

# The Persistence of Low Long-Term Interest Rates: Causes and Consequences

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# Causes (1): Overview of subdued inflation

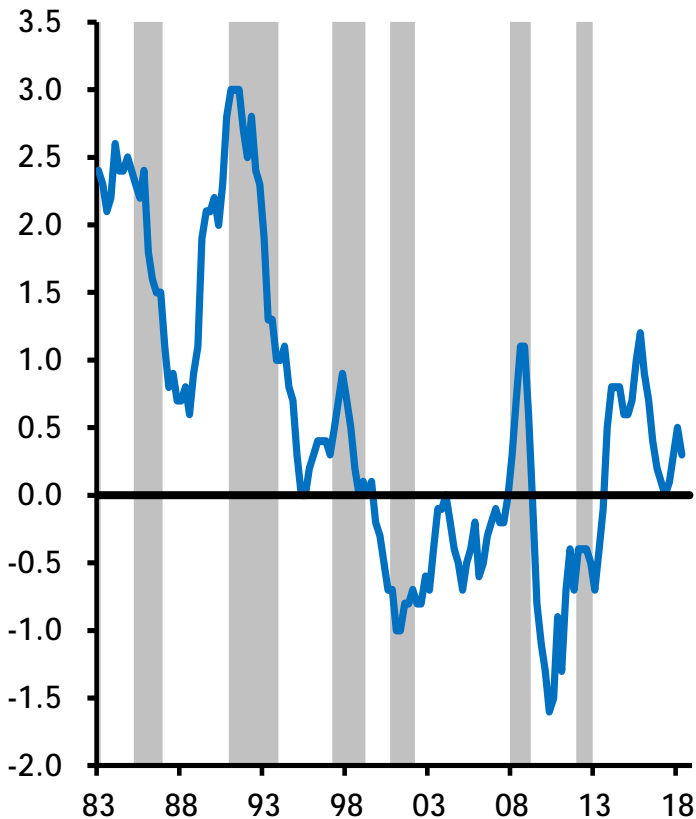
After the Lehman shock: Output gap had been negative

Current: Inflation has not accelerated

- Output gap is clearly positive
- However, inflation expectations are subdued, and Phillips curve becomes flatter

CPI (ex. fresh food & energy, Japan)

