



# Germany and Japan

A central banker's perspective on their past and future relationship

*Speech at the Dinner meeting hosted by Deutsche Bundesbank*

*Regional Office in Berlin and Brandenburg*

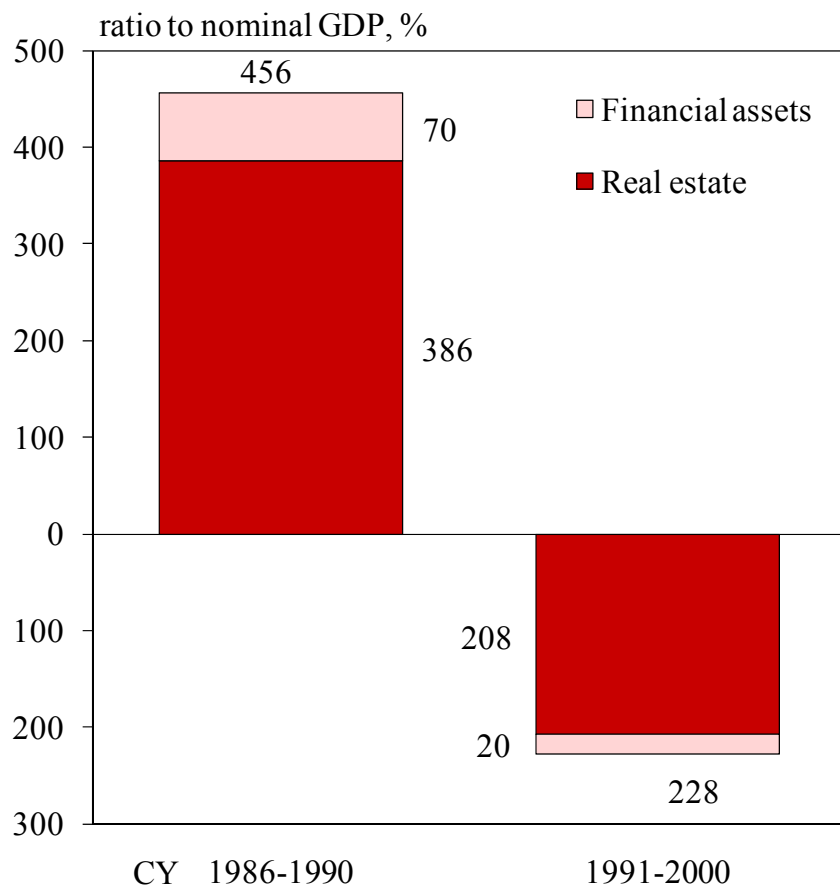
January 9, 2018

Hiroshi Nakaso

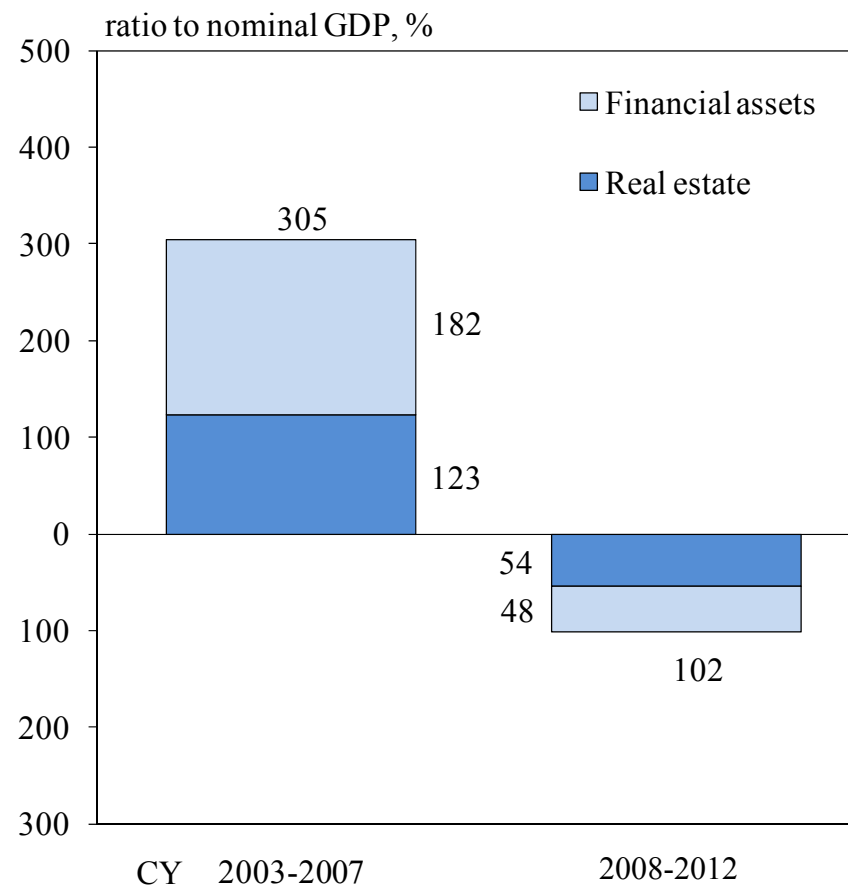
*Deputy Governor of the Bank of Japan*

# Scale of Asset Price Bubbles

*Japan*

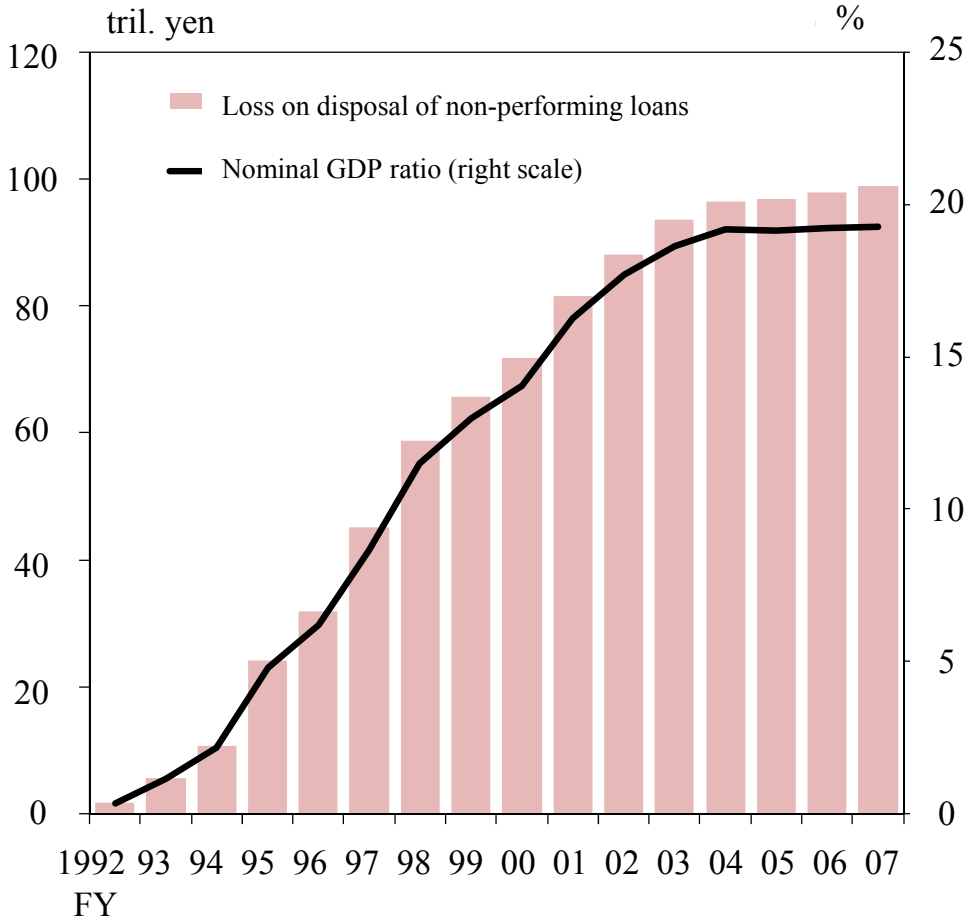


*United States*



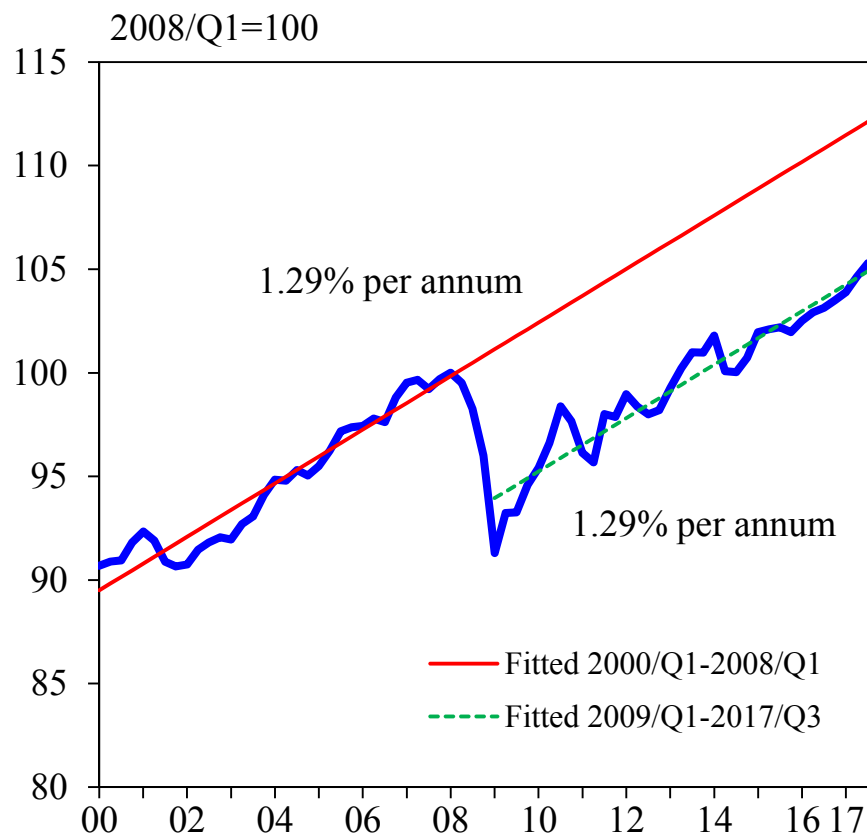
Note: Ratios are derived from the cumulative sum of capital gains and losses from each year.  
Sources: Cabinet Office; FRB; BEA.

