



Economic Activity, Prices, and Monetary Policy in Japan

Speech at a Meeting with Business Leaders in Okayama

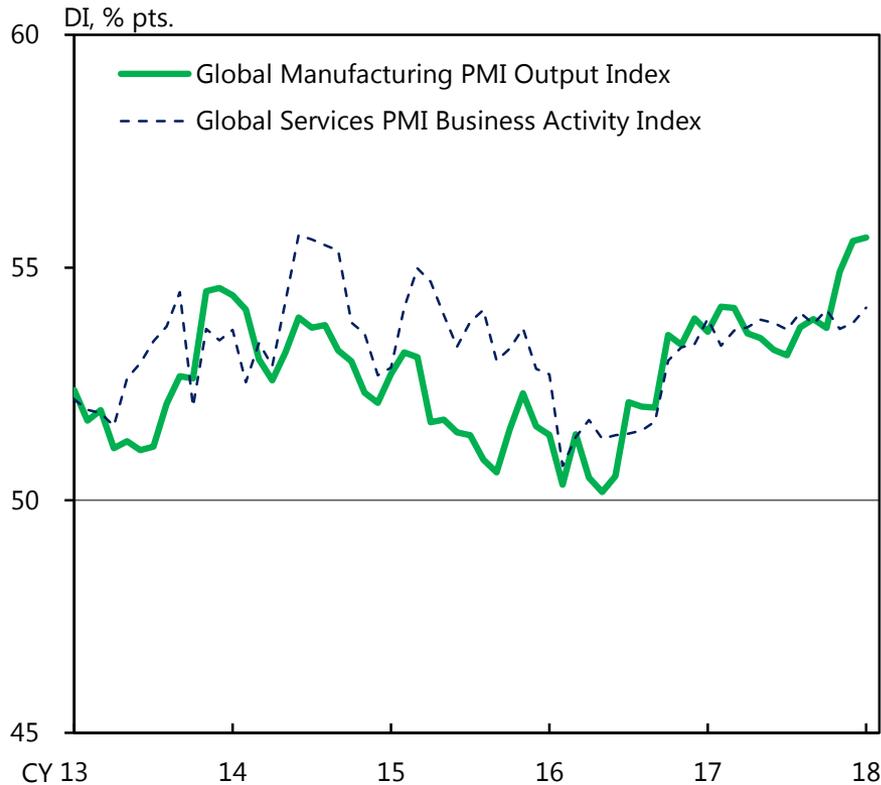
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Goushi Kataoka

Member of the Policy Board of the Bank of Japan

Chart 1 Global Economy (1)

Global PMI



Note: Figures are from the J.P. Morgan Global PMI. Figures above 50 indicate improvement and below 50 show deterioration on a month-on-month basis.

Source: IHS Markit (© and database right IHS Markit Ltd 2018. All rights reserved.).

Projections of Real GDP Growth by Major Economies (as of January 2018)

y/y % chg., % pts.