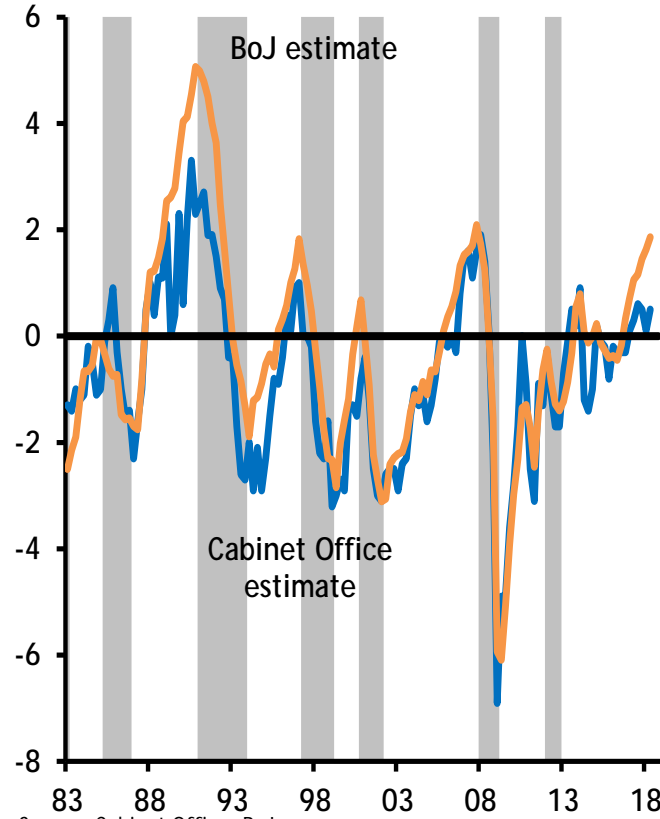
%oya, shading shows recessions



Source: Statistics Bureau

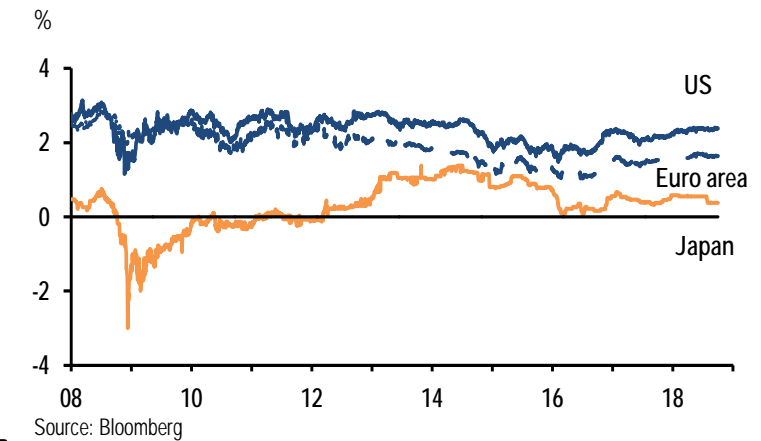
Output gap (Japan)

% of potential GDP, shading shows recessions



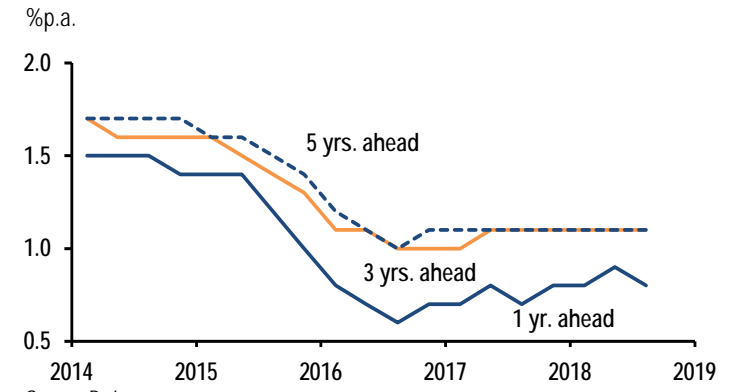
Source: Cabinet Office, BoJ

Inflation swap rate (10yr)



Source: Bloomberg

Inflation expectations (Corporations, Japan)