# Loss on Disposal of Non-performing Loans Among Japanese Financial Institutions

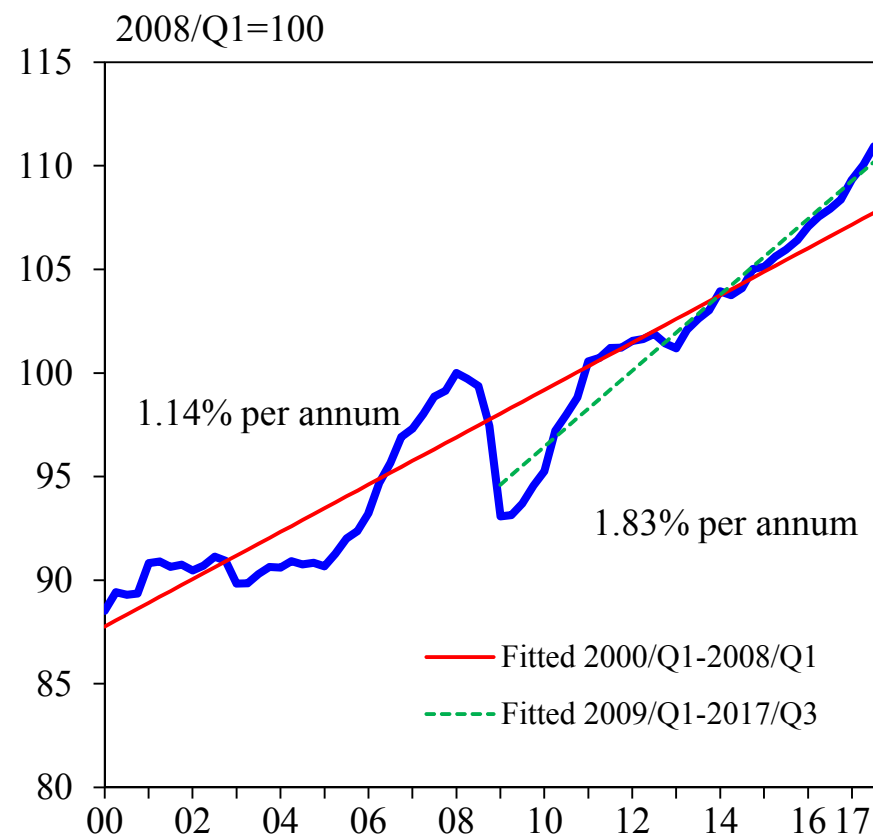


# Real GDP

*Japan*

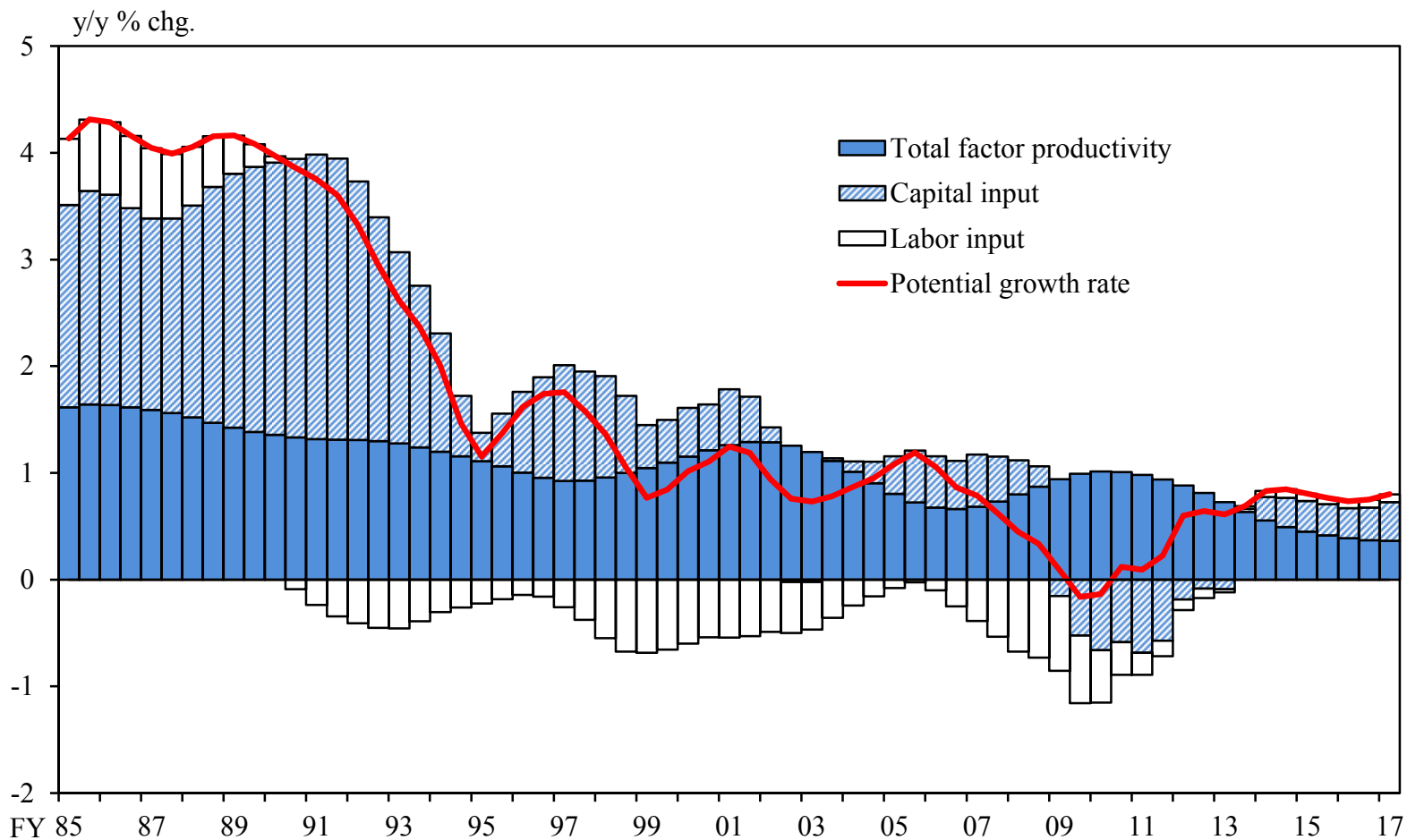


*Germany*



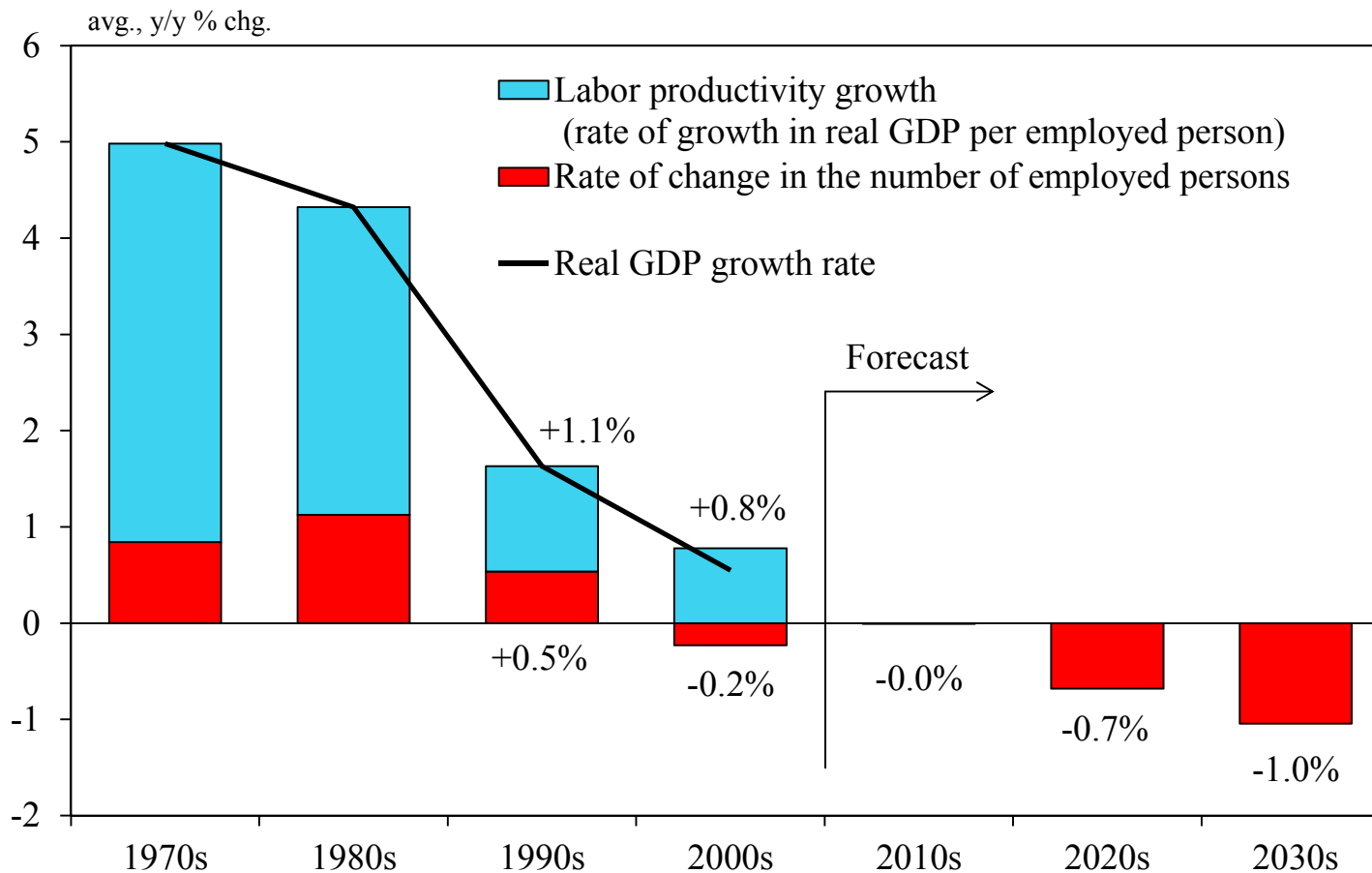
Note: The GDP series in the figures are seasonally-adjusted.  
Source: OECD.

# Potential Growth Rate



Note: Based on staff estimations. Figures for the first half of fiscal 2017 are those for 2017/Q2.  
 Source: Bank of Japan.

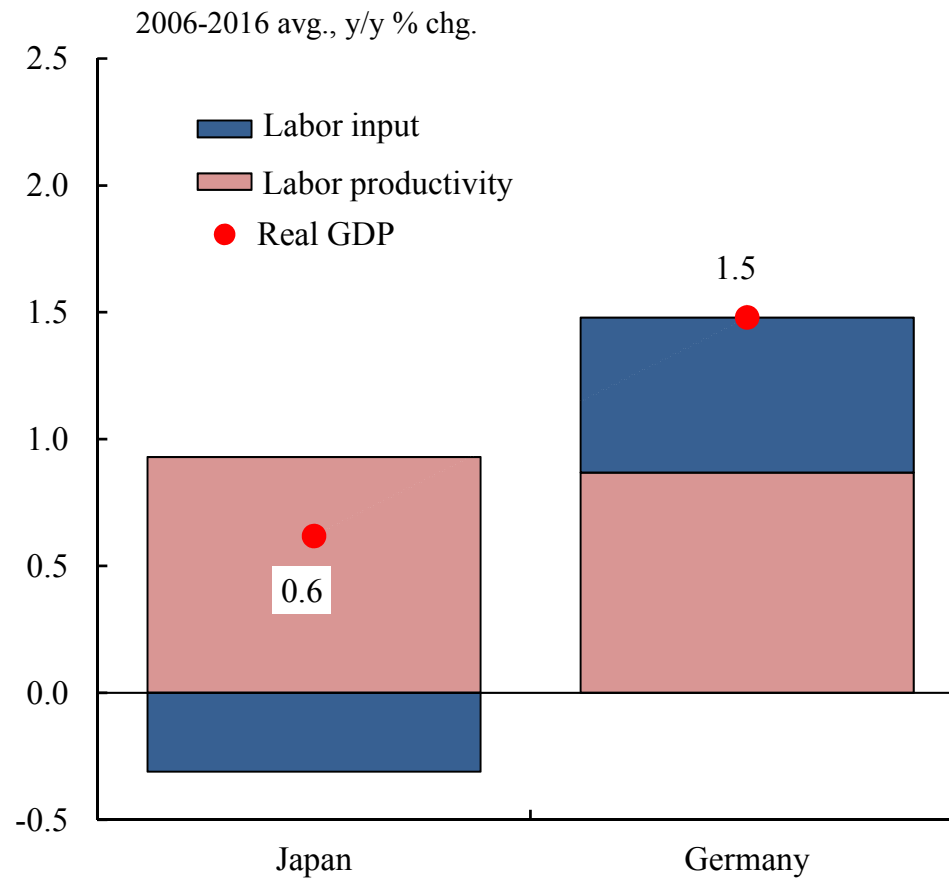
