

# Berliner Demografie Forum 2015

## Interactive Executive Panel

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20 March 2015

See Appendix A-1 for analyst certification, important disclosures and the status of non-US analysts.

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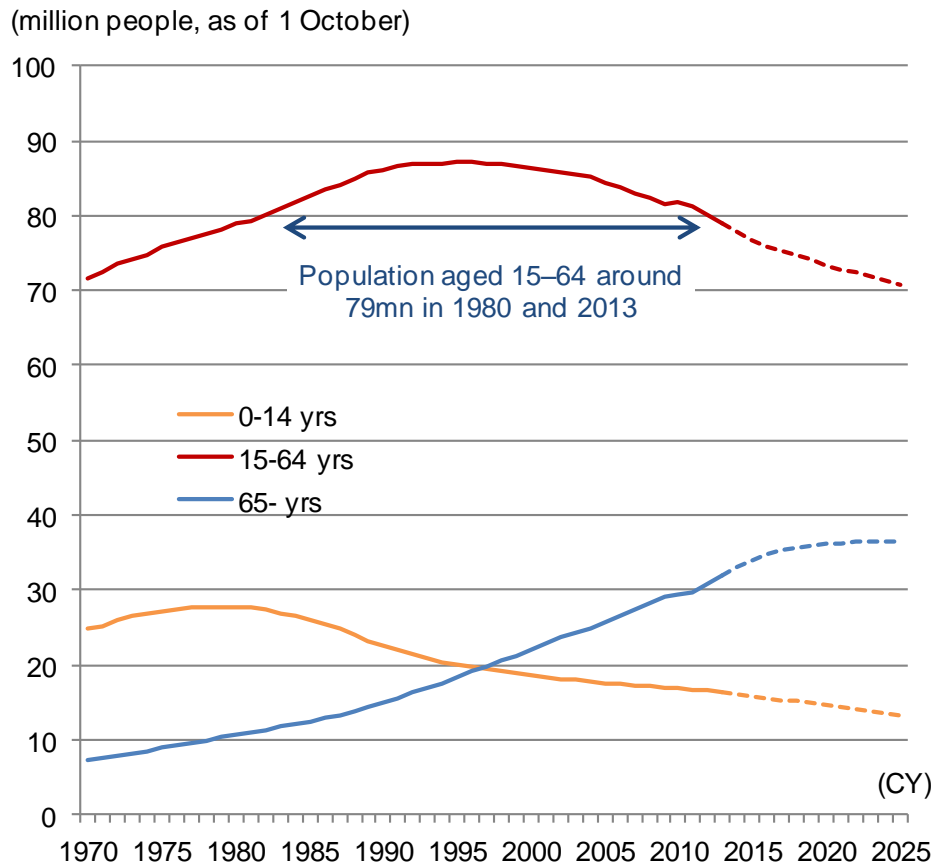
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# Demographics as a structural problem

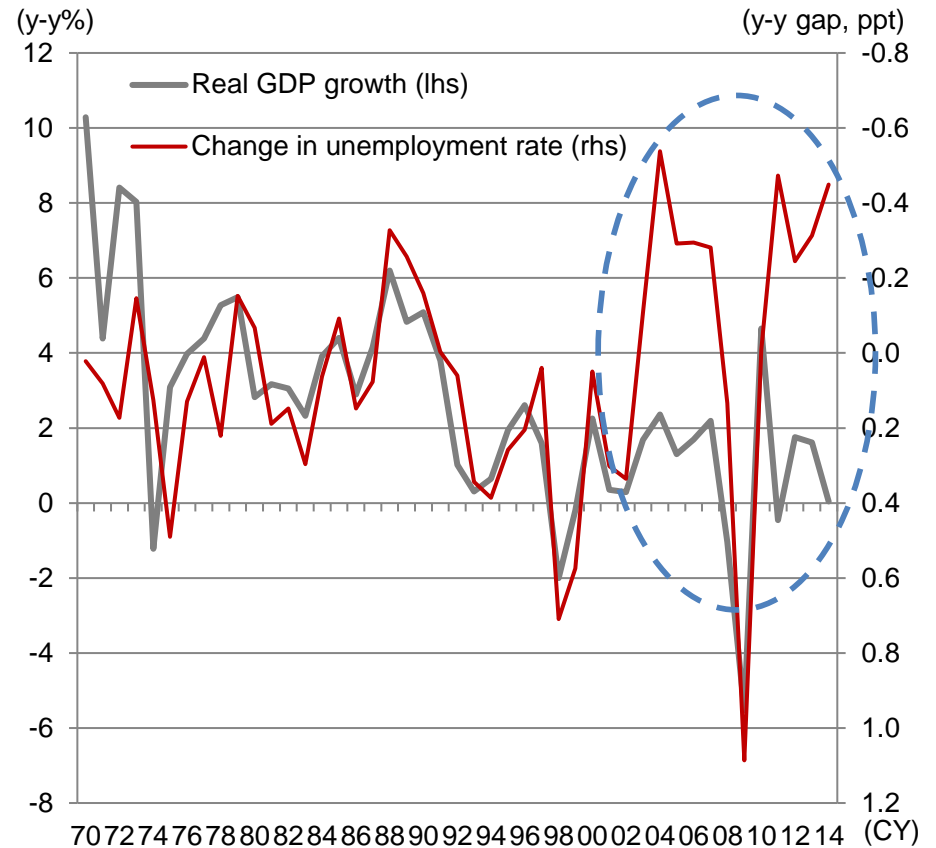
- ✧ Population aged 15-64 decreased to 79m in 2013, the same level as in 1980.
- ✧ Unemployment tends to decline at a lower growth rate than it used to, a sign of an intensifying labor shortage.

Japan's population by age group



Note: Data from 2014 based on estimates by the National Institute of Population and Social Security Research.  
 Source: Nomura, based on Ministry of Internal Affairs and Communications (MIC) and National Institute of Population and Social Security Research data

Real GDP growth and unemployment rate

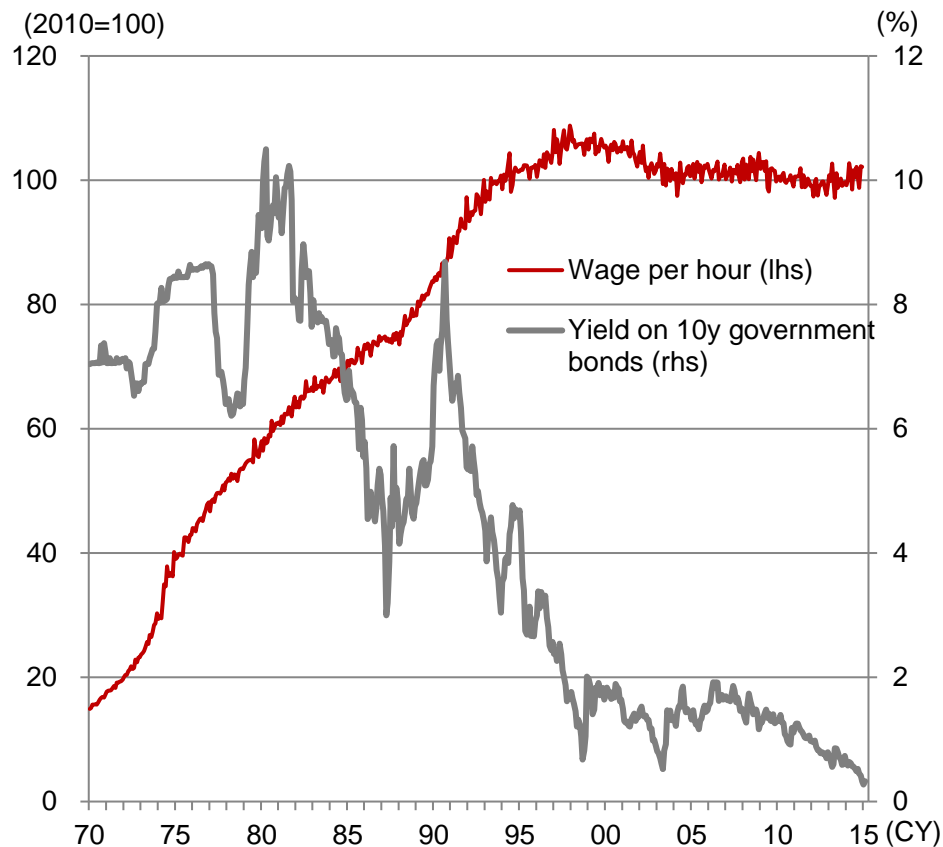


Source: Nomura, based on Cabinet Office and Ministry of Internal Affairs and Communications