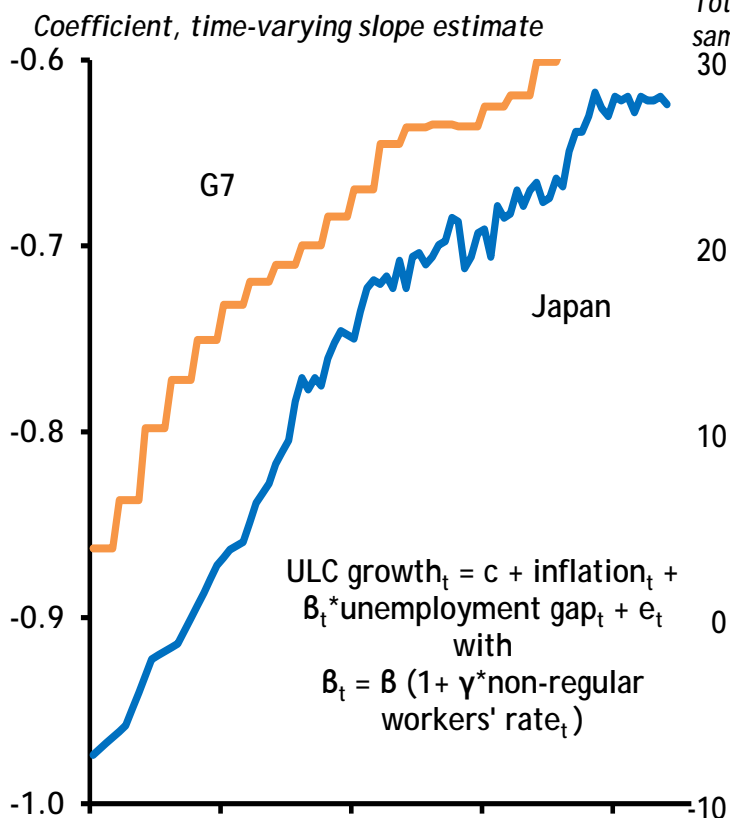


Source: BoJ

# Views from wage growth (wage Phillips curve)

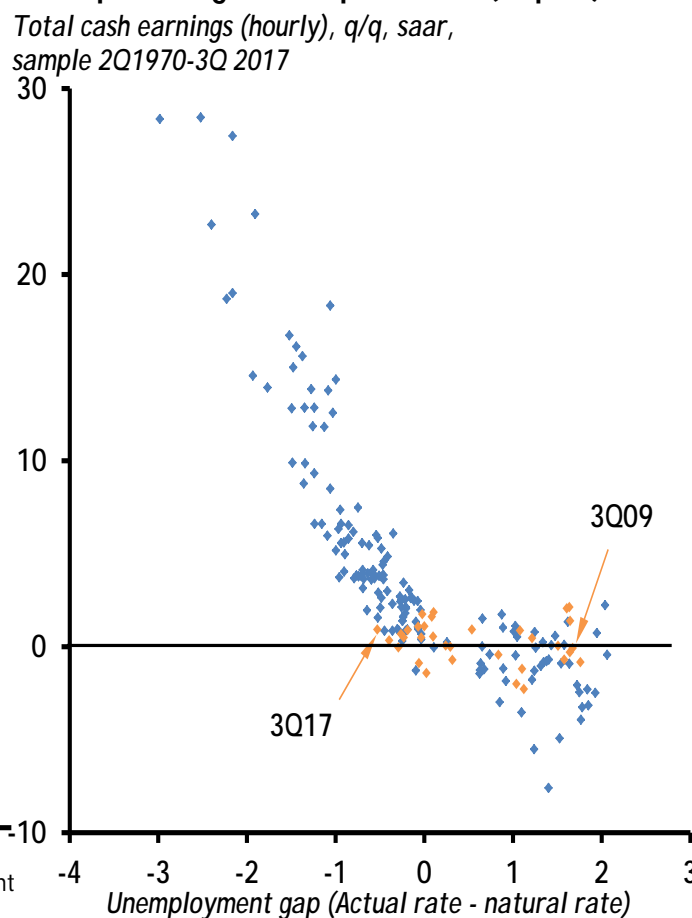
- i) Trend; Flatter slope (change in working-style <"gig" economy> for US and UK vs. cost saving incentive to use part timers for Japan)
- ii) Reflecting GFC; L-shaped wage Phillips curve (downward wage rigidity for Euro area, UK, Japan, and slightly for US <only after Lehman shock>)
- iii) Japan's specific factor; Employment system to secure jobs in exchange for rise in wages