# Japan's Real GDP Growth



Note: Fiscal-year basis. The rates of change in the number of employed persons from 2017 onward are calculated using the population outlook (medium variant) and projected labor force participation rates (assuming the labor force participation rate for each age/sex group remains the same as in 2016).

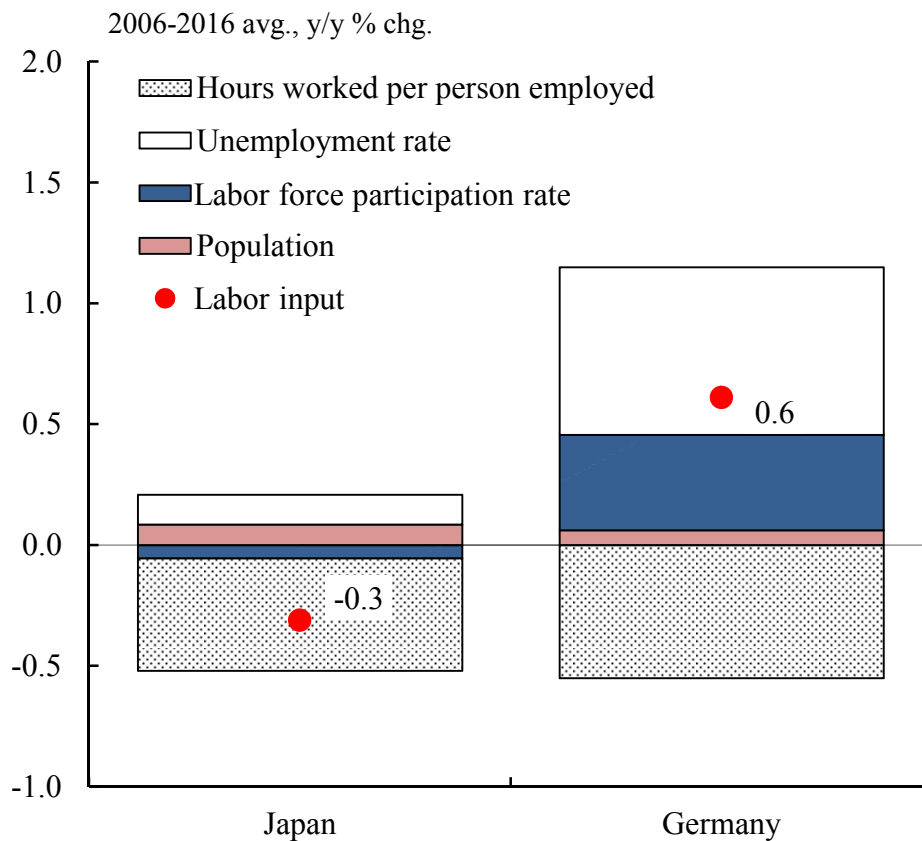
Sources: Cabinet Office; Ministry of Internal Affairs and Communications; National Institute of Population and Social Security Research.

