



The Effects on Expected Real Interest Rates and Expected Rates of Inflation through QQE

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Kikuo Iwata

Deputy Governor of the Bank of Japan

Regime Change to Inflation Targeting

- What does the term "regime" mean in economic policy?
- Inflation and deflation are ultimately "monetary phenomena"
 - ⇒ Price stability can be achieved through monetary policy
- Setting the price stability target
 - "2 percent in terms of the year-on-year rate of change in the consumer price index (CPI)"

Tangibility of "Policy Regime Change"

Quantitative and Qualitative Monetary Easing

Commitment

Clear commitment that the BOJ "will achieve the price stability target of 2% at the earliest possible time, with a time horizon of about 2 years."

Actions

• **Increase in Quantity**

Increase the monetary base¹ at an annual pace of about ¥80 trillion (particularly through purchases of JGBs).

• **Change in Quality**

Purchases of riskier assets (JGBs with longer remaining maturities, ETFs and J-REITs).

Expansion

Expansion

Note: 1. Money supplied directly from the central bank to the financial system.

Lowering Expected Real Interest Rates through Working on Inflation Expectations(1)

Real costs of borrowing,
taking into account price changes
(Borrowers' subjective expectations)

Subjective forecast
based on respective
price projections

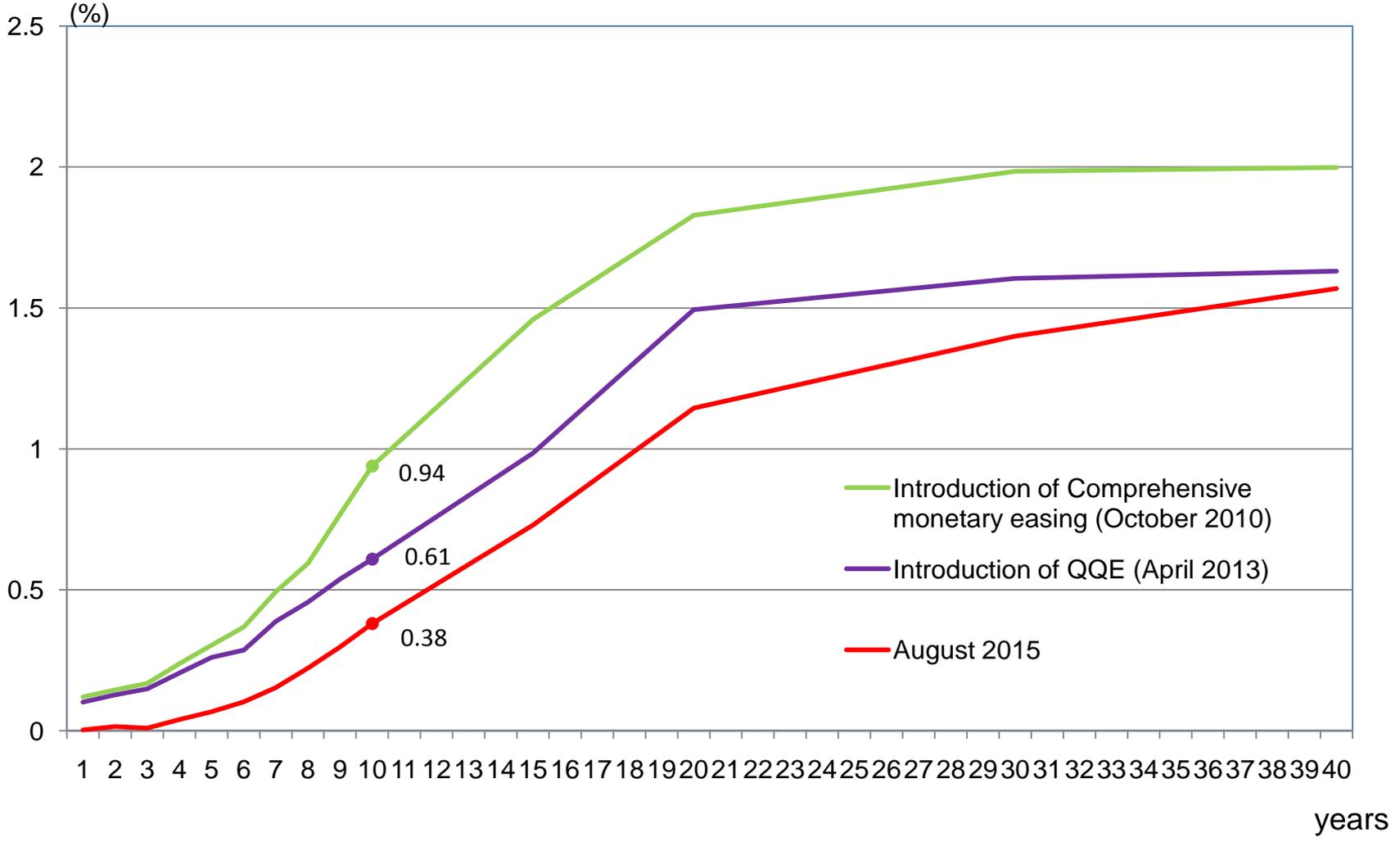
Visible in financial
markets or over the
counter