# What happened to Japan during the lost two decades

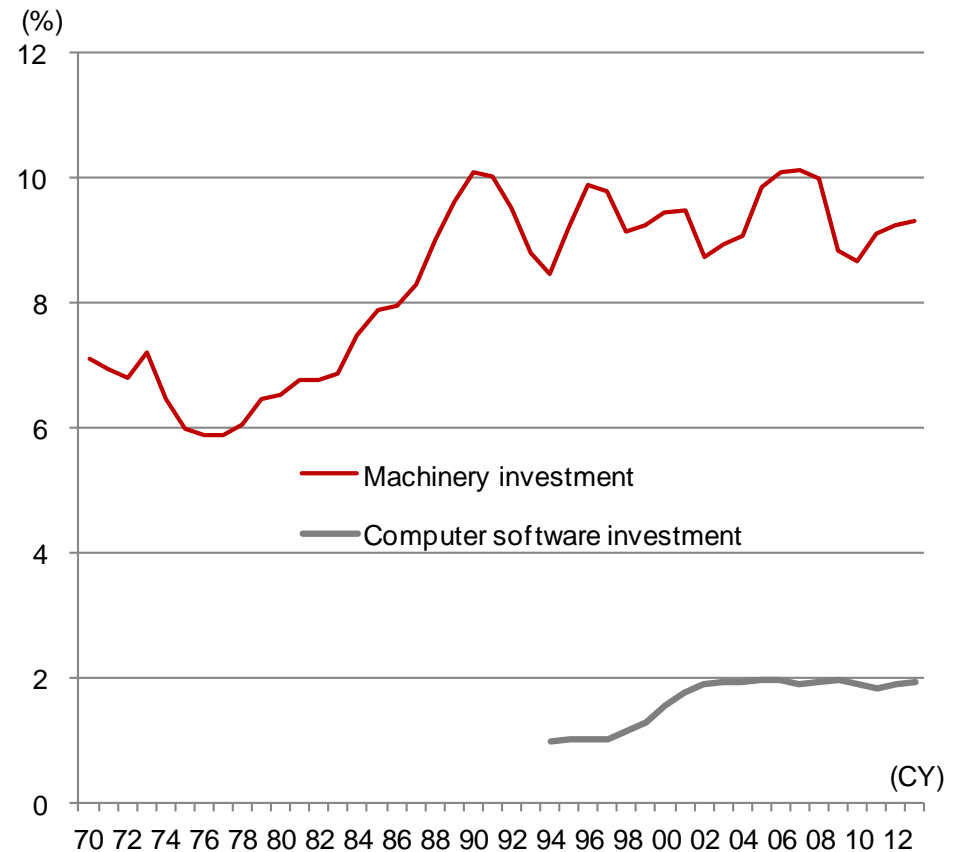
- ✧ Wages in Japan have been stagnant for more than a decade.
- ✧ Machinery and software investment as a percentage of GDP were flat during that time.

Wage and interest rates in Japan: 1970-2014



Note: Hourly wage data are for establishments with 5 or more workers. Data before 1990 is extrapolated using data for establishments with 30 or more workers.  
 Source: Nomura, based on Ministry of Health, Labour, and Welfare (MHLW), Japan Securities Dealers Association and Japan Bond Trading Co.

Share of machinery and software investment in GDP in Japan

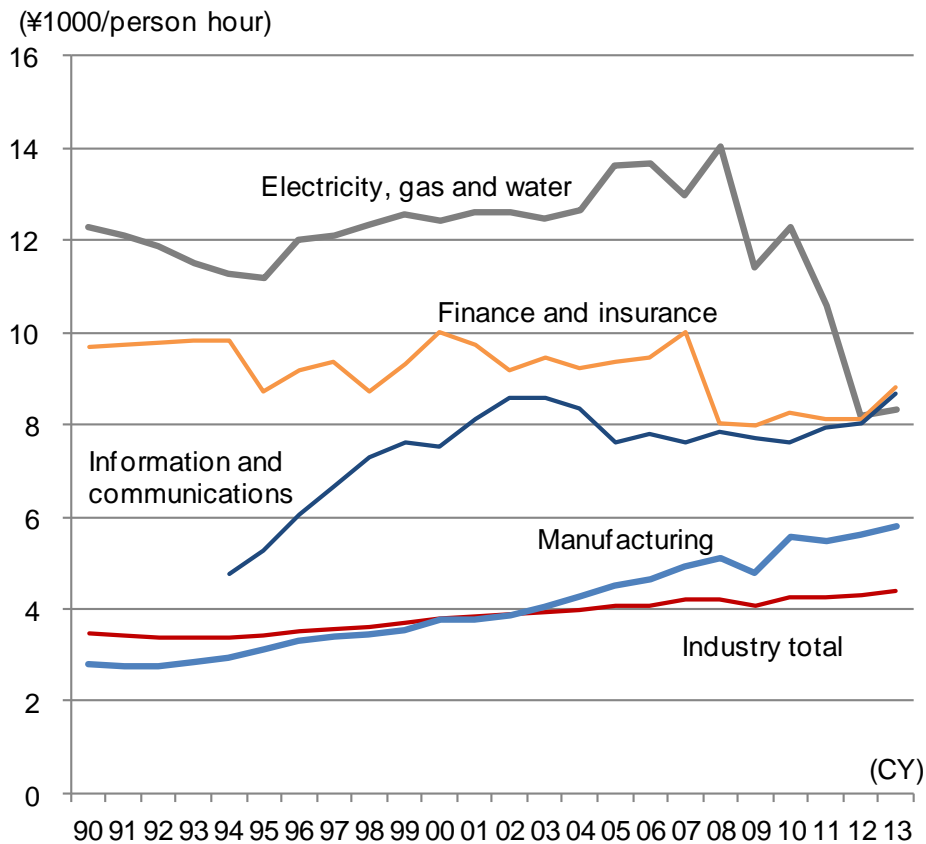


Note: Data are for real GDP using 2005 prices. For the period through 1993, data are for real GDP at 1990 prices.  
 Source: Nomura, based on Cabinet Office

# Labor productivity by industry

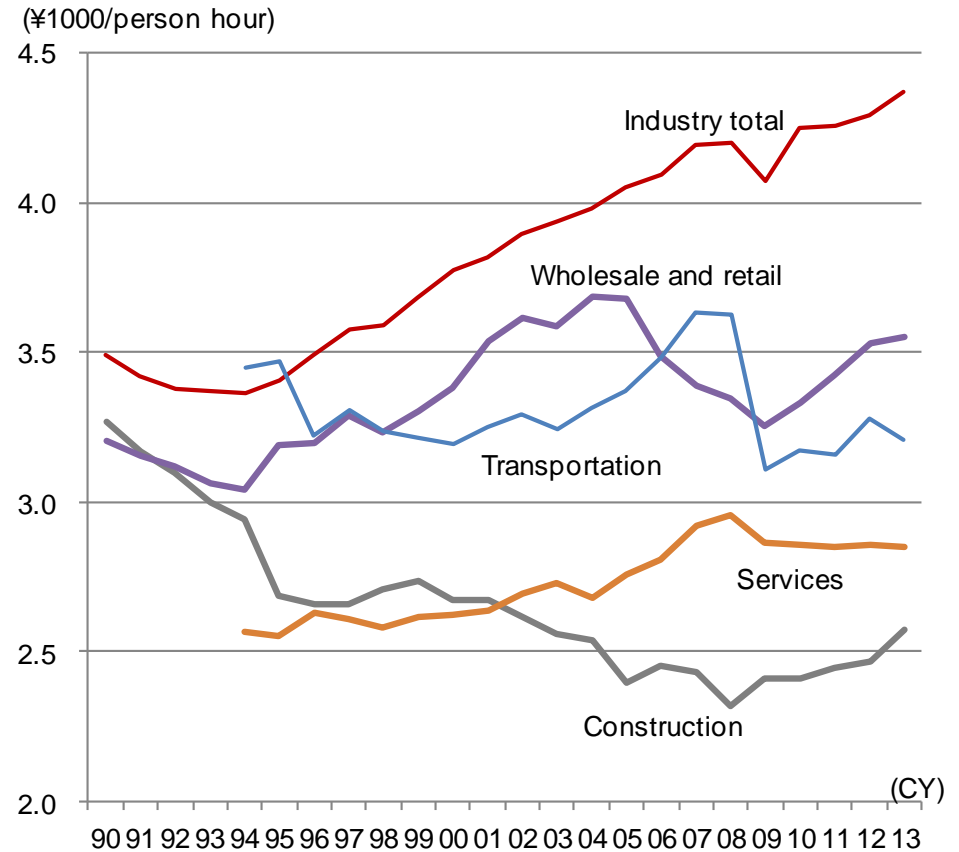
✧ Labor productivity varies vastly across industries.