# Real GDP



$$\Delta Real\ GDP \equiv \underbrace{\frac{\Delta Real\ GDP}{\Delta Hours\ worked}}_{\Delta Labor\ productivity} \times \underbrace{\Delta Hours\ worked}_{\Delta Labor\ input}$$

# Labor Input

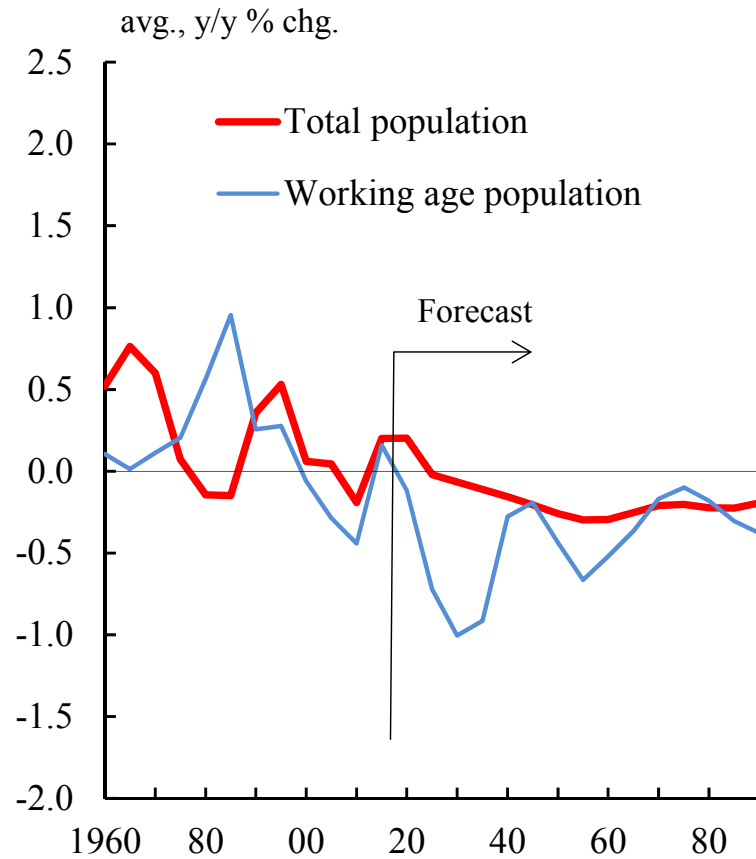


$$\Delta Labor\ input \equiv \underbrace{\frac{\Delta Hours\ worked}{\Delta Employment}}_{\Delta \text{Hours worked per person employed}} \times \underbrace{\frac{\Delta(Labor\ force - Unemployment)}{\Delta Labor\ force}}_{\Delta \text{Unemployment rate}} \times \underbrace{\frac{\Delta Labor\ force}{\Delta Population}}_{\Delta \text{Labor force participation rate}} \times \Delta Population$$