Expected real interest rates = Nominal interest rates
– Expected rates of inflation

Downward
pressure
by the QQE

Lowering Expected Real Interest Rates through Working on Inflation Expectations(2)

Nominal yield curves



Lowering Expected Real Interest Rates through Working on Inflation Expectations(3)

Expected real interest rates = Nominal interest rates

Analysis 2: The natural yield curve

— Expected rates of inflation

Analysis 1: Has Trend Inflation Shifted?

(References)

Kaihatsu, S. and J. Nakajima(2015), "Has Trend Inflation Shifted?: An Empirical Analysis with a Regime-Switching Model," Bank of Japan Working Paper Series, No.15-E-3.

Imakubo, K., H. Kojima, and J. Nakajima(2015), "The natural yield curve: its concept and measurement," Bank of Japan Working Paper Series, No.15-E-5.

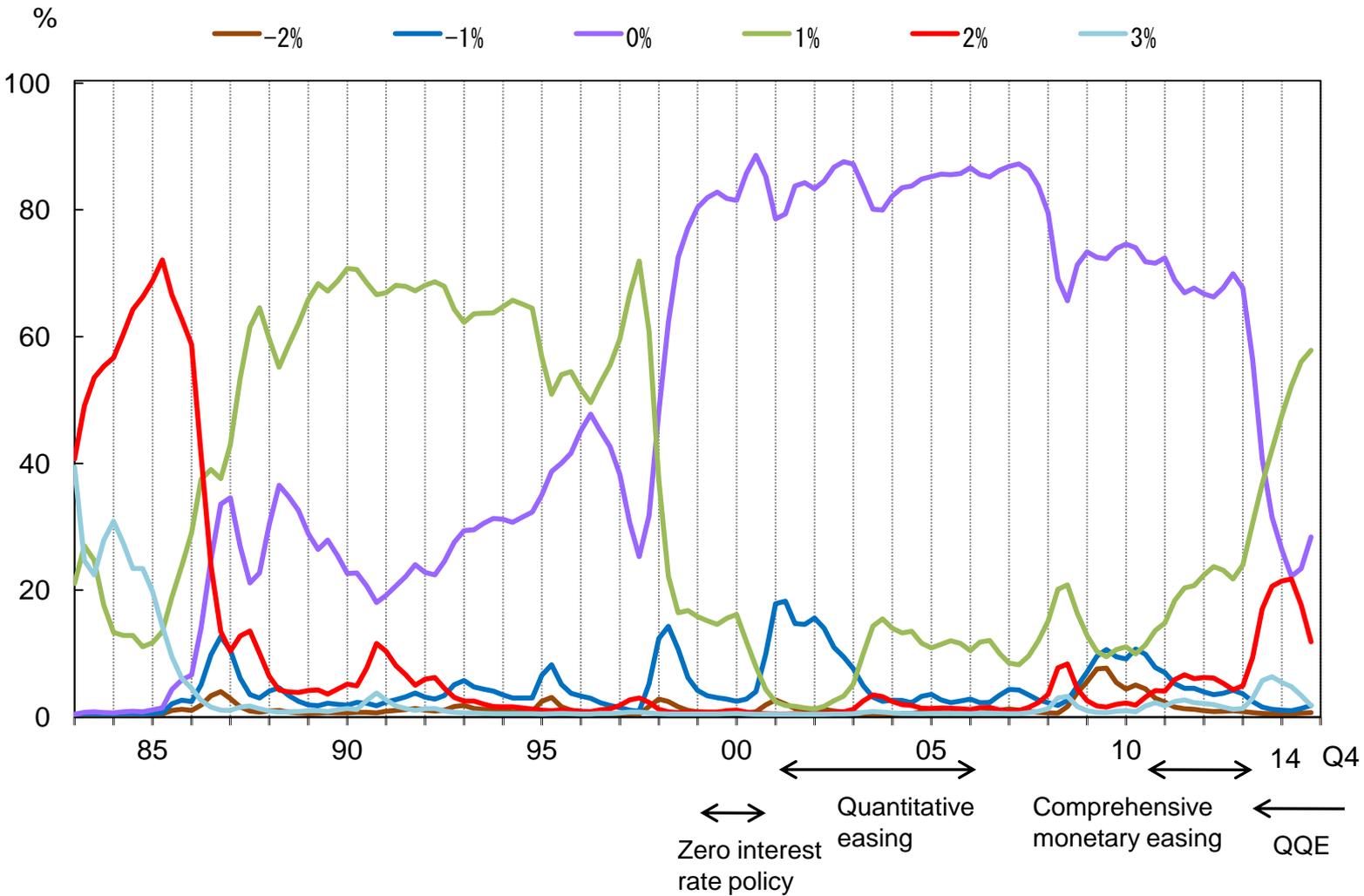
Has Trend Inflation Shifted? (1)