Labor productivity by industry (1)



Note: Labor productivity = Real GDP (at 2005 basis) / (number of persons employed \* hours worked per person). Real GDP for the period through 1993 has been back-calculated using the growth rate for real GDP at 2000 prices.  
Source: Nomura, based on Cabinet Office

Labor productivity by industry (2)

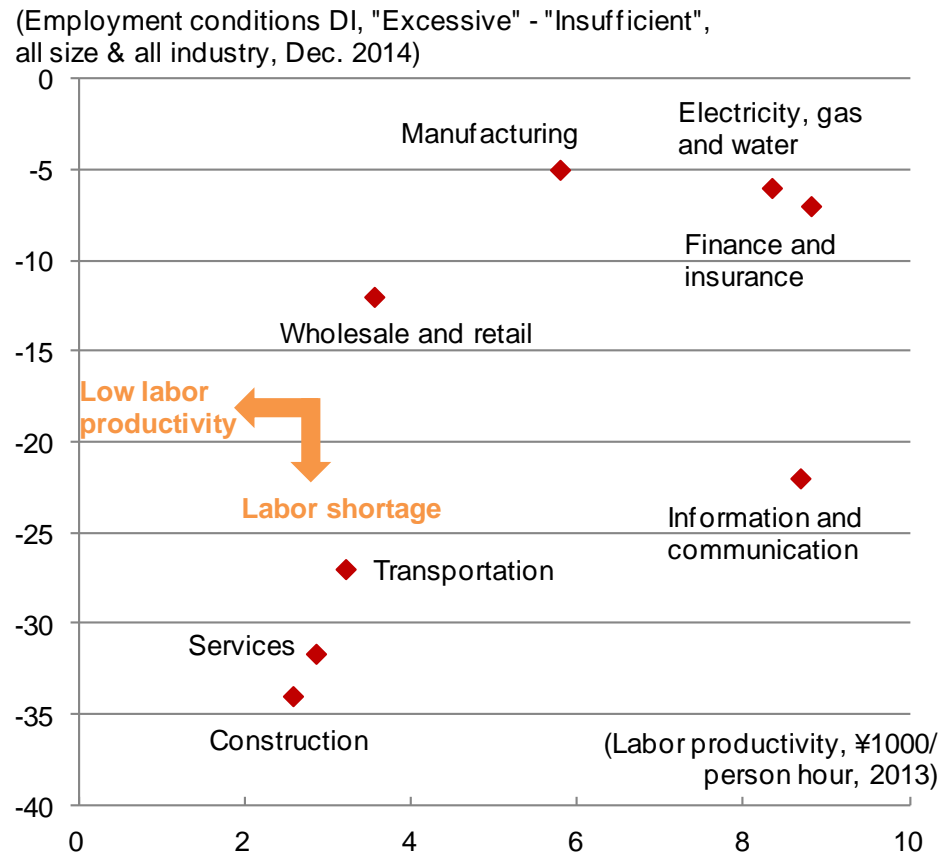


Note: Labor productivity = Real GDP (at 2005 basis) / (number of persons employed \* hours worked per person). Real GDP for the period through 1993 has been back-calculated using the growth rate for real GDP at 2000 prices.  
Source: Nomura, based on Cabinet Office

# Sectors that need improvement in productivity

- ✧ The labor shortage tends to be severe in industries with lower labor productivity.

## Labor productivity and labor shortages



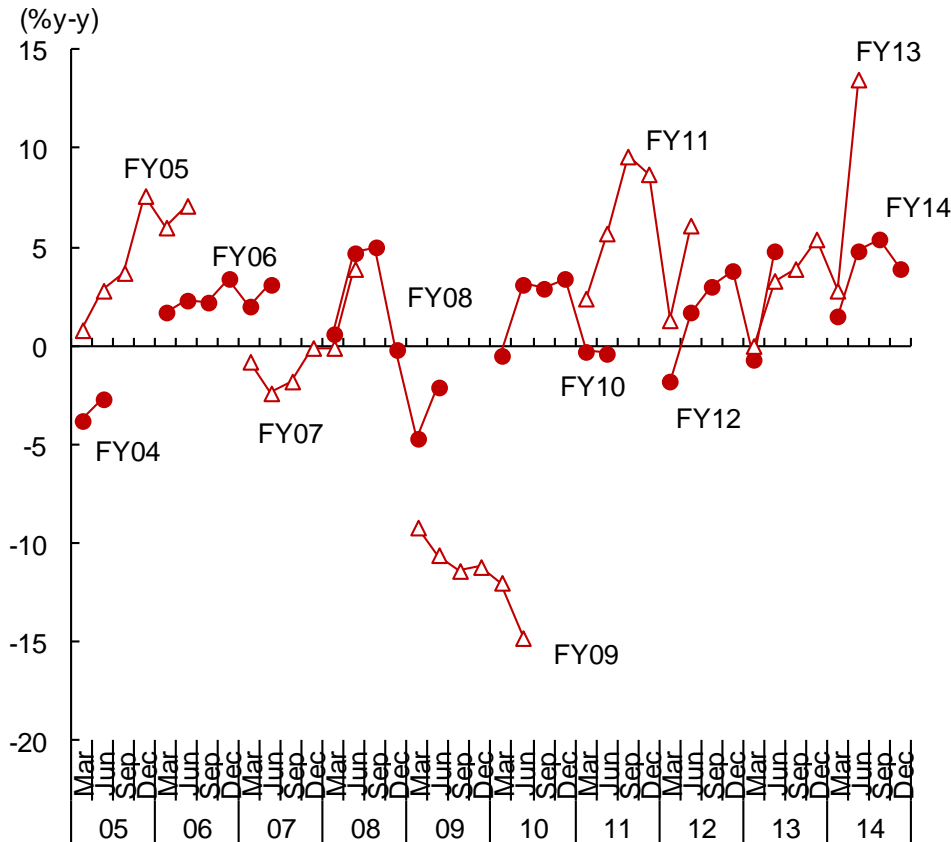
Note: Labor productivity = Real GDP (at 2005 basis) / (number of persons employed \* hours worked per person). The employment conditions DI for services is the average for business services, personal services, and hotel/catering services.

Source: Nomura, based on Bank of Japan and Cabinet Office

# An example of labor saving technology

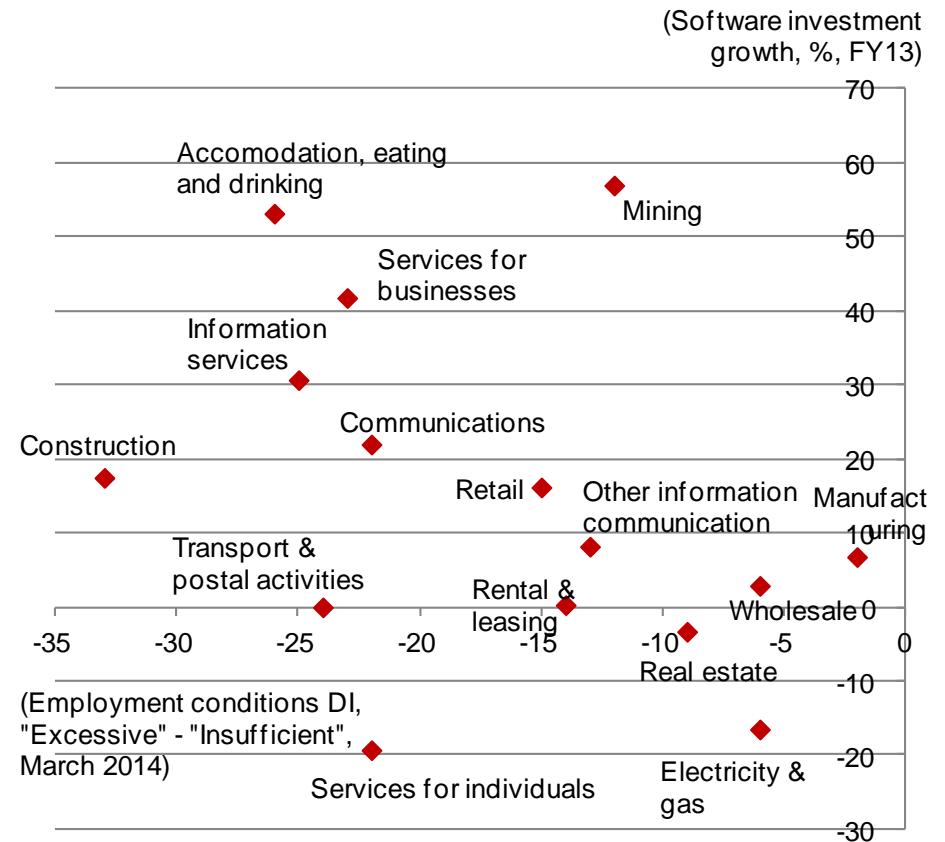
- Software investment increased at the highest pace in FY13. A further increase is planned for FY14.
- Sectors with severe labor shortages have increased software investment.