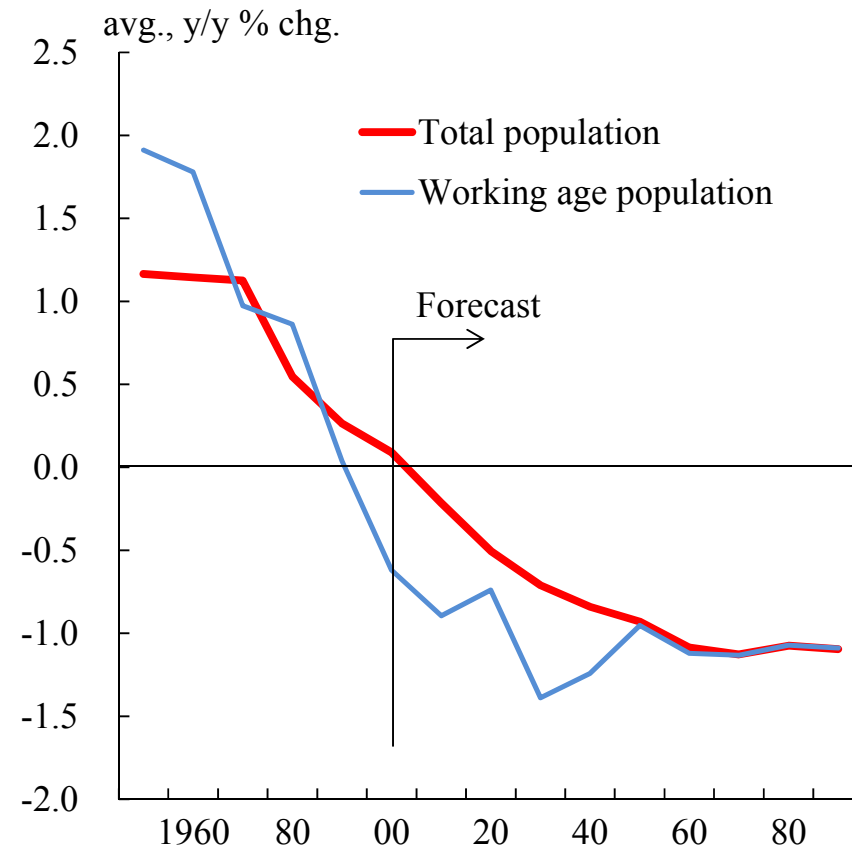


# Total Population and Working Age Population

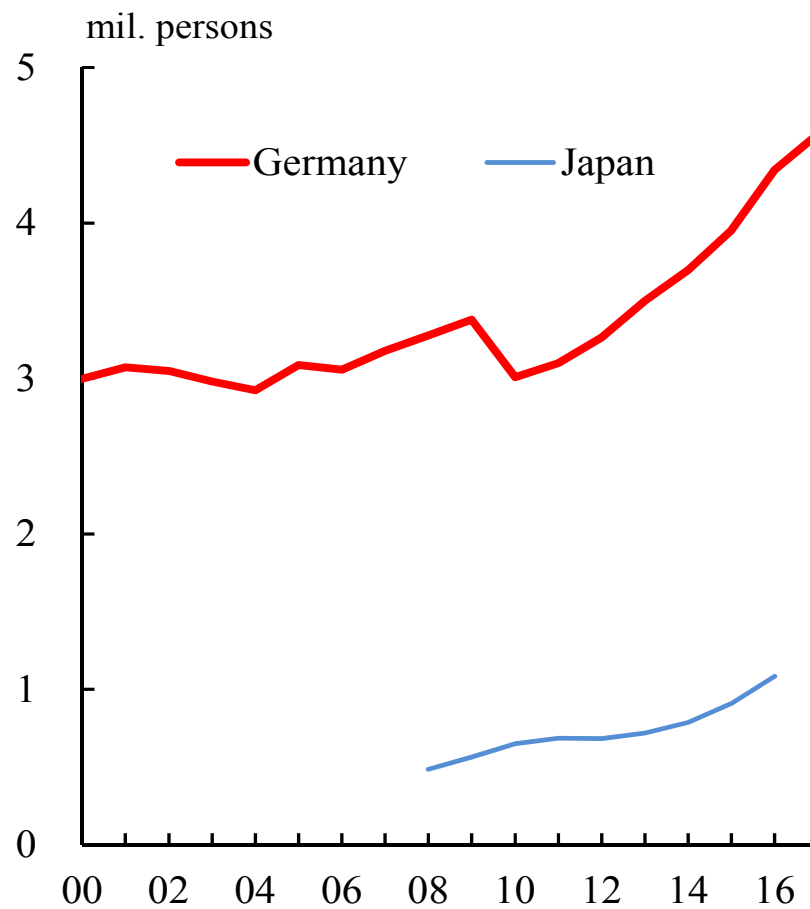
*Germany*



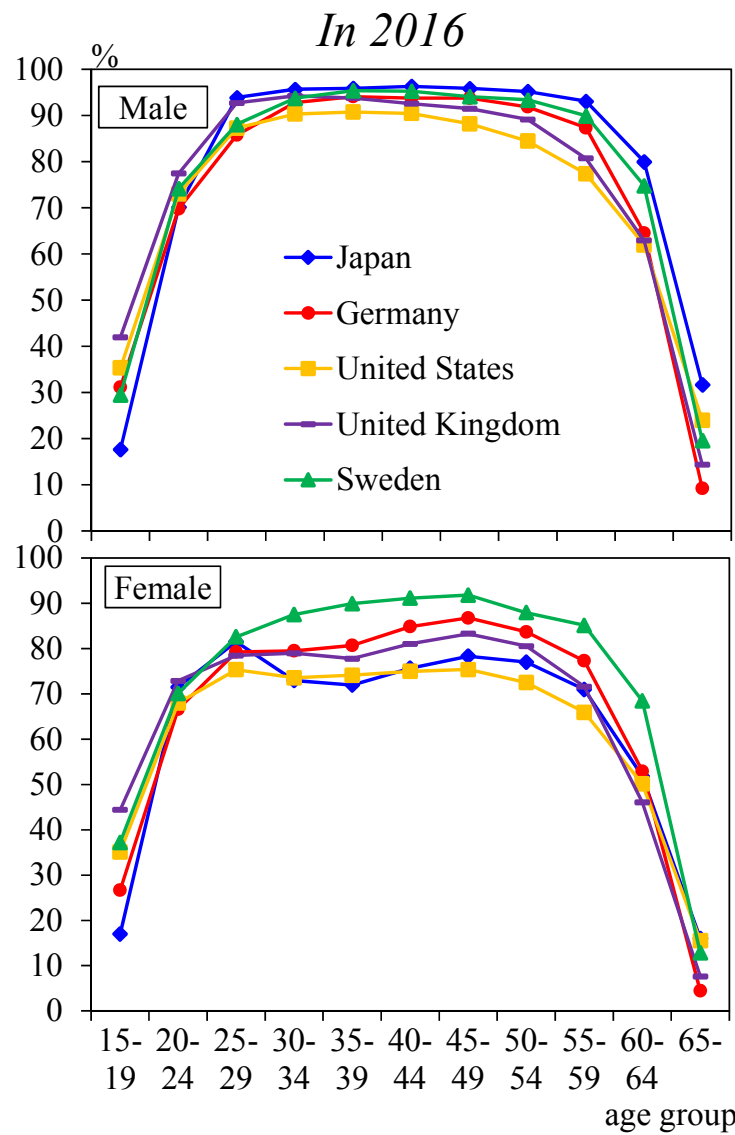
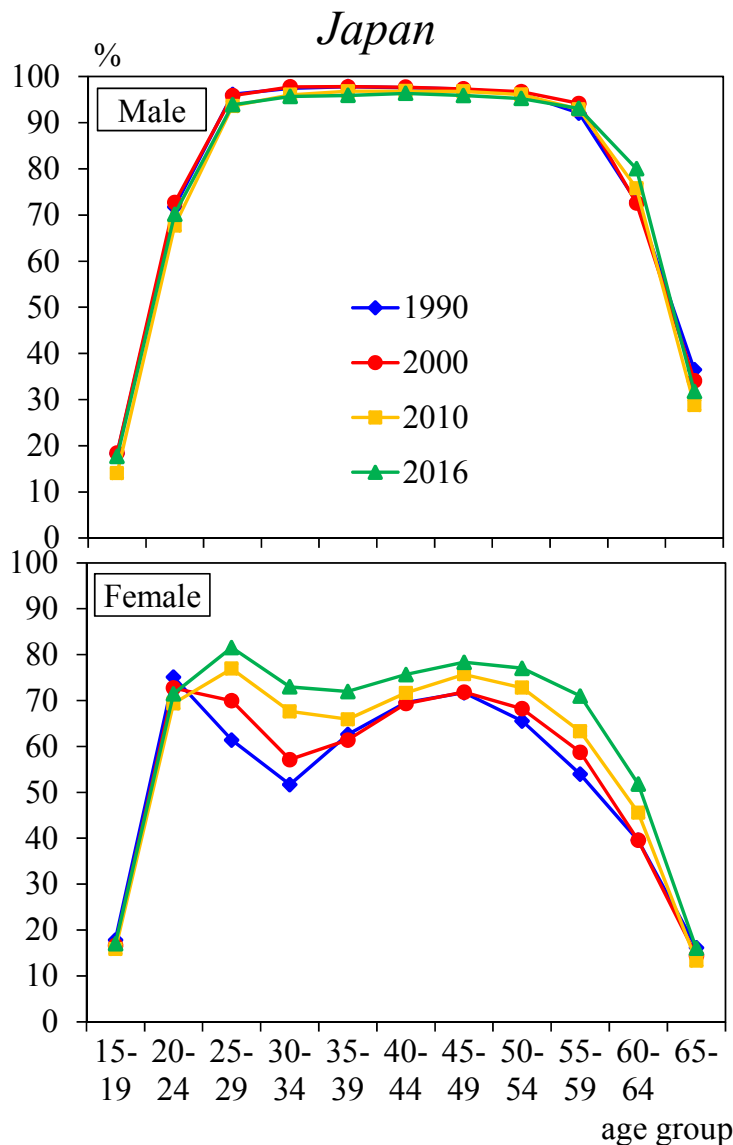
*Japan*