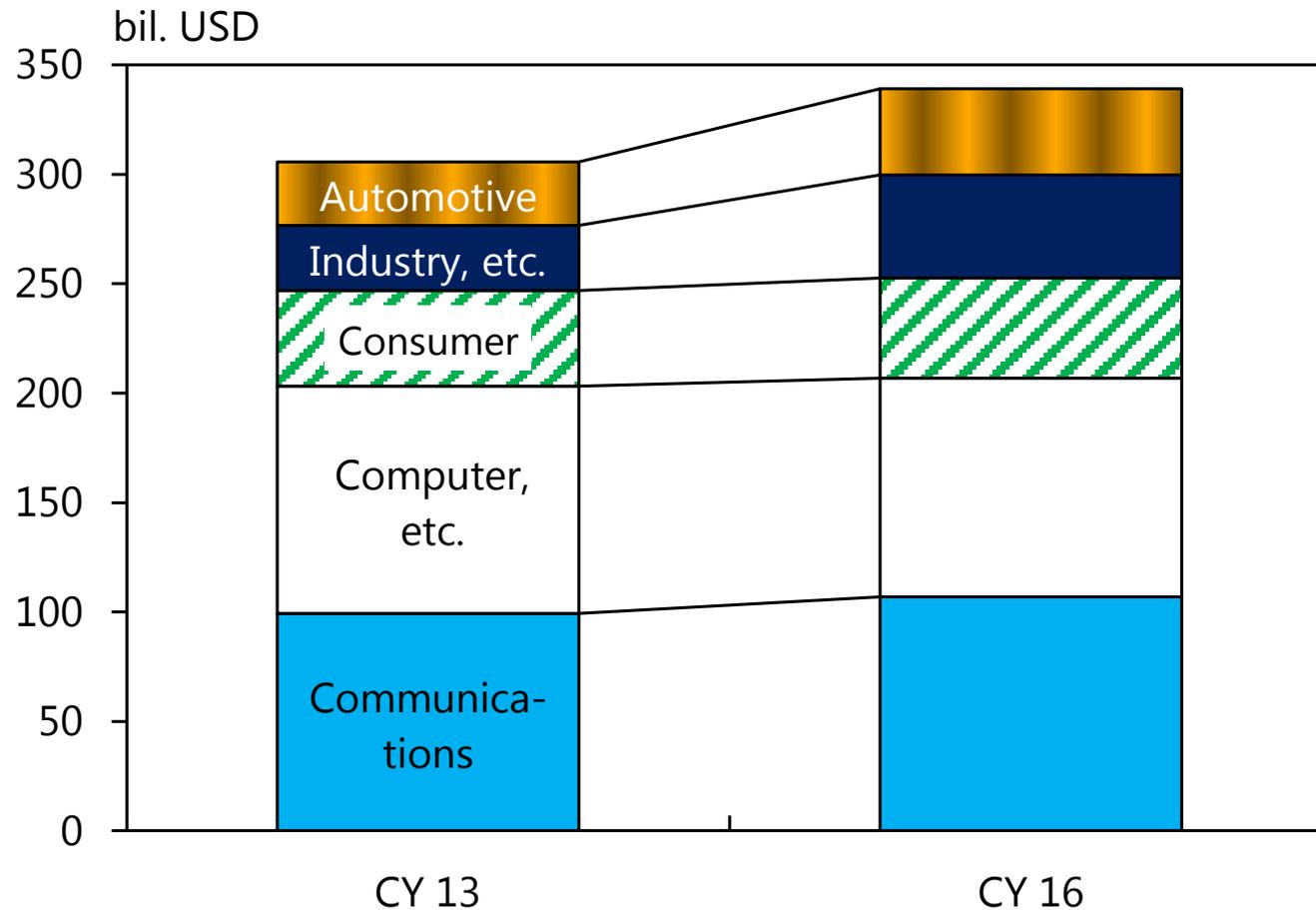
	Projection for CY 2018	Revision
World	3.9	+0.3
Advanced economies	2.3	+0.3
United States	2.7	+0.2
Euro area	2.2	+0.6
Emerging market and developing economies	4.9	+0.1
China	6.6	+0.6

Note: Figures in the column "Revision" indicate differences from the projections as of January 2017.

Source: IMF, "World Economic Outlook Update, January 2018."

Chart 2 Global Economy (2)

Global Semiconductor Demand by End Use



Note: "Communications" includes smartphones, "Computer, etc." includes PCs and data centers, "Consumer" mainly represents household electrical appliances, and "Industry, etc." includes industrial robots.
Source: Semiconductor Industry Association, 2017 and 2014 Factbook.

Chart 4 Japan's Economy (2)

Medians of the Policy Board Members' Forecasts (as of January 2018)

y/y % chg.

	Real GDP	CPI (all items less fresh food)	Excluding the effects of the consumption tax hike
FY 2017	+1.9	+0.8	
Forecasts made in October 2017	+1.9	+0.8	
FY 2018	+1.4	+1.4	
Forecasts made in October 2017	+1.4	+1.4	
FY 2019	+0.7	+2.3	+1.8
Forecasts made in October 2017	+0.7	+2.3	+1.8