Software investment plans in the BOJ *Tankan*  
(all company sizes, all-industry basis)



Note: The six data points for each fiscal year (from left to right) represent the following: planned investment as of March, June, September, and December; estimated actual figure for fiscal year; and actual figure for fiscal year.  
Source: Nomura, based on BOJ

Labor shortages and software investment

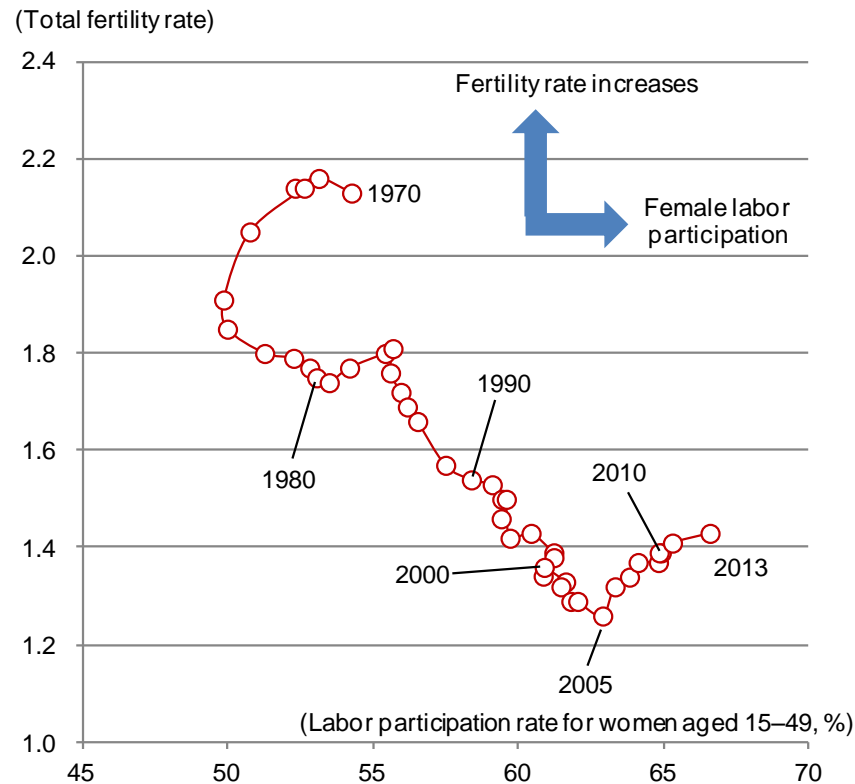


Note: Data are for companies of all sizes and all industries.  
Source: Nomura, based on Bank of Japan

## Major change in Japan's fertility rate

- ✧ Japan's total fertility rate has risen from the bottom of 1.26 in 2005 to 1.43 in 2013.
- ✧ Notably, the recent rise in the fertility rate is associated with a rise in female labor participation.

Total fertility rate and women's labor force participation rate



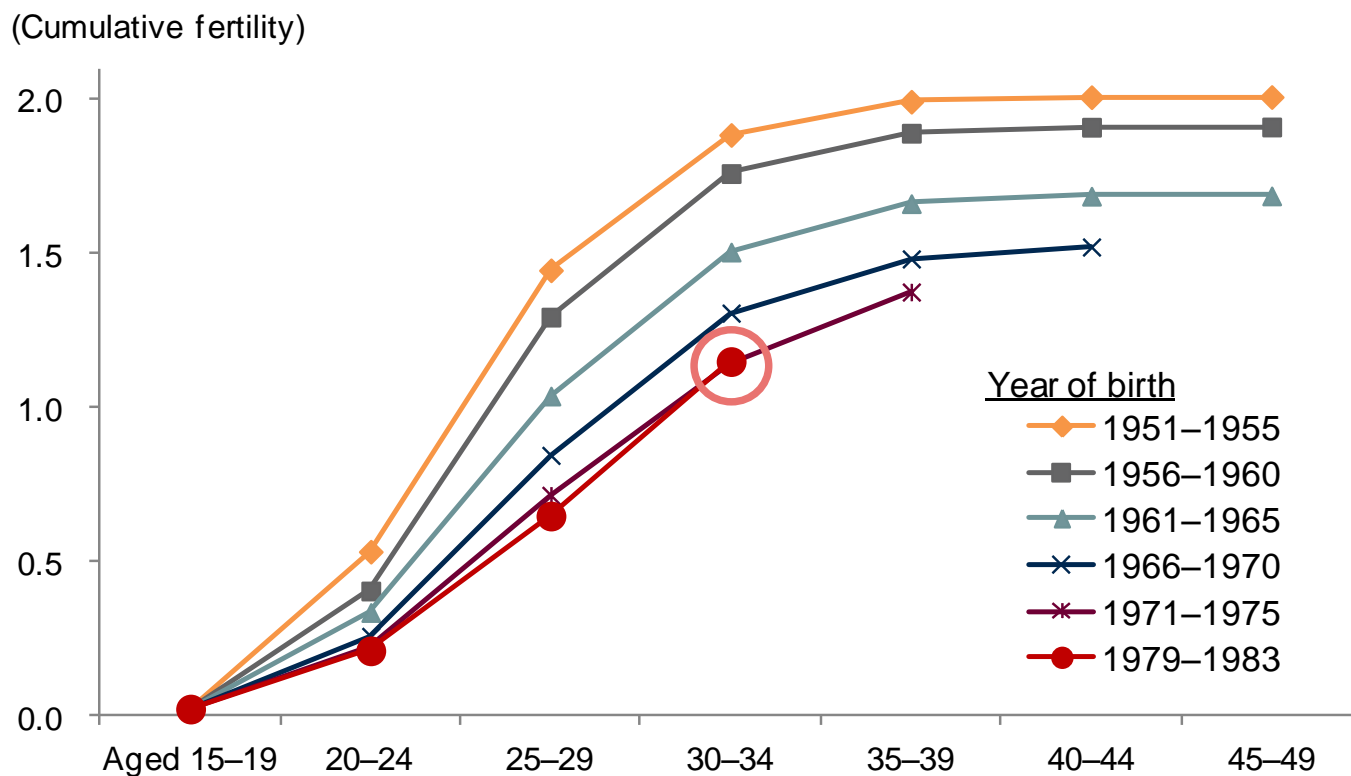
Source: Nomura, based on MHLW and MIC data



# End of the decline in the “true” fertility rate

✧ A more accurate cohort analysis suggests that the fertility rate has truly stopped declining.