## Slope of wage Phillips curve



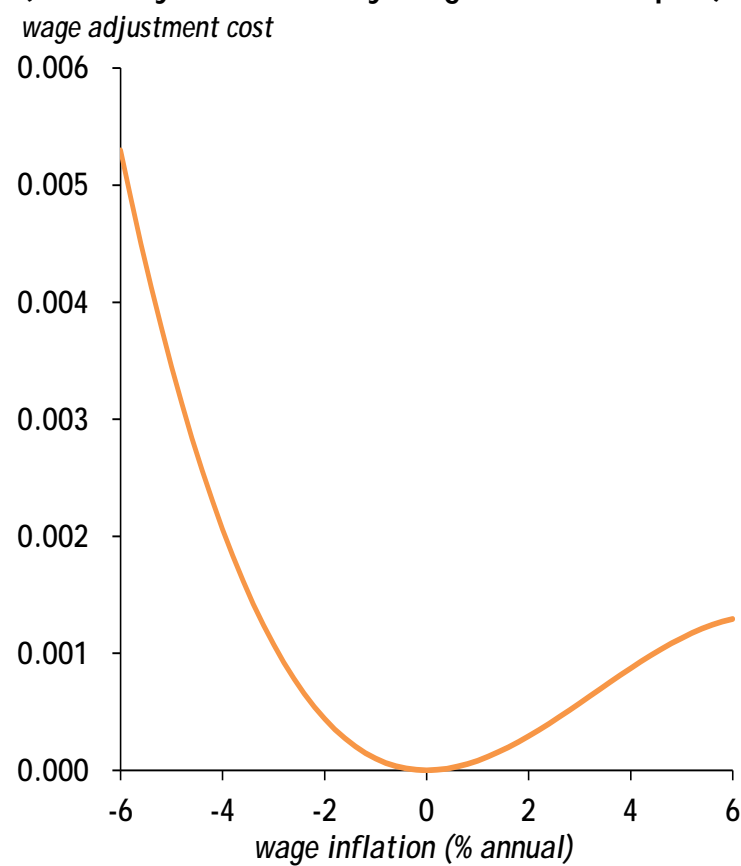
Note: G7 are calculated by BIS with panel data and with employment protection factor as a measure for pricing power.  
Source: Cabinet Office, Statistics Bureau, BIS, J.P. Morgan

## L-shaped wage Phillips curve (Japan)



Source: Iwasaki, Muto, and Shintani (2018), J.P. Morgan

## Downward wage rigidity (New Keynesian sticky wage model, Japan)

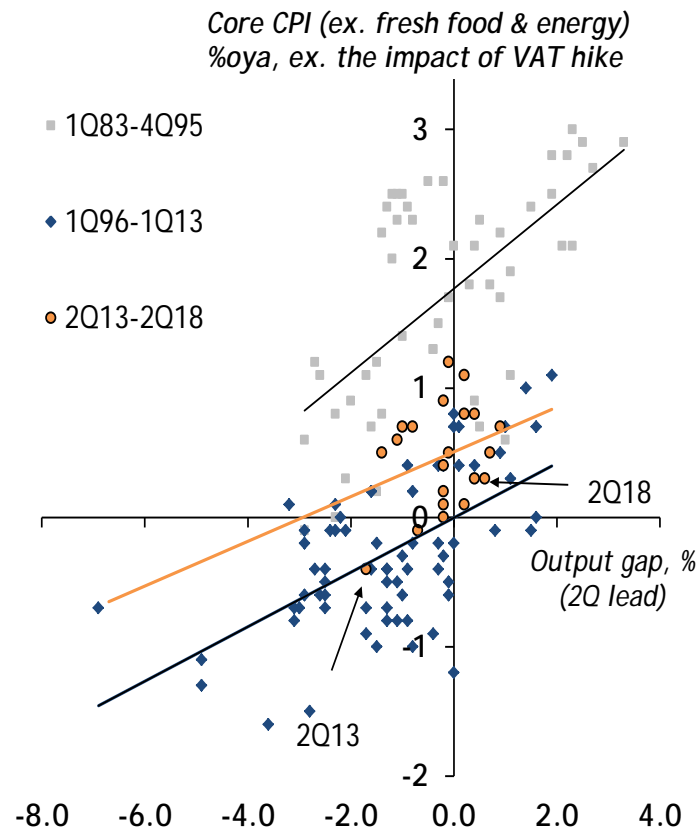


Notes: The horizontal axis depicts deviations from steady-state wage inflation.  
Source: Iwasaki, Muto and Shintani (2018)

# Views from CPI inflation rate (CPI Phillips curve)

Still alive, but inflation expectations have not shifted up and the slope has become flatter