# Foreign Workers



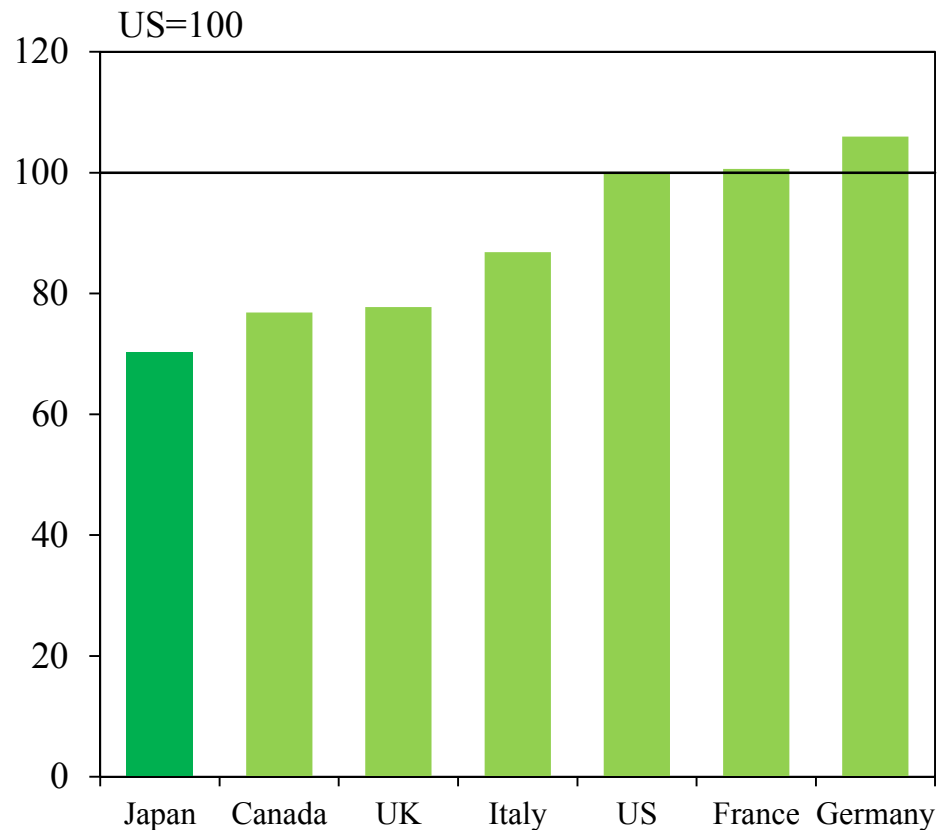
# Labor Force Participation Rates



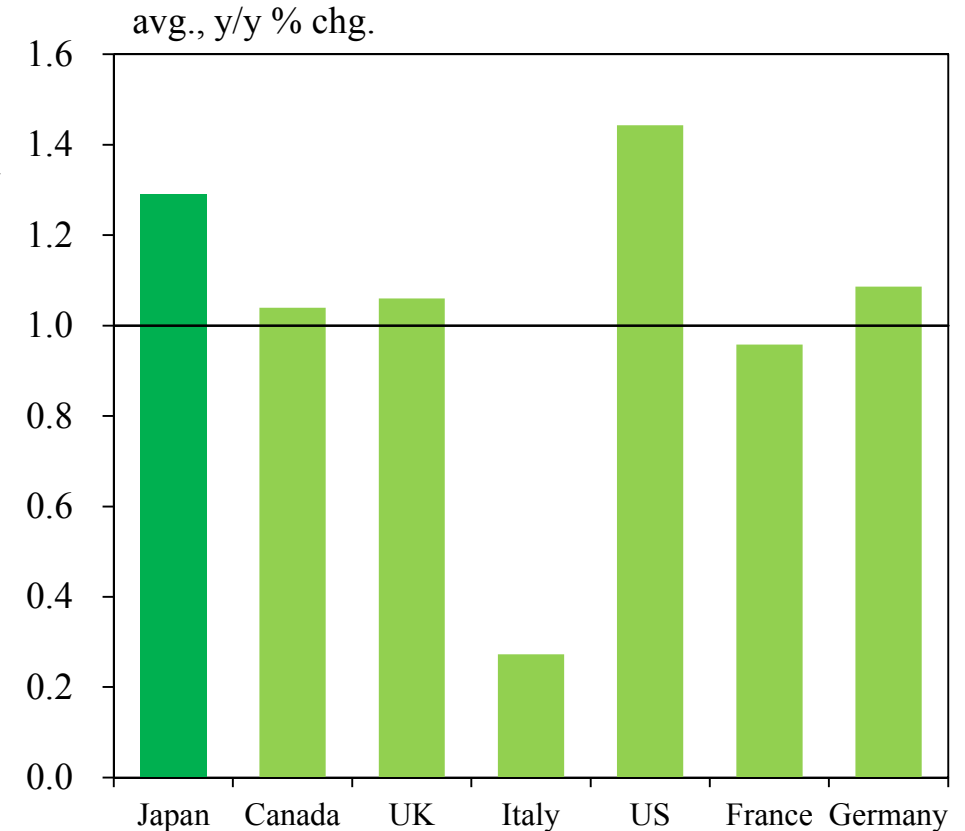
Sources: Ministry of Internal Affairs and Communications; OECD.

# International Comparisons of Labor Productivity

*Productivity Level*



*Productivity Growth Rate*

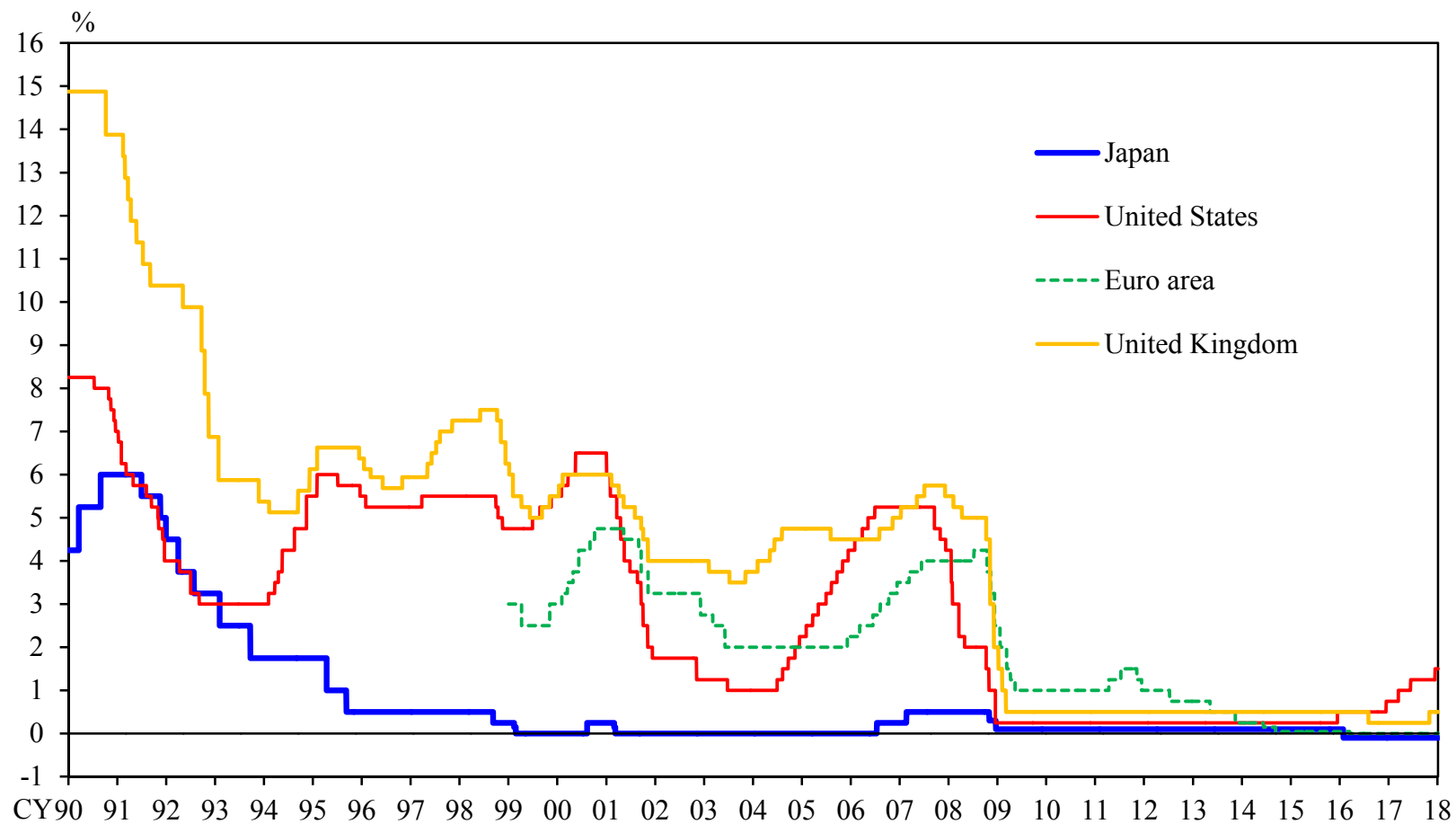


Notes: 1. The left panel shows the nominal GDP per hour worked as of 2015.

2. The right panel shows the average year-on-year rates of change in the real GDP per hour worked from 2000 to 2015.

Source: UK Office for National Statistics.

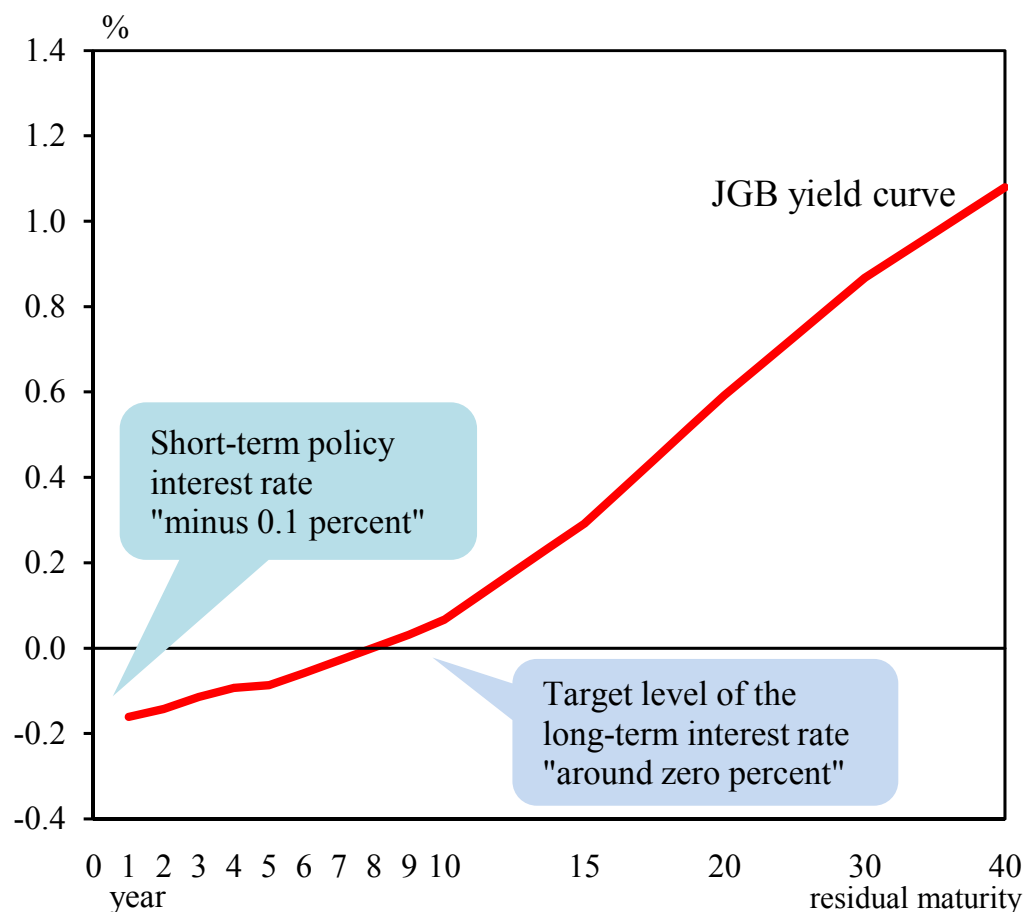
# Policy Interest Rates in Major Economies



Note: For Japan, for the period when no target interest rate was adopted, figures for the policy rate are the interest rate applied on excess reserves.  
Sources: Bank of Japan; Federal Reserve; European Central Bank; Bank of England; Bloomberg; Haver.