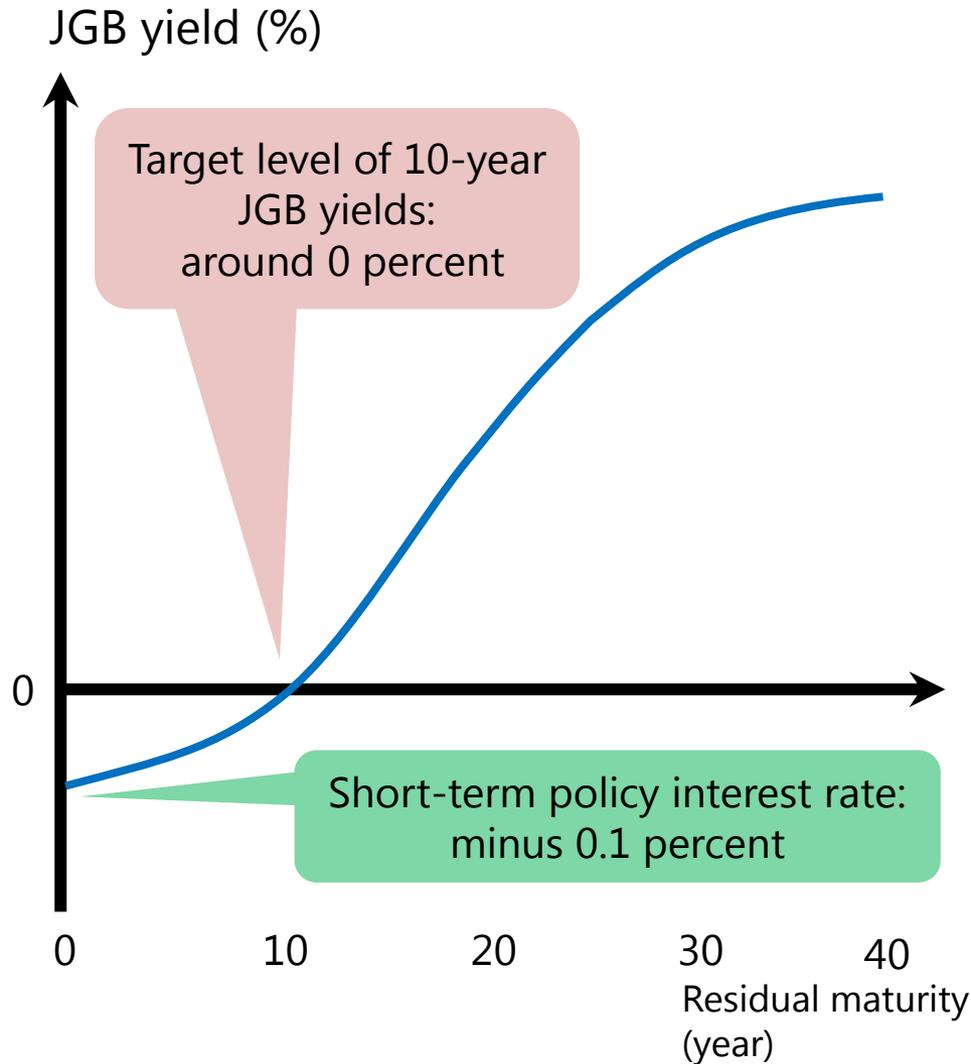
Notes: 1. Figures indicate the forecasts (point estimates) presented in the January 2018 Outlook Report.

2. The consumption tax hike scheduled to take place in October 2019 (to 10 percent) and the reduced tax rate to be applied to food and beverages (excluding alcohol and dining-out) and newspapers are incorporated in the forecasts.

Source: Bank of Japan.