- Trend inflation is the private sector's perception about the level at which inflation is expected to prevail in the medium to long run.
- It serves as a practical measure of whether inflation expectations remain anchored in line with the price stability target.
- The authors assume regimes for the trend inflation at one-percent intervals, and estimate the probability of the trend inflation being in each regime.

Inflation rate = $F(\text{previous inflation rates, trend inflation, output gap}) + \text{error term.}$

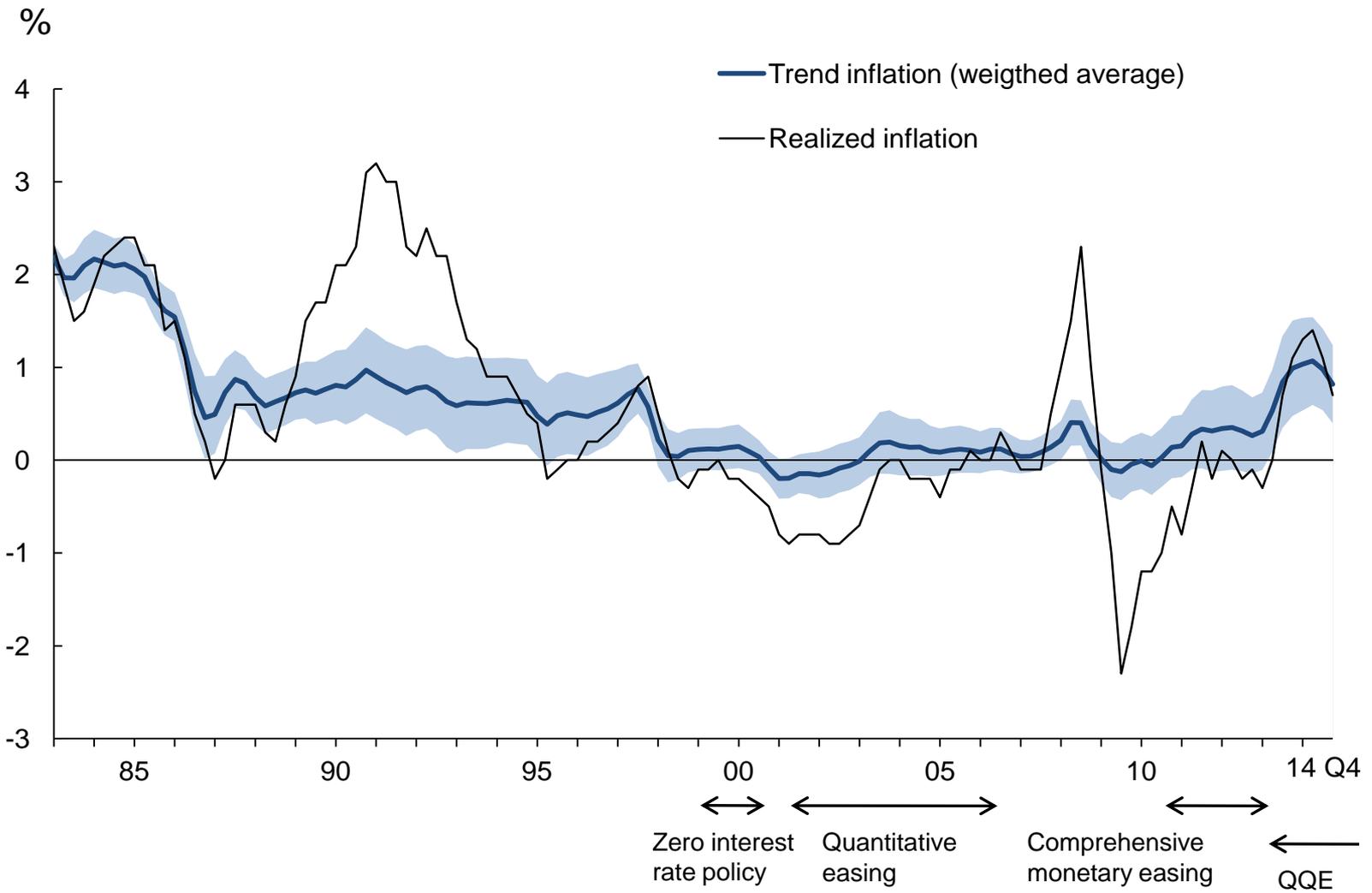
Has Trend Inflation Shifted? (2)

Posterior regime probability of trend inflation



Has Trend Inflation Shifted? (3)