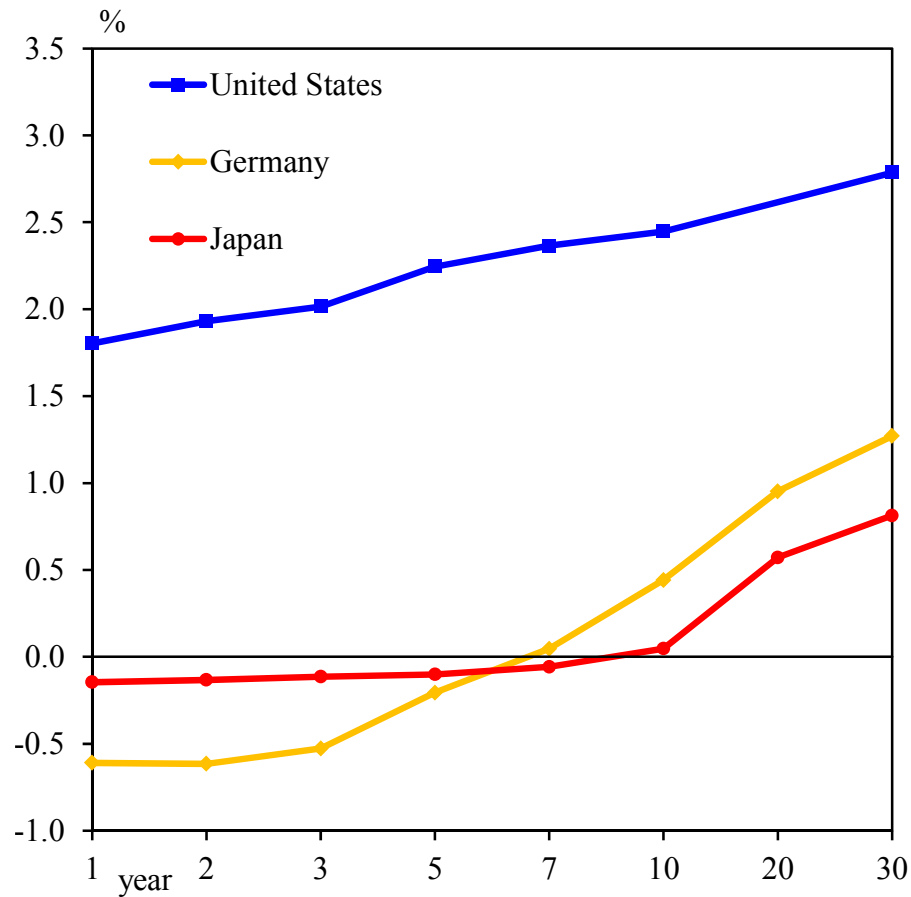
# QQE with Yield Curve Control

BOJ facilitates the formation of a yield curve that is considered most appropriate for maintaining the momentum toward achieving the price stability target of 2 percent, taking account of developments in economic activity and prices as well as financial conditions.

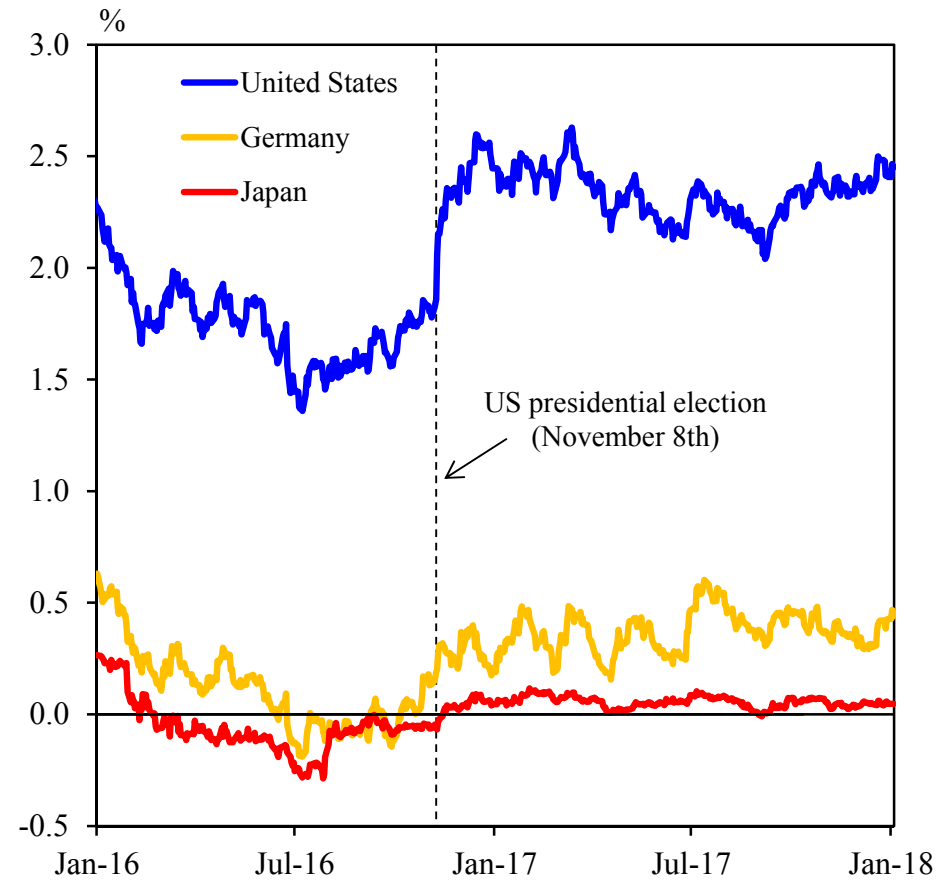


# Conduct of Yield Curve Control

*Yield Curves in Major Economies*



*10-year Government Bond Yields in Major Economies*



## Outlook for Economic Activity and Prices (October 2017)

y/y % chg.

	Real GDP	CPI (all items less fresh food)
Fiscal 2017	+ 1.9	+ 0.8
Forecasts made in July 2017	+ 1.8	+ 1.1
Fiscal 2018	+ 1.4	+ 1.4
Forecasts made in July 2017	+ 1.4	+ 1.5
Fiscal 2019	+ 0.7	+ 1.8
Forecasts made in July 2017	+ 0.7	+ 1.8

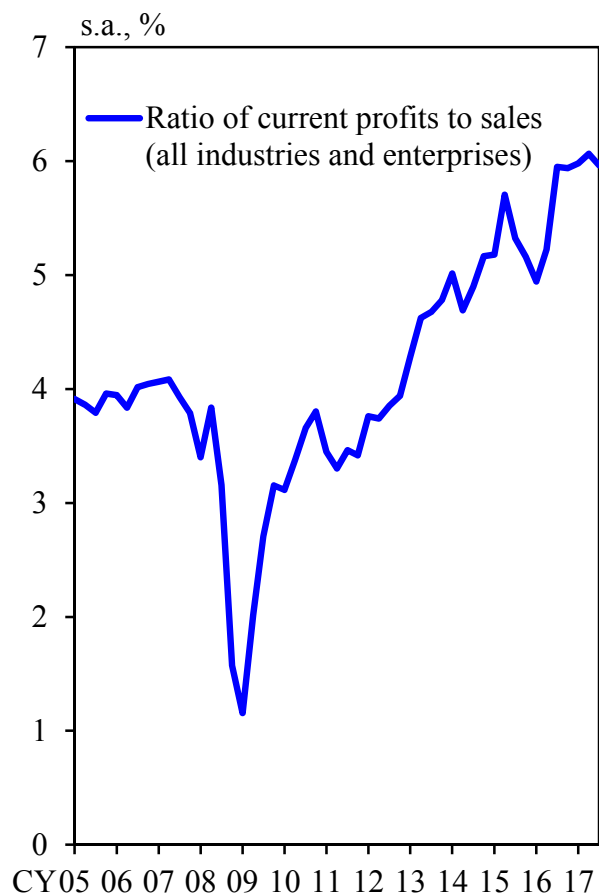
Note: Figures indicate the median of the Policy Board members' forecasts (point estimates). Figures for the CPI (all items less fresh food) exclude the effects of the consumption tax hikes.

Source: Bank of Japan.