## Cohort fertility analysis

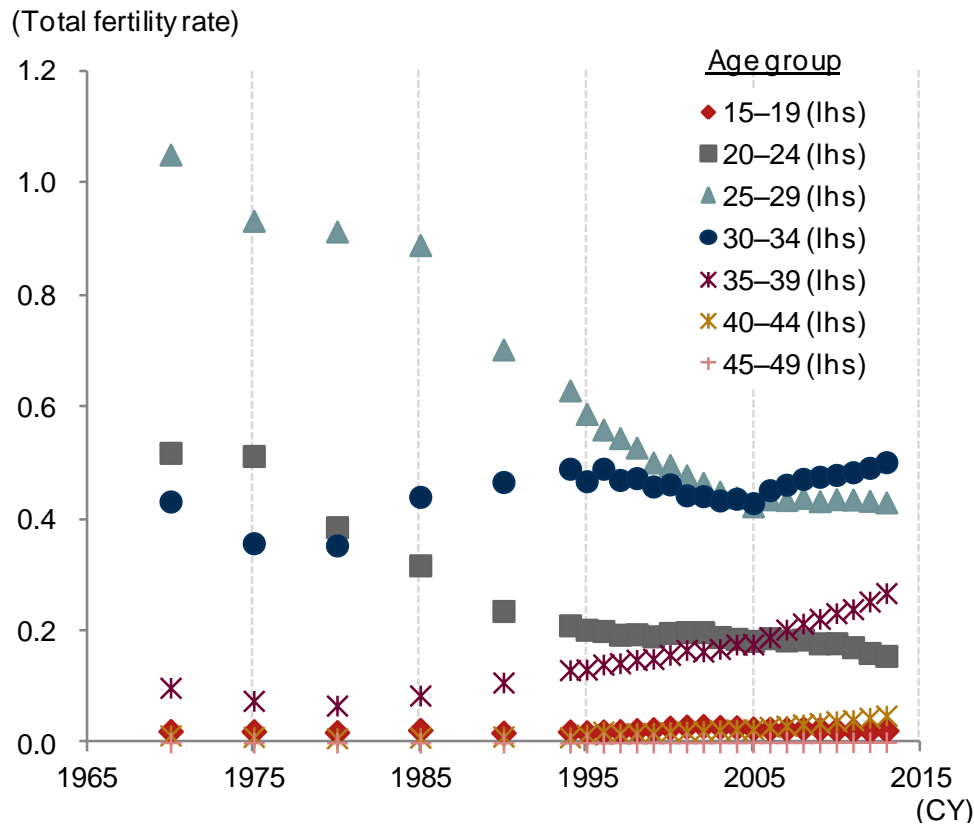


Source: Nomura, based on MHLW data

# Long-term shift in the age of mother at birth

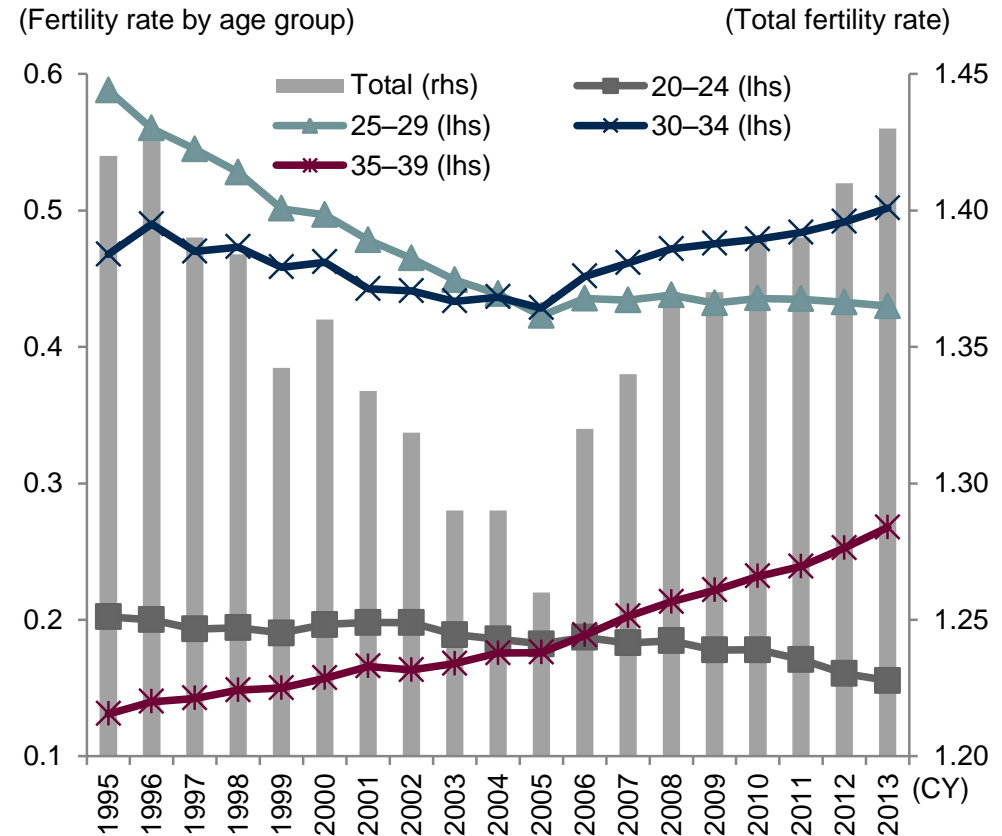
- ✧ There has been a long-term shift in the age of mother at birth to a higher age.
- ✧ However, the pace of decline in the birth rate is slowing even in younger generations.

Total fertility rate by age group (1)



Source: Nomura, based on MHLW data

Total fertility rate by age group (2)

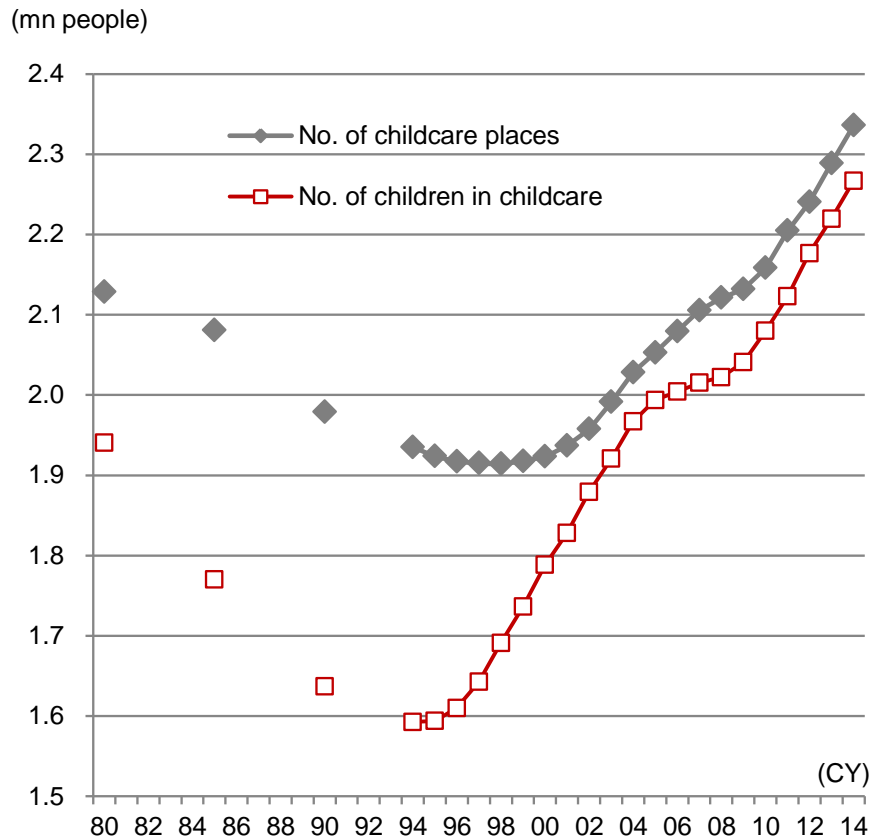


Source: Nomura, based on MHLW data

# Expansion of childcare facilities

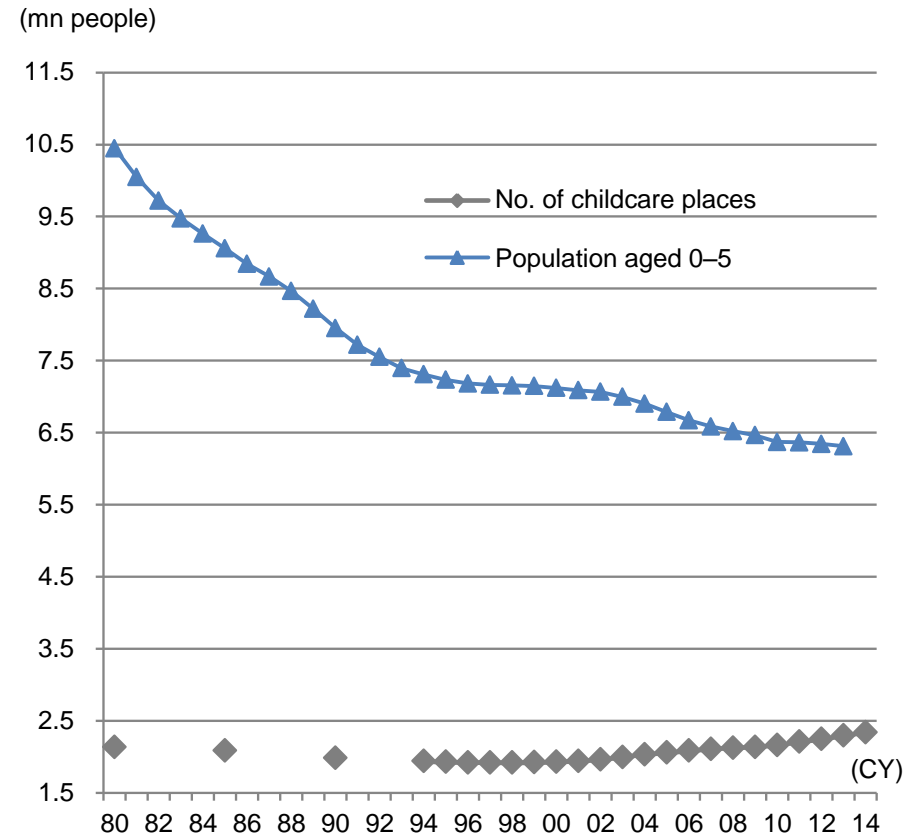
✧ The supply of childcare facilities has been increasing, but the demand seems to be even stronger.