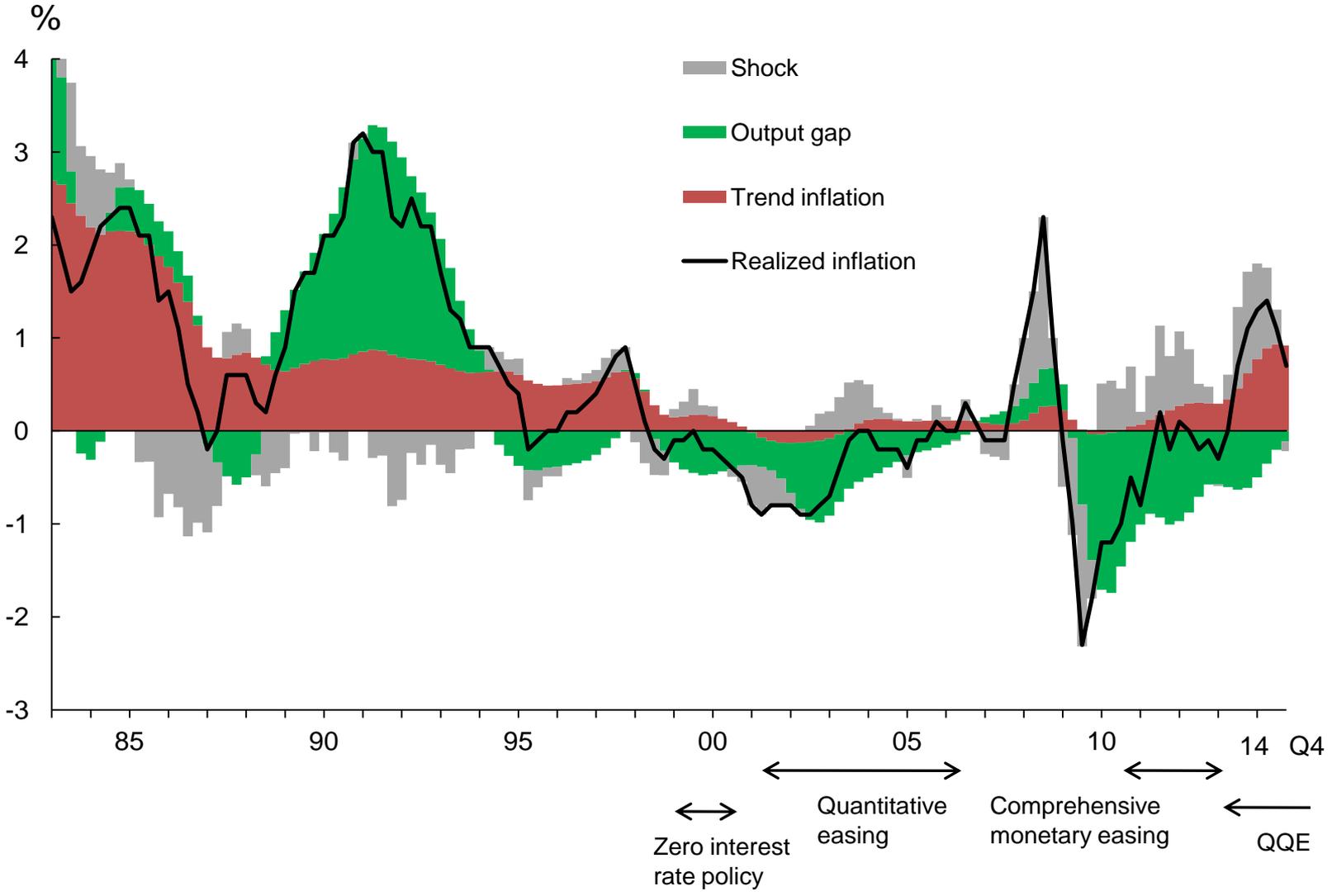
Posterior estimates of trend inflation



Note: The shaded area indicates the one-standard-deviation band.

Has Trend Inflation Shifted? (4)