Chart 5 QQE with Yield Curve Control

Yield Curve Control



Inflation-Overshooting Commitment

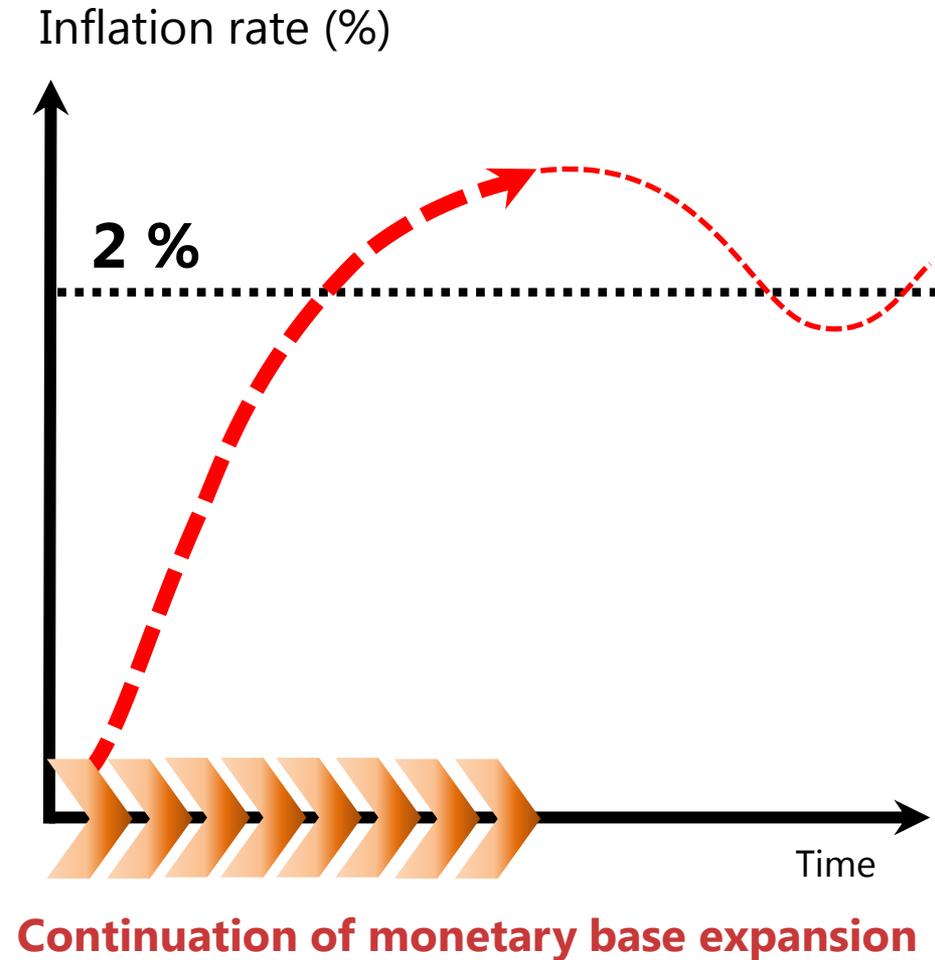


Chart 6 Transmission Channels of Monetary Easing to Prices

Decline in Nominal Interest Rates and Risk Premiums

Declining real interest rates through declining nominal interest rates
Facilitating private investment
Stabilizing financial markets
Exerting synergy effects with fiscal policy

1

Reinforcement of Commitment

Improving credibility in inflation targeting policy

4

Improvement in Output Gap

Increasing upward pressure on wages
Improving labor market conditions
Raising capital utilization rates

2

Rise in Inflation Expectations

Adaptive formation of inflation expectations

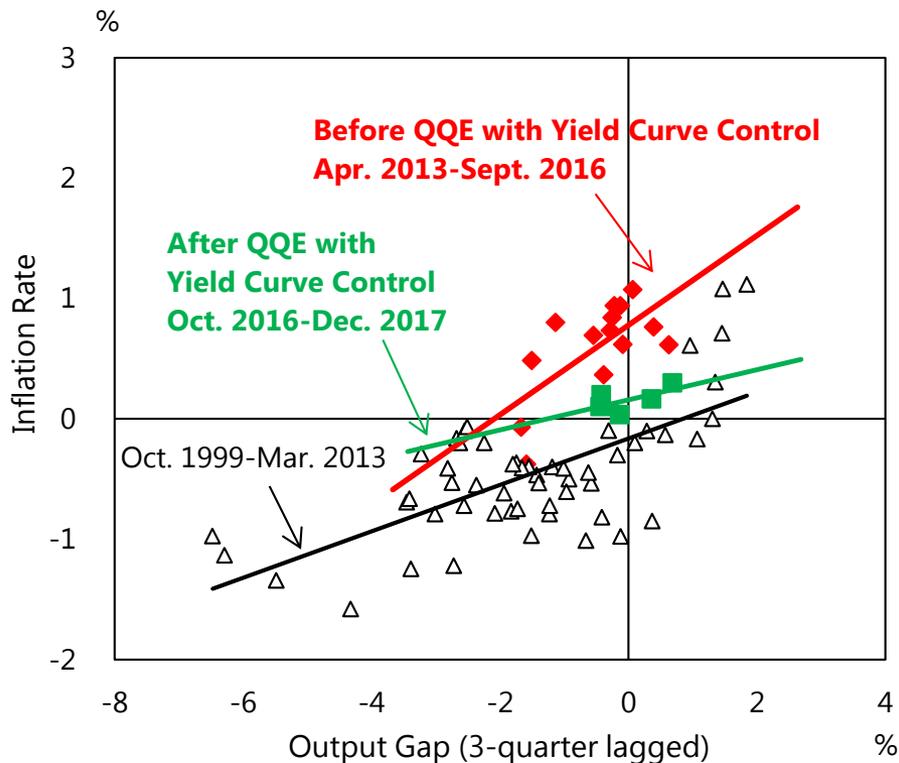
3

Greater increases in base wages
Facilitating cost pass-through
Realization of inflation expectations
Increasing effectiveness of monetary easing