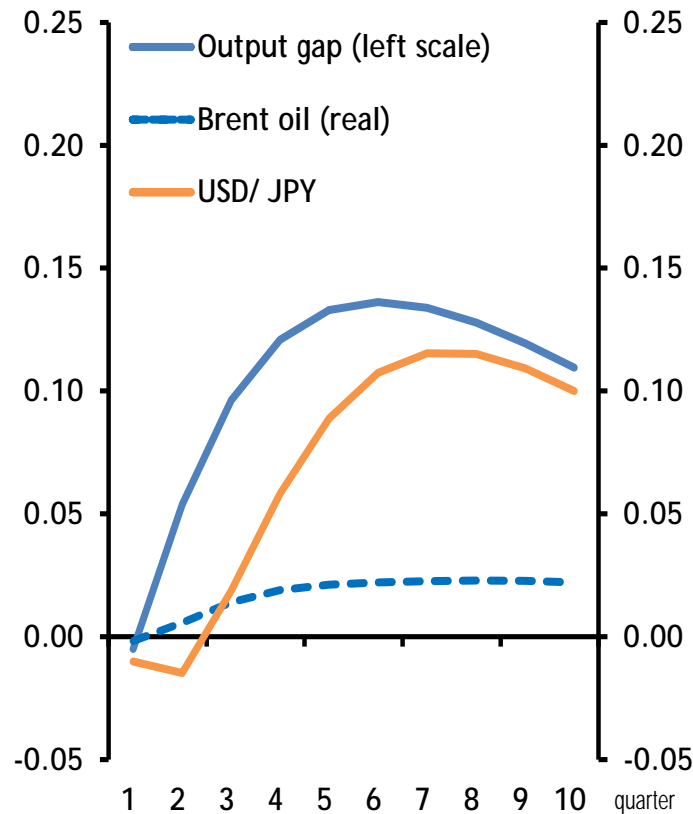
## Shift in inflation expectations (Japan)



Note: Sample period: 1Q83 - 2Q18  
Source: Cabinet Office, Statistics Bureau, J.P. Morgan

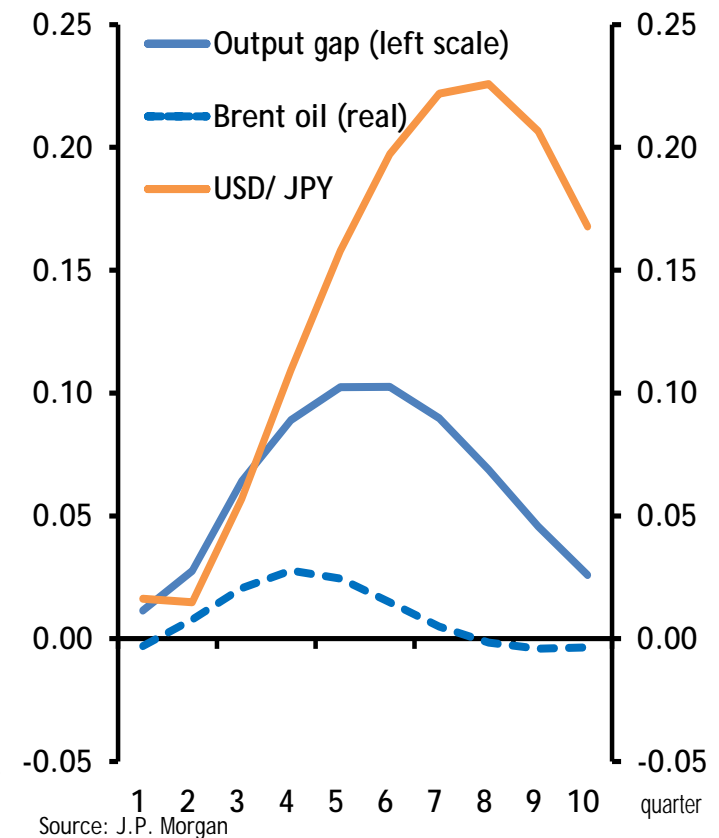
## Impulse responses on core CPI ex. energy since 1990 (Japan)