Number of preschool childcare facility places and number of preschool children using daycare facilities



Source: Nomura, based on MHLW data

Preschool childcare places and the population aged 0–5

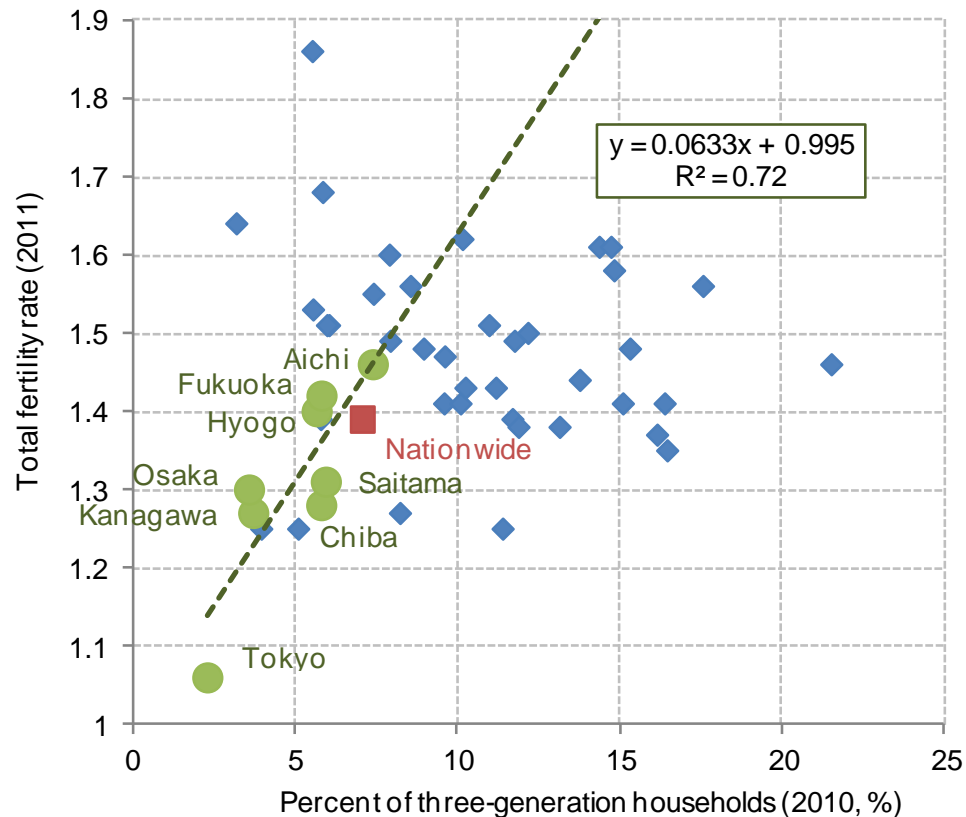


Source: Nomura, based on MHLW and MIC data

# A new family style – “parents nearby”

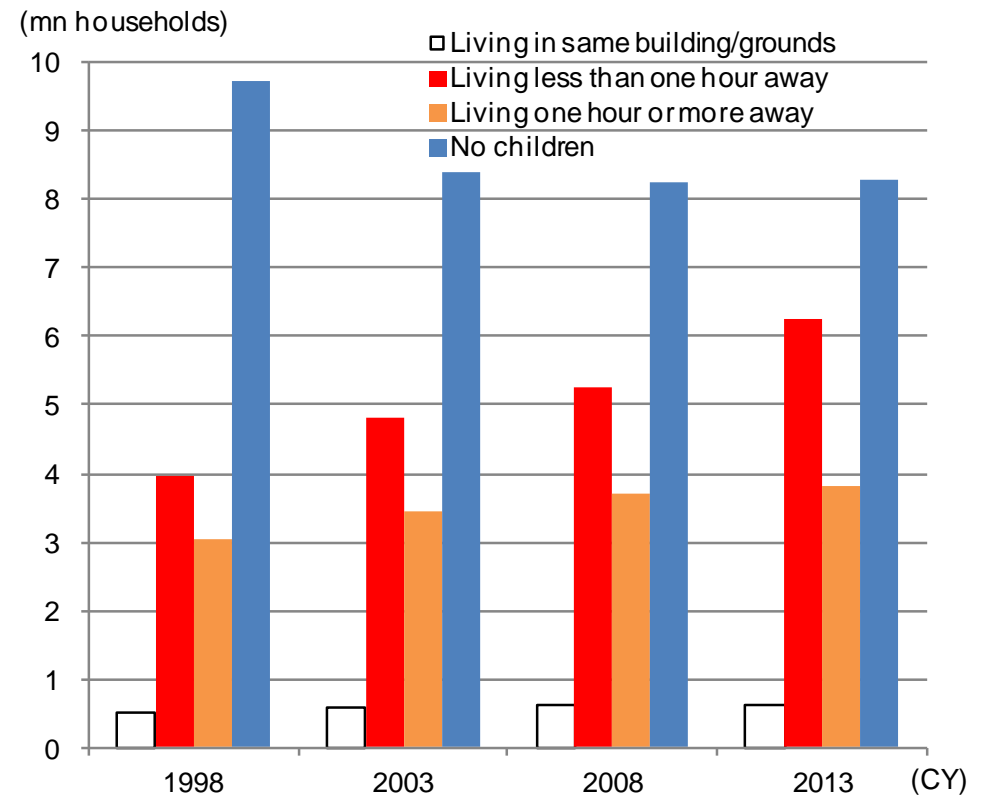
- ✧ Fertility rates tend to be higher in three-generation households.
- ✧ The number of households that live close to their parents is increasing.

Total fertility rates and percentage of three-generation households by prefecture



Source: Nomura, based on MHLW and MIC data

Number of households (single person or married couples) by how close they live to offspring