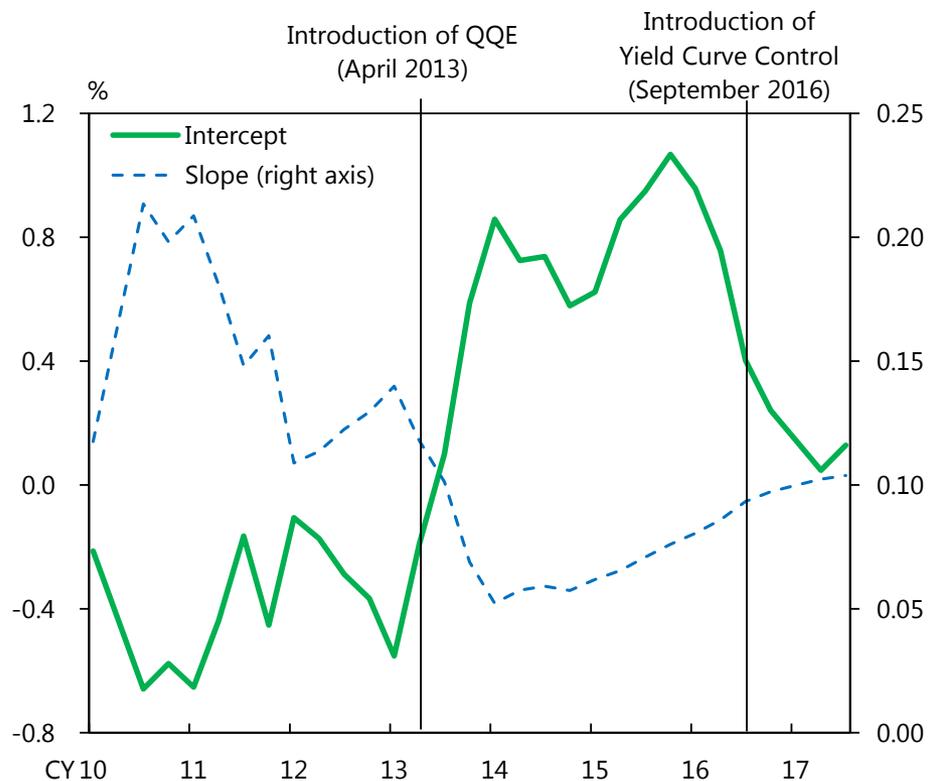
Increase in Inflation Rate
Achievement and Maintenance of the Price Stability Target

Chart 7 Output Gap and Inflation Rate

Output Gap and Inflation Rate



Reference: Intercept and Slope of the Phillips Curve

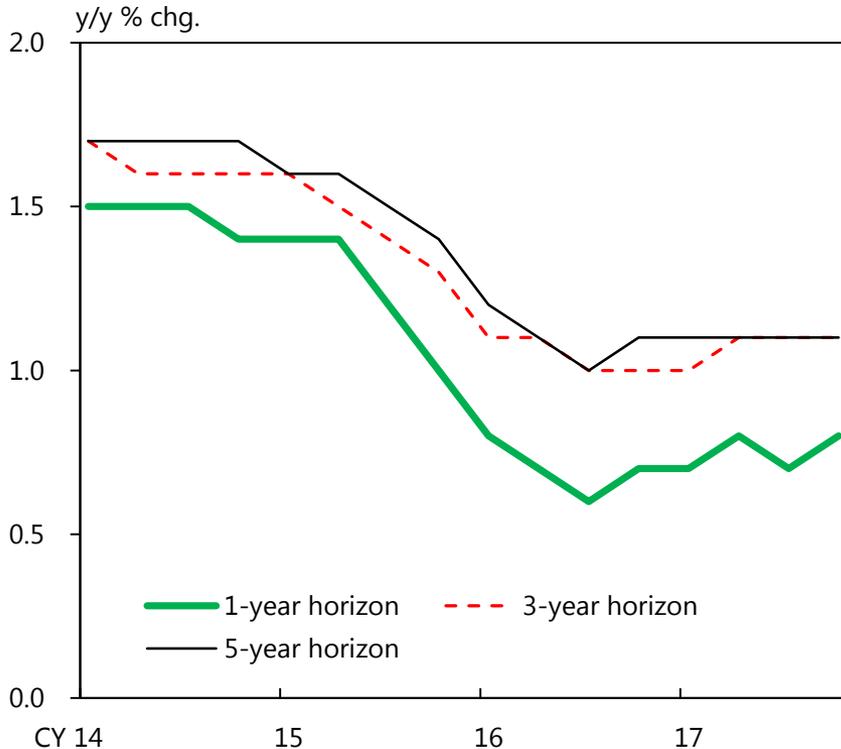


- Notes: 1. Trend lines are determined as $\langle \text{Inflation Rate} \rangle = \text{Intercept} + \text{Slope} * \langle \text{Output Gap} [-3] \rangle$.
2. Inflation rate (vertical axis) shows year-on-year growth in the CPI (all items less fresh food and energy).
3. Output gap (horizontal axis) is lagged behind the inflation rate by 3 quarters. Figures are estimated by the Research and Statistics Department of the Bank of Japan (lag is determined by timing correlation).

