010 is 2.8 percent. This is essentially the same as our result—in Table 1 in the main text, the annual average increase of the ratio is 3.1 percent over 1990–2011, excluding observations for 2000–2002.

[24] See Sakamaki and others (2004). We also thank staff of the Ministry of Health, Labor, and Welfare for kindly clarifying these issues.

Japan: Public Health Care and Long-term Care Spending
(In percent of GDP)



Sources: OECD; Ministry of Helath, Labor, and Welfare; IMF staff calculations.

APPENDIX II. METHODOLOGY TO PROJECT CONTRIBUTION RATES

To project contribution rates for HC and LTC insurance programs, we project labor earnings and pension benefits based on the following methodology, assumptions, and data.

Population

Age-specific population projections for five-year groups come from the National Institute of Population and Social Security Research (IPSS 2012). Birth and death rates are based on the medium variant.

Labor force participation (LFP)

Age-specific LFP rates for 5-year groups come from the Statistics Bureau of the Ministry of Internal Affairs and Communications. The 2012 data is used to calculate the age-specific LFP rates during 2013–18 such that the aggregate LFP rate matches the projection by the IMF (2013) in each year. For 2019 onward, age-specific LFP rates remain the same as in 2018. The aggregate LFP rate is computed based on the age-specific population and LFP rates. It declines from 57 ½ percent in 2010 to 55½ percent in 2030 and 50 percent in 2060, largely due to the aging of the population.

Employment and Earnings

A similar methodology is applied for projections of age-specific employment rates and average earnings for 5-year groups. Outturn data comes from the Statistics Bureau. Projections incorporate data from the *World Economic Outlook* (IMF 2013), and assume that the unemployment rate will come down to 4 percent and remain at this rate from 2018 onwards. Age-specific employment and the corresponding average earnings provide information on aggregate labor earnings in the economy, which also matches the projection by IMF (2013) in each year during 2012–2018. The nominal wage is assumed to grow by 2¼ percent on average during 2018–22 and by 2½ percent from 2023 onward. Inflation is fixed at 1 percent in the long-term. The assumptions of nominal wage growth and CPI inflation follow closely the long-term projection of the conservative growth scenario (Cabinet Secretariat 2011).

Pension benefits

Projections for both aggregate and age-specific pension benefits follow the baseline scenario used by Kashiwase, Nozaki, and Tokuoka (2012).

APPENDIX III. INSTITUTIONAL INDICATORS OF HEALTH CARE SYSTEMS IN OECD COUNTRIES

Reform areas and indices	Japan's score	OECD median
Budget caps		
Budget constraint: rules and/or targets to fix the health budget and its allocation across subsectors and/or regions	0.0	2.0
Central government oversight: number of key decisions overseen by central government	4.3	4.7
Supply constraints		
Regulation of workforce and equipment: degree of regulation on the number and distribution of health care workforce and hospital high-tech equipment and activities, and control of recruitment and remuneration of hospital staff	1.5	2.9
Priority setting: definition of health benefit basket, effective use of health technology assessment, and definition and monitoring of public health objectives	4.1	2.9
Price controls		
Regulation of providers' prices: regulation of drug prices and of prices billed by physicians and hospitals	5.0	4.6
Regulation of prices paid by third-party payers: regulation of prices paid by third-party payers for primary care physicians, specialists, hospital services, and drugs	5.0	4.5
Public management and coordination		
Gatekeeping: obligation or incentive to register with a general practitioner and/or to get referrals to access secondary care	0.0	3.0
Subnational government involvement: number of key decisions made at the subnational level	2.1	1.8
Delegation: number of key decisions made at the insurer level	1.3	0.5
Contracting methods		
Volume incentives: degree of payment modes to incentivize less services	5.7	3.2
Market mechanisms		
Choice of insurers: ability of people to choose their insurer for basic coverage	2.0	1.0
Insurer levers: ability of insurers to compete and availability of insurer information for consumers	1.8	0.0
User information: availability of information on quality and prices of health care services	0.0	0.9
Private provision: degree of private provision of physician and hospital services	4.4	2.9
Choice among providers: degree of freedom in choosing among primary care physicians, specialists, and hospitals	6.0	5.3
Demand-side reforms		
Over-the-basic coverage: share of the population covered by nonprimary insurance, share of health care expenditures financed out of private insurance, and degree of market concentration	0.5	0.8
Price signals on users: extent to which patients face out-of-pocket expenses	0.9	1.0

Sources: Joumard and others (2010); and Clements and others (2012).

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