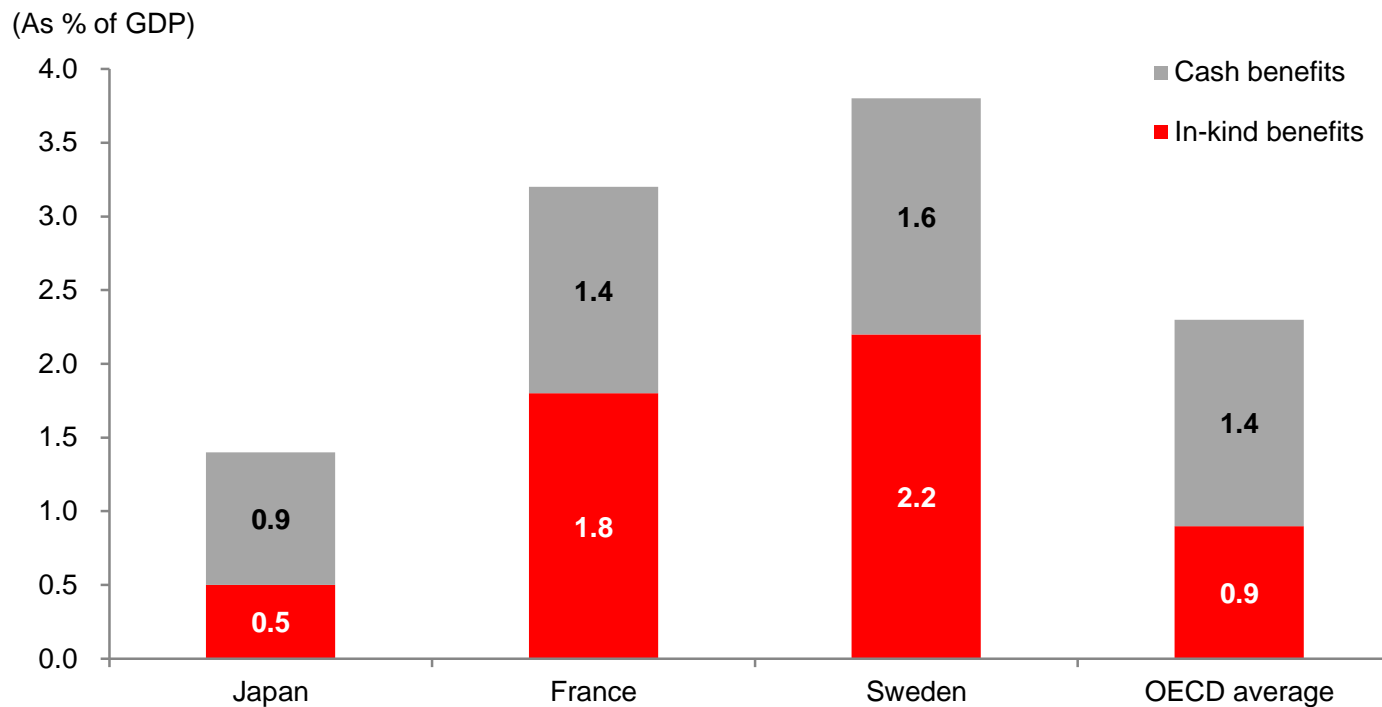


Source: Nomura, based on MHLW and MIC data

# Public family support

✧ Family-related government expenditure as % of GDP has been low in Japan.

## International comparison of family-related government expenditure

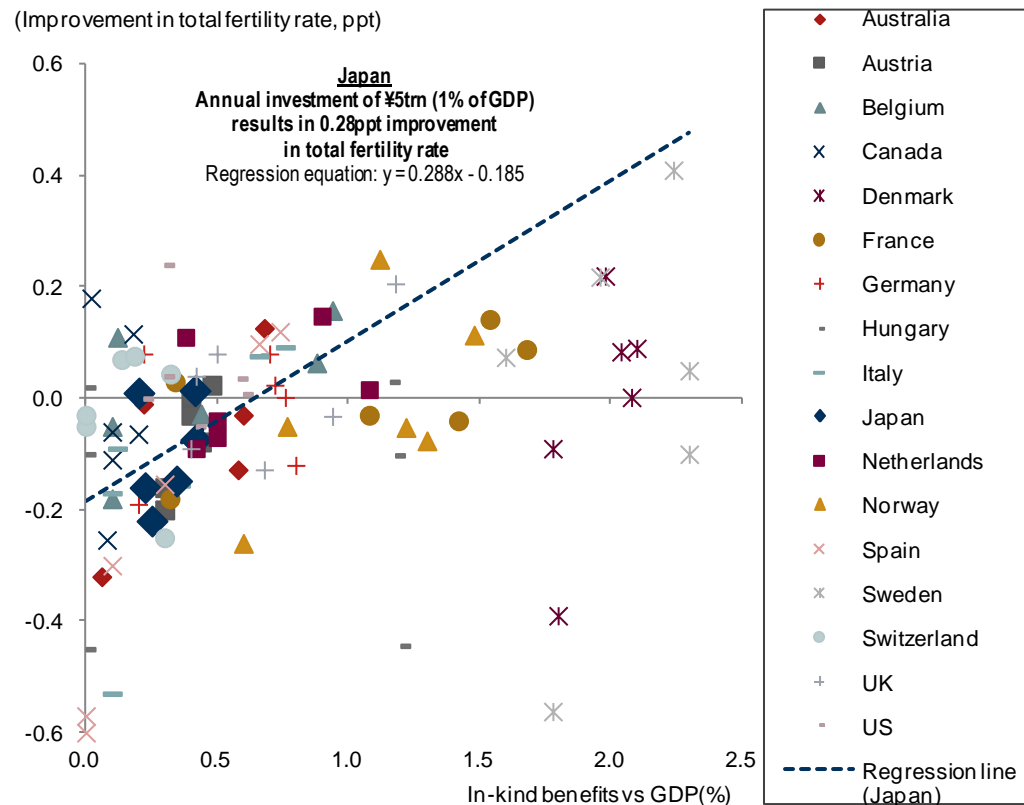


Note: Data for 2009 apart from Japan, for which we have used FY11 figures  
 Source: Nomura, based on Cabinet Office data

# In-kind benefit policy and the fertility rate

✧ The fertility rate can be raised by providing in-kind benefits.

## Relationship between the total fertility rate and in-kind benefits



Source: Nomura, based on OECD and MIC data

## Total fertility rate under different benefit scenarios

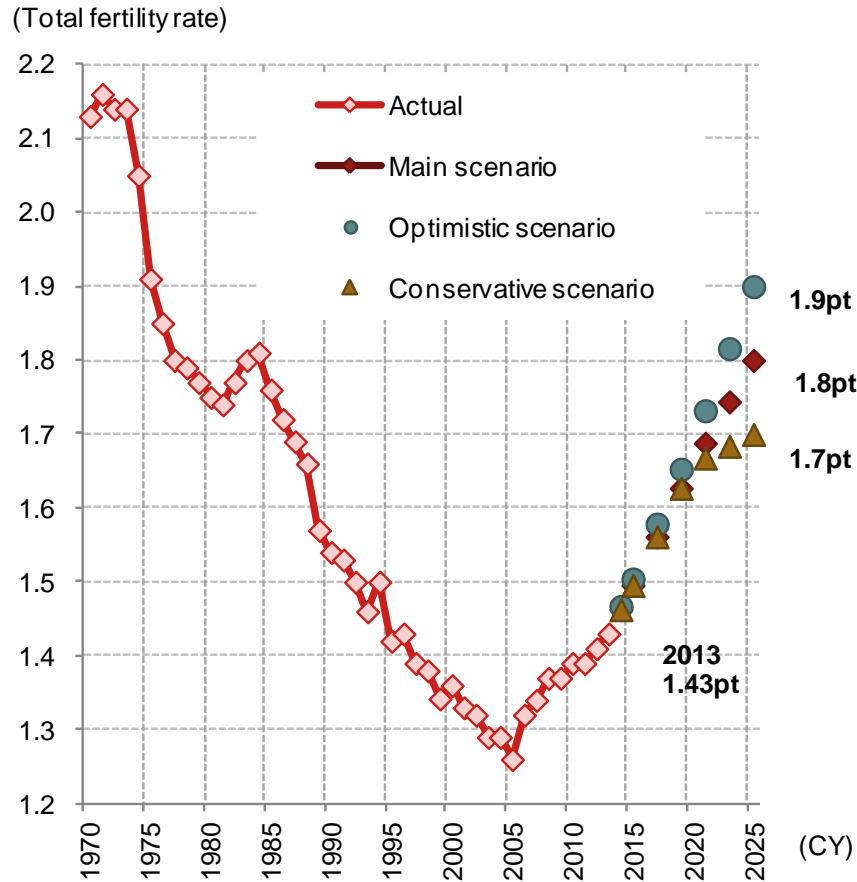
	Main scenario	Optimistic scenario	Conservative scenario
Boost from upward shift in childbearing age	+ 0.07ppt	+ 0.07ppt	+ 0ppt
2015⇒2020			
In-kind benefits (¥trn/year)	3	3.5	2.5
As % of GDP	0.6%	0.7%	0.5%
Improvement in fertility rate	+ 0.16ppt	+ 0.19ppt	+ 0.13ppt
2020 fertility rate	1.66	1.69	1.56
2020⇒2025			
In-kind benefits (¥trn/year)	3	4.5	2.8
As % of GDP	0.5%	0.8%	0.5%
Improvement in fertility rate	+ 0.14ppt	+ 0.22ppt	+ 0.13ppt
2025 birth rate	<b>1.80</b>	<b>1.90</b>	<b>1.70</b>