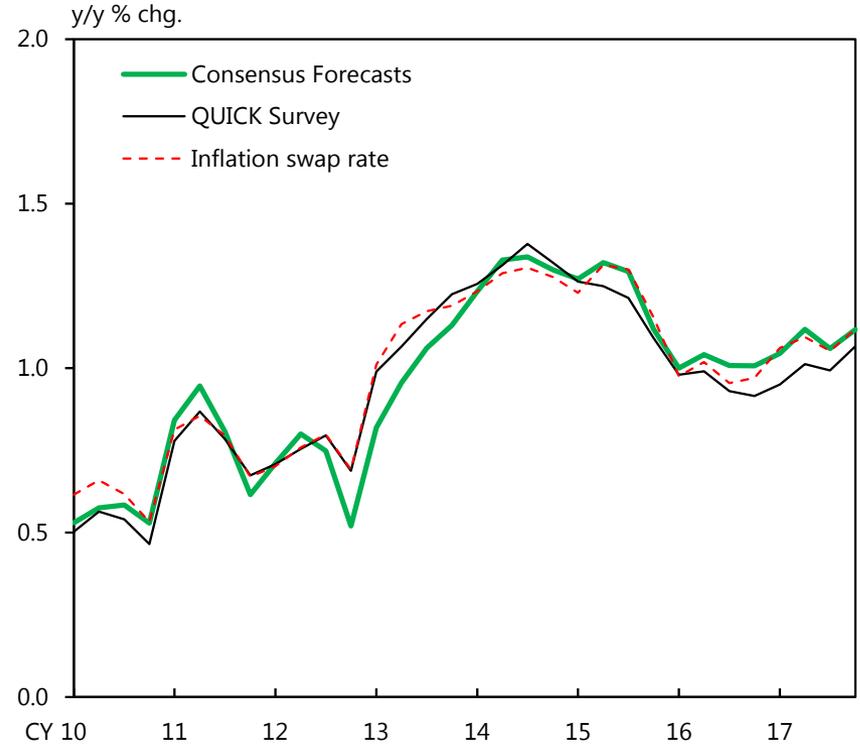
- Notes: 1. Figures are estimation results of the Phillips curve obtained by employing time-varying intercepts and slopes in the left-hand panel. Estimation period is from January 1983 through December 2017.
2. Output gap is lagged by 3 quarters (lag is determined by the AIC).
- Sources: Ministry of Internal Affairs and Communications; Bank of Japan.

Chart 8 Inflation Expectations

Firms' Inflation Expectations (*Tankan*)



Synthetic Indicators of Inflation Expectations Obtained through Principal Component Analysis (Medium- to Long-Term)