Historical decomposition of realized inflation

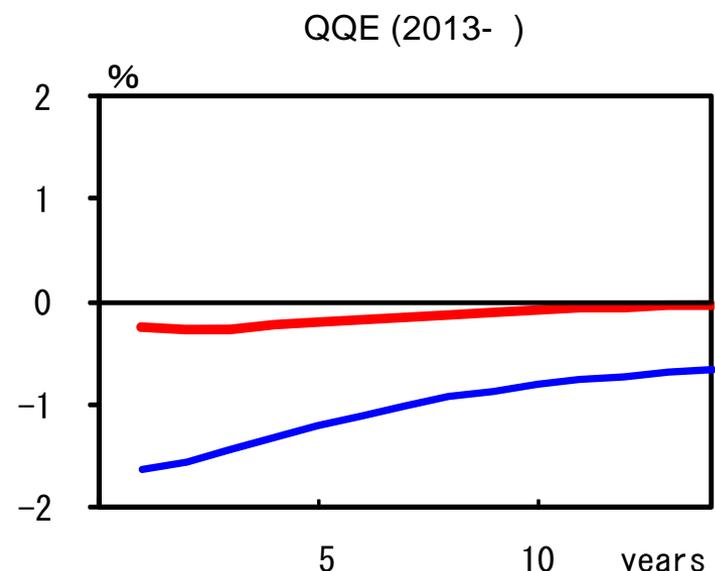
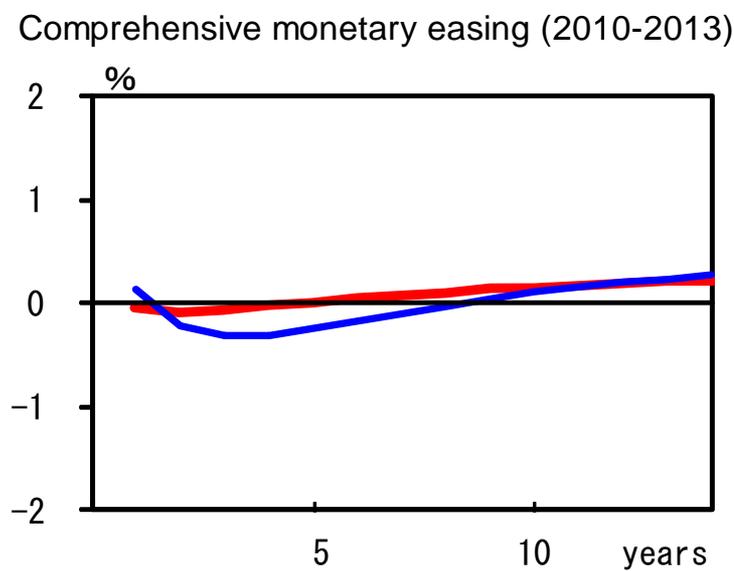
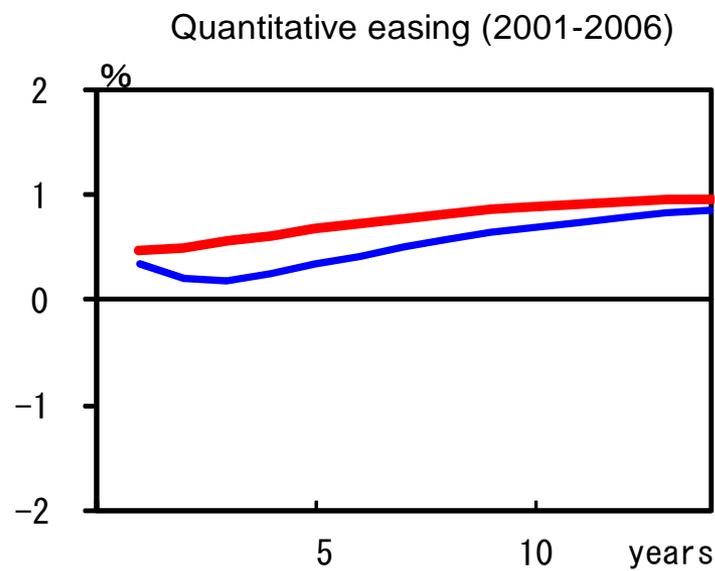
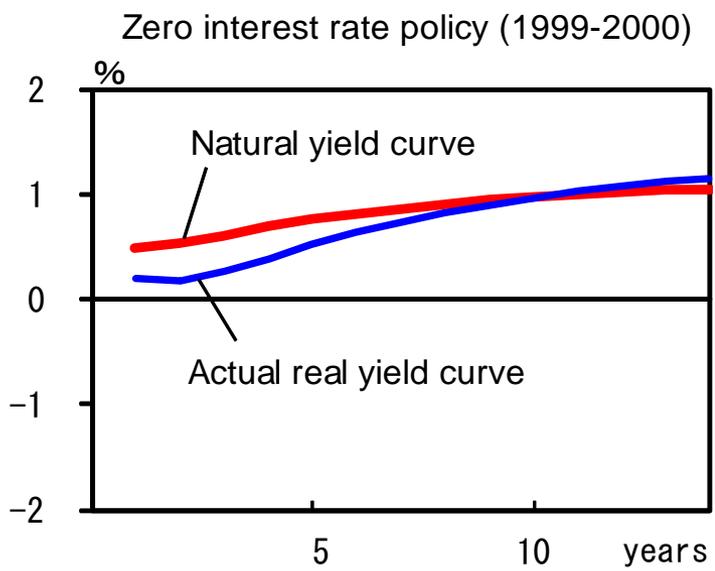


The Natural Yield Curve (1)

- The natural yield curve extends the idea of the natural rate of interest defined at a specific maturity – such as the overnight rate – to one defined for all maturities.
- Short-term nominal rates have hit the zero lower bound and the focus of monetary policy has shifted to the entire yield curve.
- The natural yield curve enables us to measure not only the effects of conventional monetary policy through short-term interest rate control but also those of unconventional monetary policy through government bond purchases and forward guidance.