Source: Nomura

# Future fertility rate

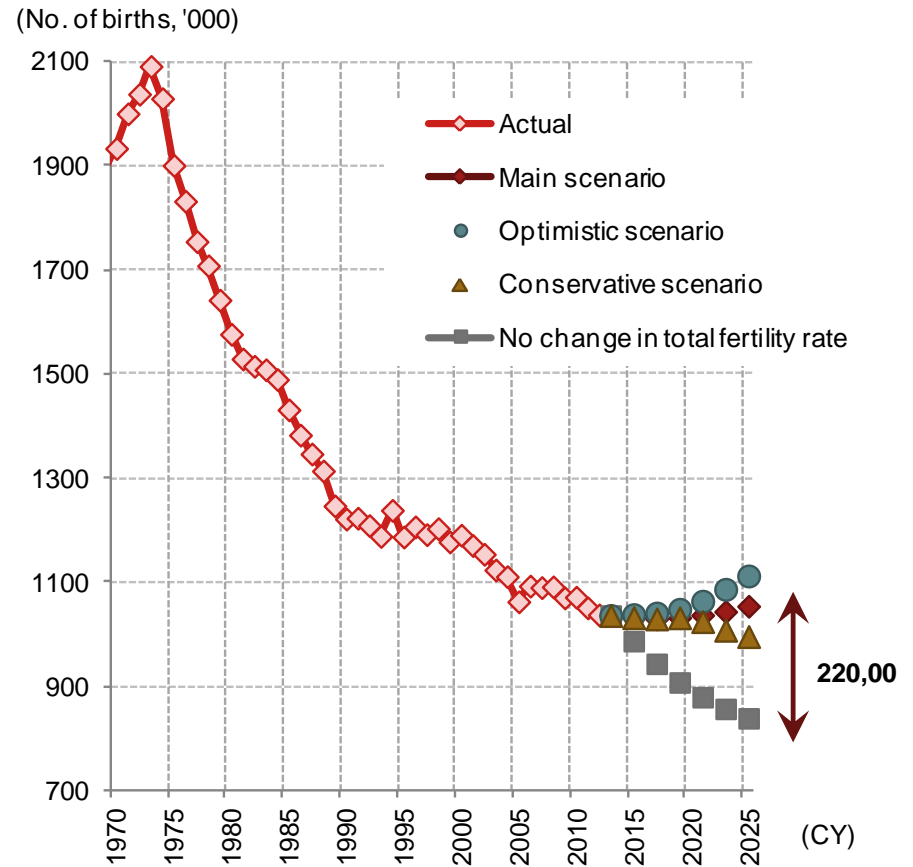
✧ There is room for a further rise in the fertility rate, including a technical rebound.

## Simulation of total fertility rate



Source: Nomura, based on MHLW data

## Simulation of number of births



Source: Nomura, based on MHLW data

# The direct impact of an improved total fertility rate on spending

- ✧ More children implies more expenditure related to childbearing.

## Improvement in the total fertility rate and the direct impact on spending under different scenarios

	Main scenario	Optimistic scenario	Conservative scenario
Total fertility rate (2025)	1.8pt	1.9pt	1.7pt
No. of additional births (2025)	220,000	270,000	160,000
Cumulative total additional births (2014–2025)	1,530,000	1,820,000	1,350,000
Childrearing costs resulting from additional births ( by 2025)	¥0.92trn	¥1.09trn	¥0.81trn

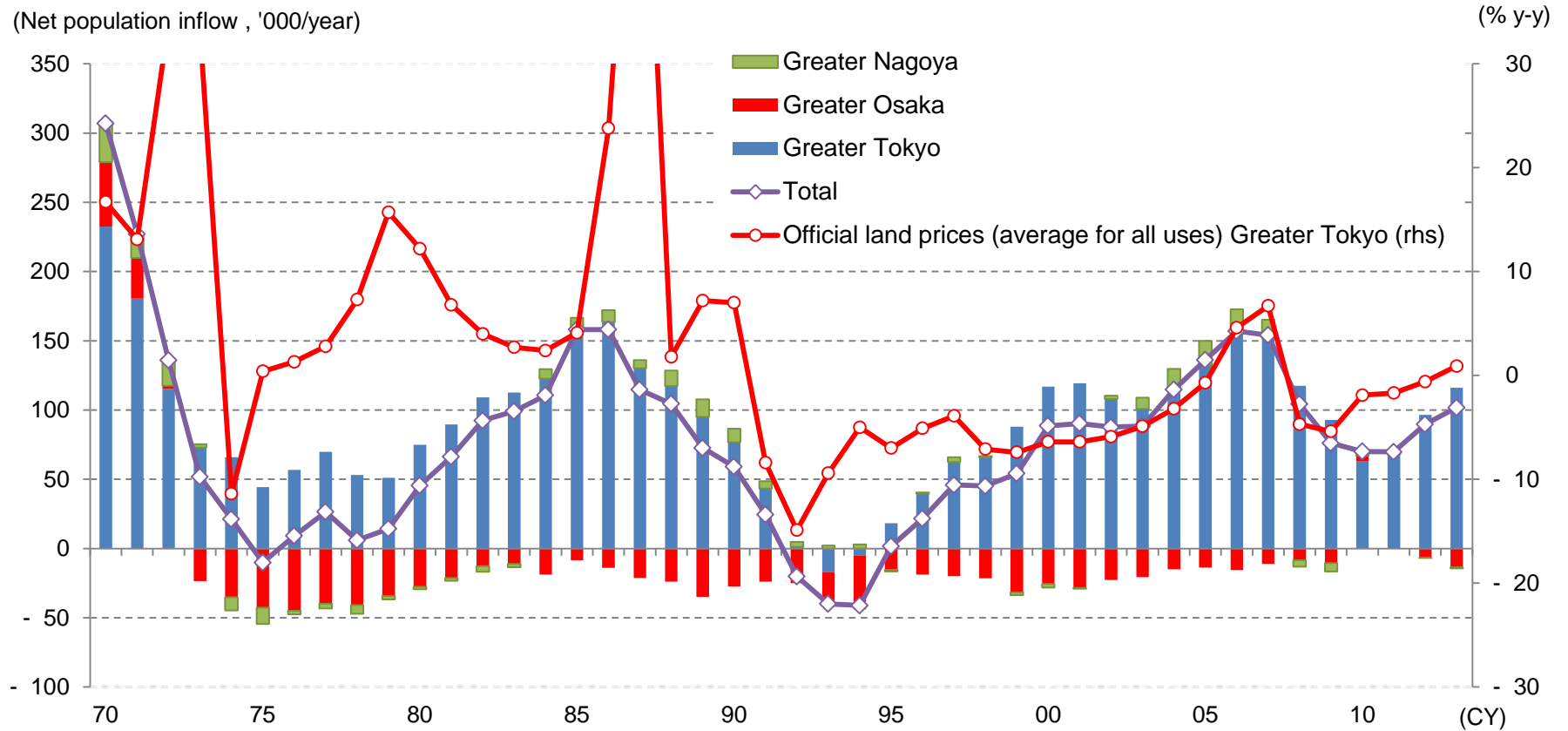
Source: Nomura



# Regional revitalization possible?

✧ Population inflow into main urban centers is still continuing.

## Net inflow of people into Japan's three main urban centers



Note: Definition of three main urban centers:  
 Greater Tokyo: Tokyo, Kanagawa, Chiba, and Saitama prefectures  
 Greater Osaka: Osaka, Hyogo, Kyoto, and Nara prefectures  
 Greater Nagoya: Aichi, Gifu, and Mie prefectures

Source: Nomura, based on *Report on Internal Migration in Japan*, MIC, and *Land Market Value Publication*, Ministry of Land, Infrastructure, Transport, and Tourism

# A key to regional revitalization

- ✧ Income gap is behind the population inflow to major cities.
- ✧ A key to regional revitalization is capturing the move of manufacturers coming back to Japan

## Recent examples of Japanese electrical machinery makers returning production to Japan

	Company	Announcement date (yy/m/d)	Details of return to domestic production
End products	Olympus	12/12/21	30% expansion of production capacity for gastroenterological endoscopes by FY16, for total investment of approximately ¥19.7bn
	Canon	14/1/18	Raising of domestic production ratio from 42% at present to 50% by 2015
	Daikin Industries	14/3/18	Just over 30% (250,000 units annually) reduction compared with FY13 in production outsourced to leading Chinese makers during FY14, with expansion of domestic production
	Panasonic	14/5/22	Switching from overseas production in China and other locations to domestic production for some white goods, including washing machines and air conditioners. Shift from summer 2014 to domestic manufacturing for products sold in Japan
	Lenovo	14/10/8	Switch from 2015 to domestic production at a joint venture established with NEC for some high-end products for corporate customers previously manufactured in China
Components	Japan Display	13/9/6	Expansion of production capacity by end-2013 by 50% from the current level (at time of announcement) at the core Mobarra plant, double by Jun–Jul 2014
	Toshiba	14/9/9	Expansion of production facilities for NAND flash memory at the Yokkaichi plant during summer 2014 and total investment of ¥500bn together with alliance partner SanDisk (US) for manufacturing of next-generation semiconductor memory