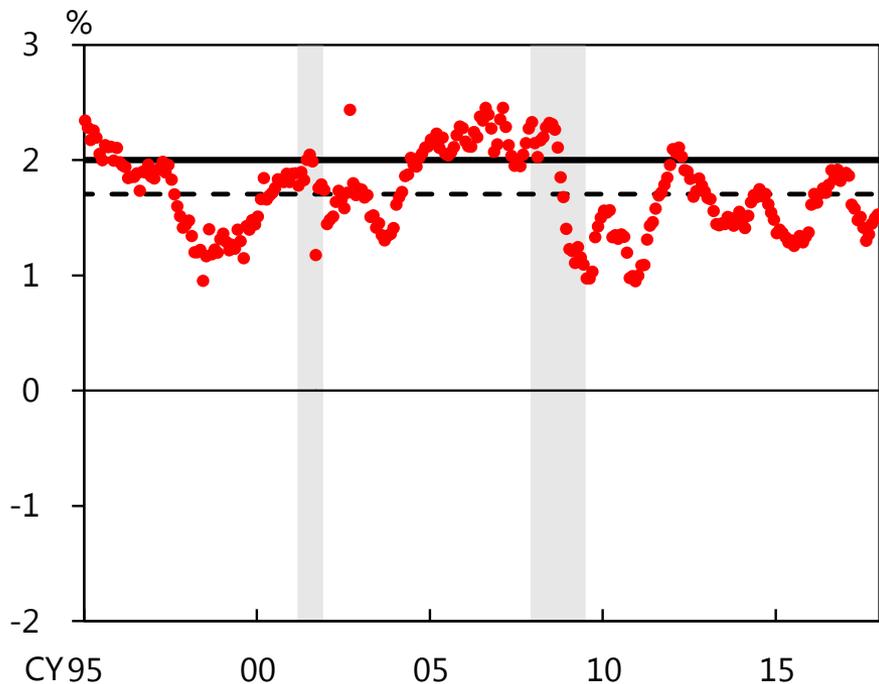


- Notes: 1. Lines in the left-hand panel show the average outlook for general prices for all industries and enterprises released in the *Tankan*.
2. Inflation expectations of firms, households, and experts are synthesized in the right-hand panel. Inflation expectations of firms are represented by the *Tankan* and those of households are represented by the Bank's *Opinion Survey on the General Public's Views and Behavior*. For experts' inflation expectations, data from the Consensus Forecasts, the QUICK Survey, and the inflation swap rate are used, which is shown as the different lines respectively.
3. Semiannual data from the Consensus Forecasts up through 2014/Q2 are linearly interpolated. Figures for the Opinion Survey exclude inflation expectations by respondents whose annual inflation expectations were $\pm 5\%$ or greater. The output prices DI in the *Tankan* represents the difference between the share of firms that raised prices in the preceding three months and the share of firms that lowered prices.

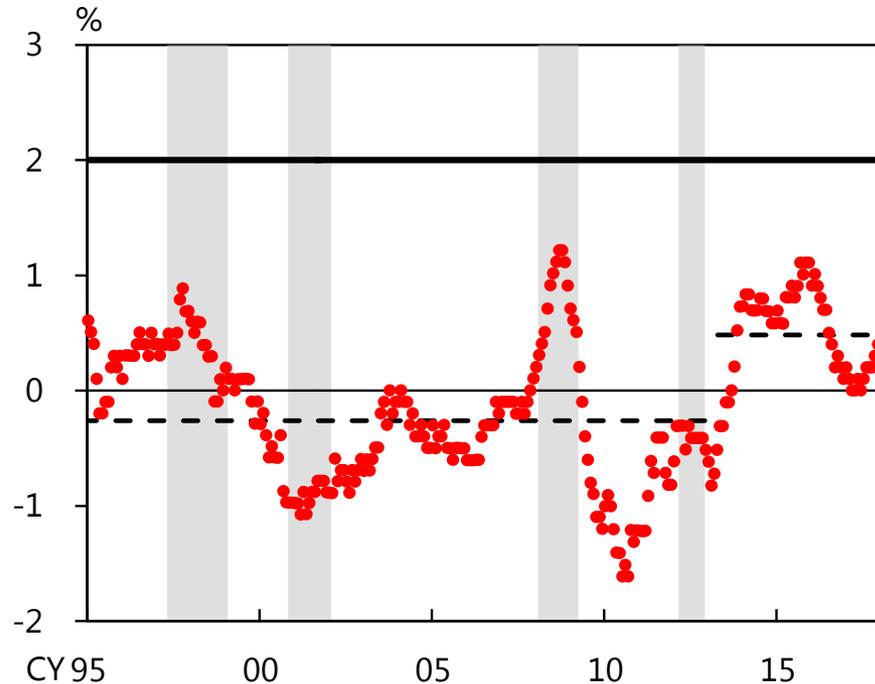
Sources: Consensus Economics Inc., "Consensus Forecasts"; QUICK, "QUICK Monthly Market Survey (Bonds)"; Bloomberg; Bank of Japan.