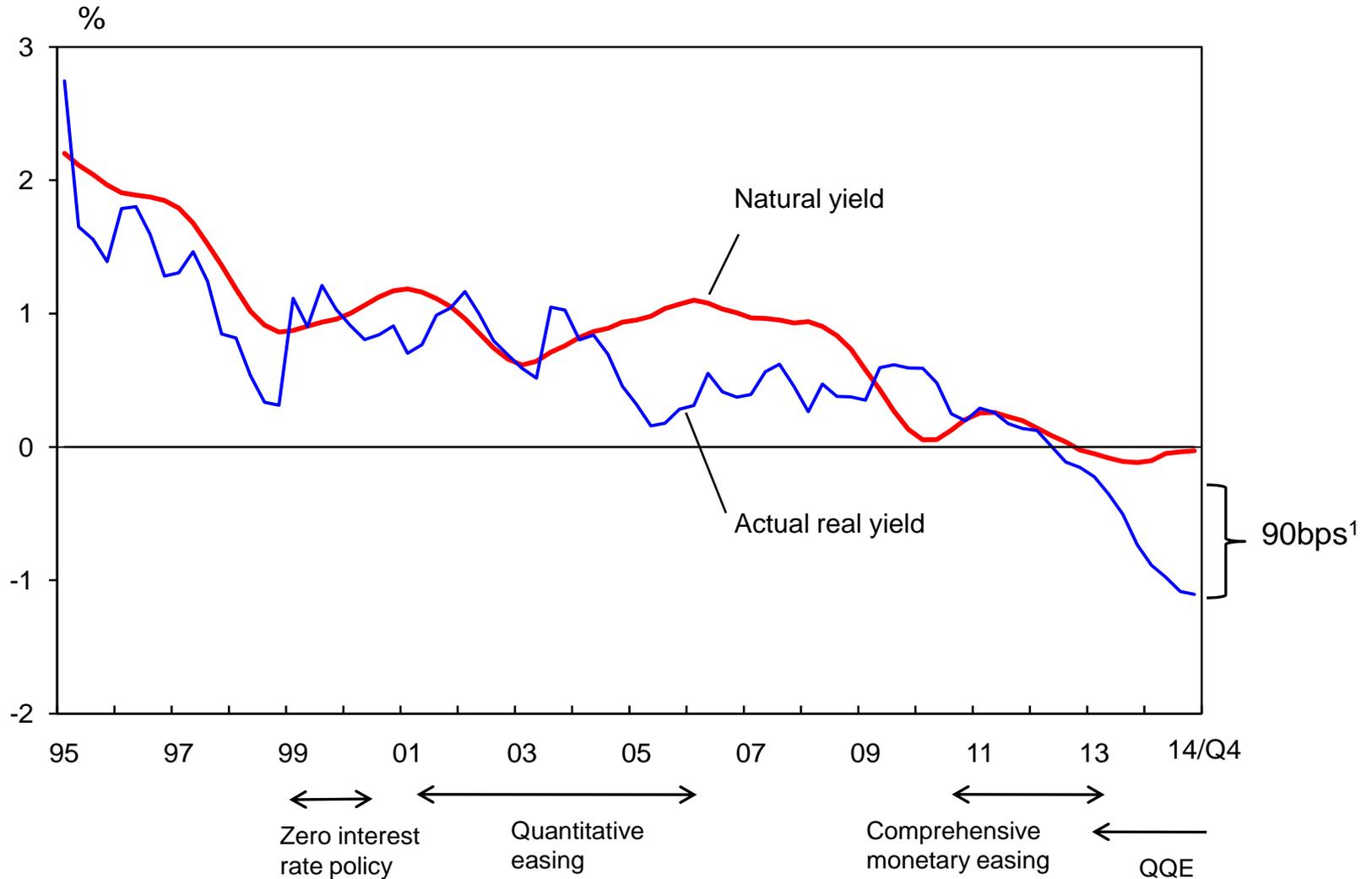
The Natural Yield Curve (2)

Yield curves during each of the monetary easing programs



The Natural Yield Curve (3)

The 10-year natural yield and actual real yield



Note: 1. The difference from 2013/Q1.

The Natural Yield Curve (4)

The interest rate environment and firm's funding conditions

Indicator of the interest rate environment: aggregated information on the interest rate gaps for all maturities