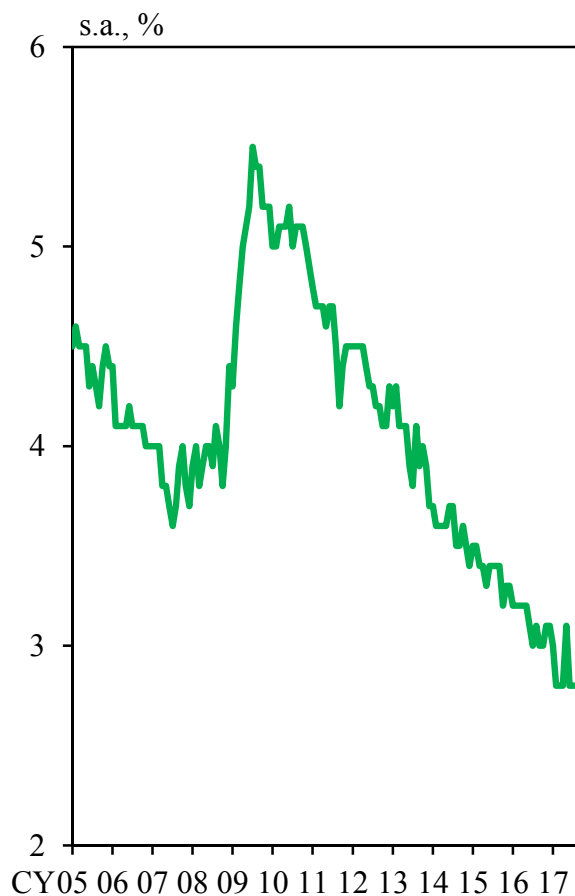


# Corporate Profits and Labor Market Conditions

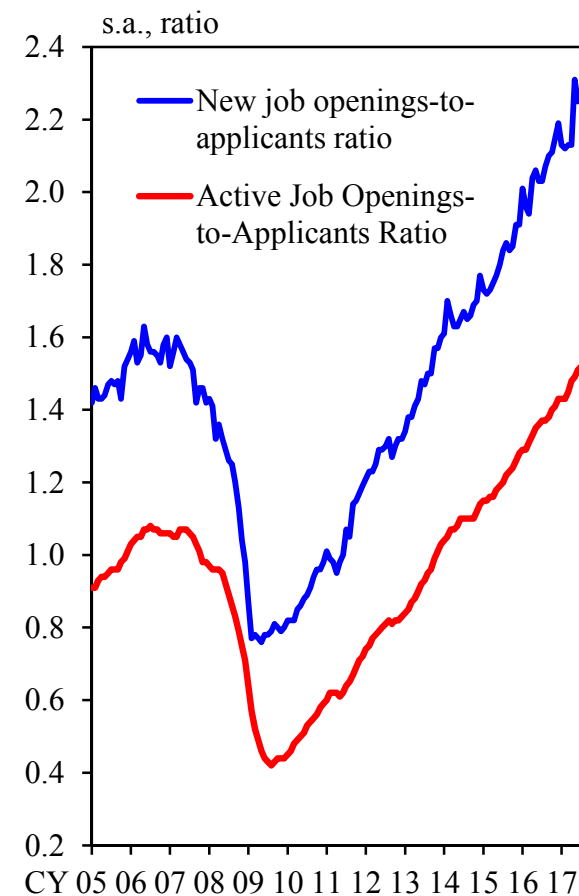
*Corporate Profits*



*Unemployment Rate*

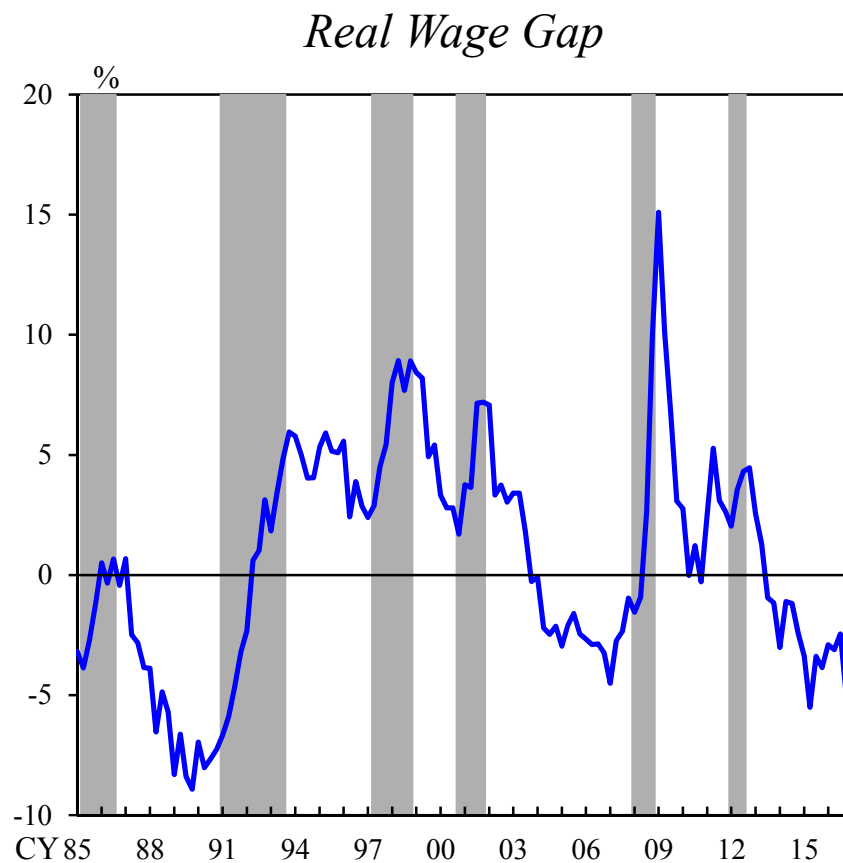
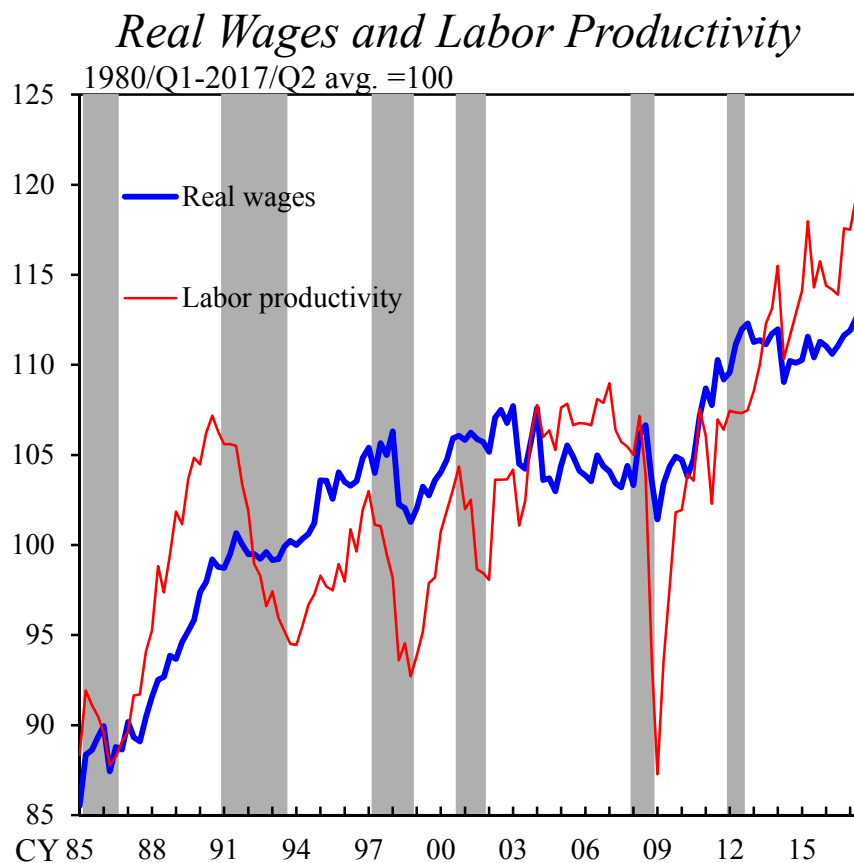


*Job Openings-to-applicants Ratio*



Note: Figures for corporate profits are based on the *Financial Statements Statistics of Corporations by Industry, Quarterly*. Excluding "finance and insurance."  
Sources: Ministry of Finance; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.

# Real Wage Gap



Notes: 1. Real wages = personnel expenses / number of employees / GDP deflator.

2. Labor productivity = (operating profits + personnel expenses + depreciation expenses) / number of employees / GDP deflator.

The data used to compute labor productivity except for the GDP deflator series are based on the “Financial Statements Statistics of Corporations by Industry, Quarterly,” and do not cover the finance and insurance industry.

3. The real wage gap is defined as the deviation of real wages from labor productivity.

4. Shaded areas indicate recession periods.

5. Data for real wages and labor productivity are seasonally adjusted.

Sources: Cabinet Office; Ministry of Finance.