Chart 9 Comparison of Inflation Rates in the United States and Japan

United States



Japan

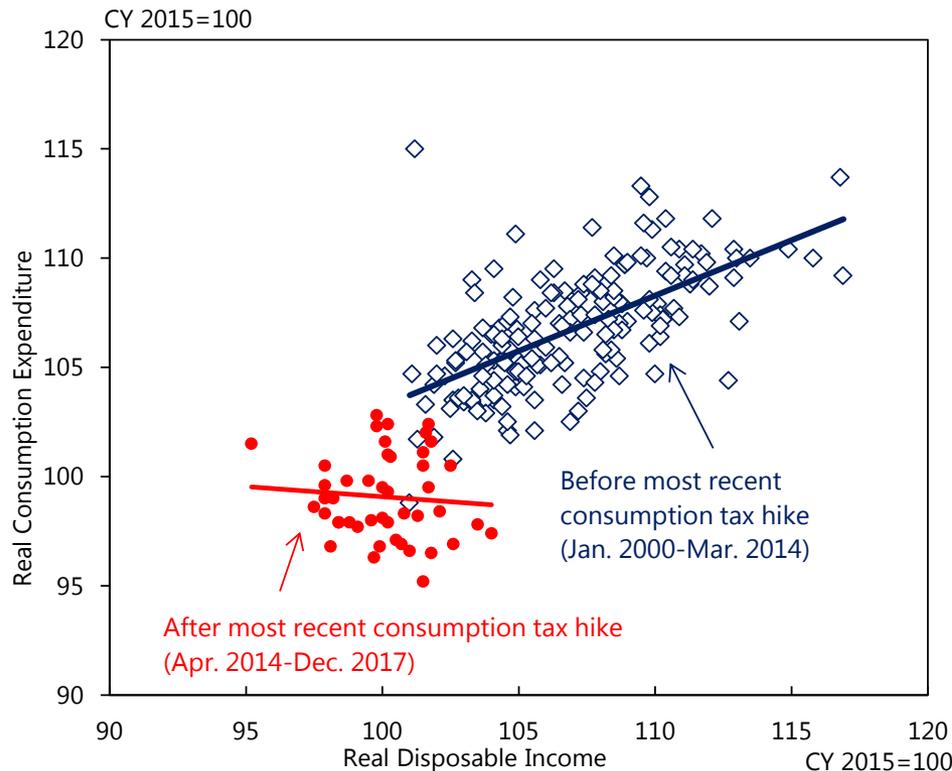


- Notes: 1. Red dots show year-on-year changes in the PCE deflator (all items less fresh food and energy) for the United States, and those in the CPI (all items less fresh food, energy, and excluding direct effects of consumption tax hikes) for Japan.
2. Bold black lines indicate inflation rate of 2 percentage points.
3. Black broken lines indicate average inflation rate after CY 95 (discontinued at the introduction of QQE for Japan).
4. Gray bands indicate recession periods (peaks and bottoms of business cycle are those determined by the National Bureau of Economic Research for the United States and Cabinet Office for Japan).

Sources: Cabinet Office; Ministry of Internal Affairs and Communications; Federal Reserve Bank of St. Louis; National Bureau of Economic Research.

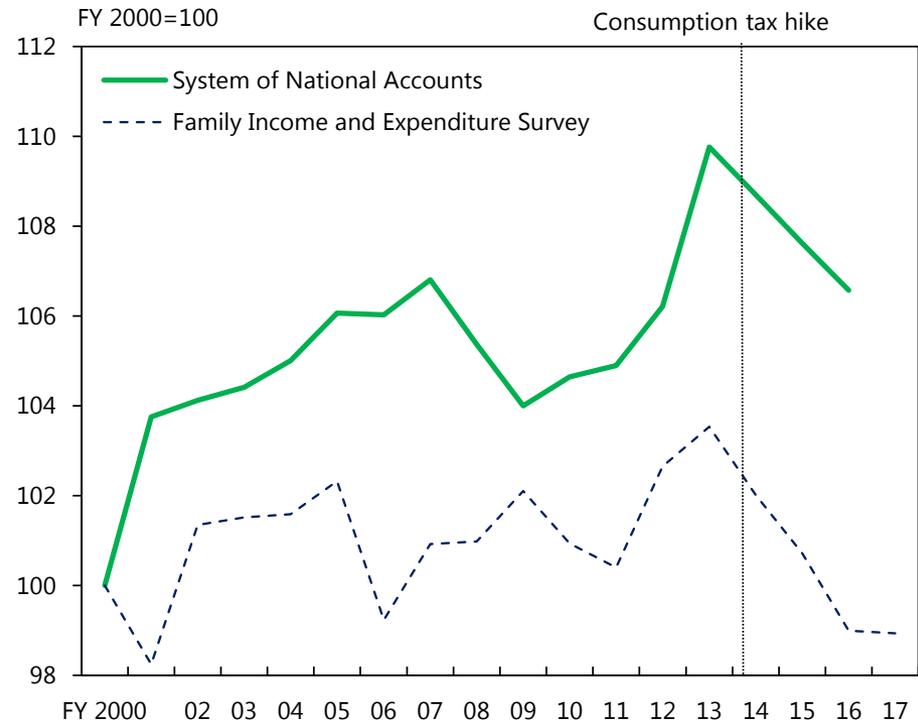
Chart 10 Consumption before and after Consumption Tax Hike

Real Disposable Income and Real Consumption Expenditures



Note: Data are for workers' households with two or more members.
 Source: Ministry of Internal Affairs and Communications, "Family Income and Expenditure Survey."

Average Consumption Propensity



- Notes: 1. Average Consumption Propensity = Household Consumption Expenditure / Household Disposable Income.
 2. Disposable income for National Accounts includes that of private unincorporated enterprises.
 3. Figures for the *Family Income and Expenditure Survey* are those for the average of each fiscal year (average of April to December for 2017).

Sources: Cabinet Office, "System of National Accounts"; Ministry of Internal Affairs and Communications, "Family Income and Expenditure Survey."