1%-pt impact on %oya      10%-pt impact on %oya



## Impulse responses on core CPI ex. energy since 2005 (Japan)

1%-pt impact on %oya      10%-pt impact on %oya

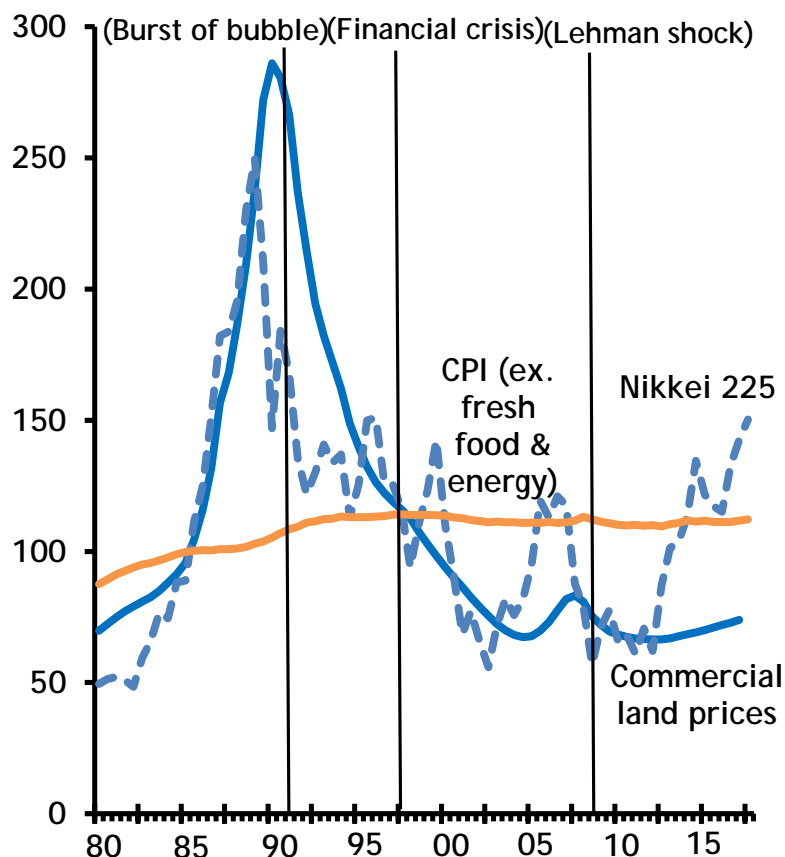


# Backgrounds behind changes in CPI Phillips curve

- i) Japan's specific factors; firms' cautious pricing behavior and household resistance to price increases
  - Firms having experienced materialization of 3 tail risks in 30yrs
  - Having a deflationary mindset after having experienced persistent deflation for 20yrs
  - Low growth expectations reflecting population aging and decline
- ii) DM common trend; Subdued wage growth, and severe competition with E-commerce

## General prices and asset prices (Japan)

1985=100 (excluding the effect of VAT hike)



Source: Japan Real Estate Institute, Statistics Bureau, Nikkei, J.P. Morgan

## Panel estimation of online sales impact on CPI (Japan)

Dependent variable: CPI of (\*)

Explanatory variables:

(i) Online sales / total retail sales ratio of (\*), (ii) GDP gap, (iii)  $CPI_{t-1}$  of (\*)

Sample period: 1Q15 - 4Q17, Adj.  $R^2$ : 0.72

### (\*) Goods and services sold online

Weight of the following contents on BoJ core CPI 37%

Food (ex. fresh food and alcohol), Beverages, Household utensils, Furniture, Clothes, Footwear, Medicines, Toiletries, Automobiles & maintenance charges, Books & other reading materials, Culture & recreation services

the same.

Source: Statistics Bureau, J.P. Morgan

## Negative impact of online sales on CPI (Japan)

(a) Increase in online sales / total retail sales ratio (17-16)	+0.61%
(b) Estimated parameter of online sales ratio	-0.12
(c) Negative impact on goods and services prices sold online*	-0.22%
(d) Negative impact on BoJ core CPI	-0.08%

Table1)

Source: J.P. Morgan

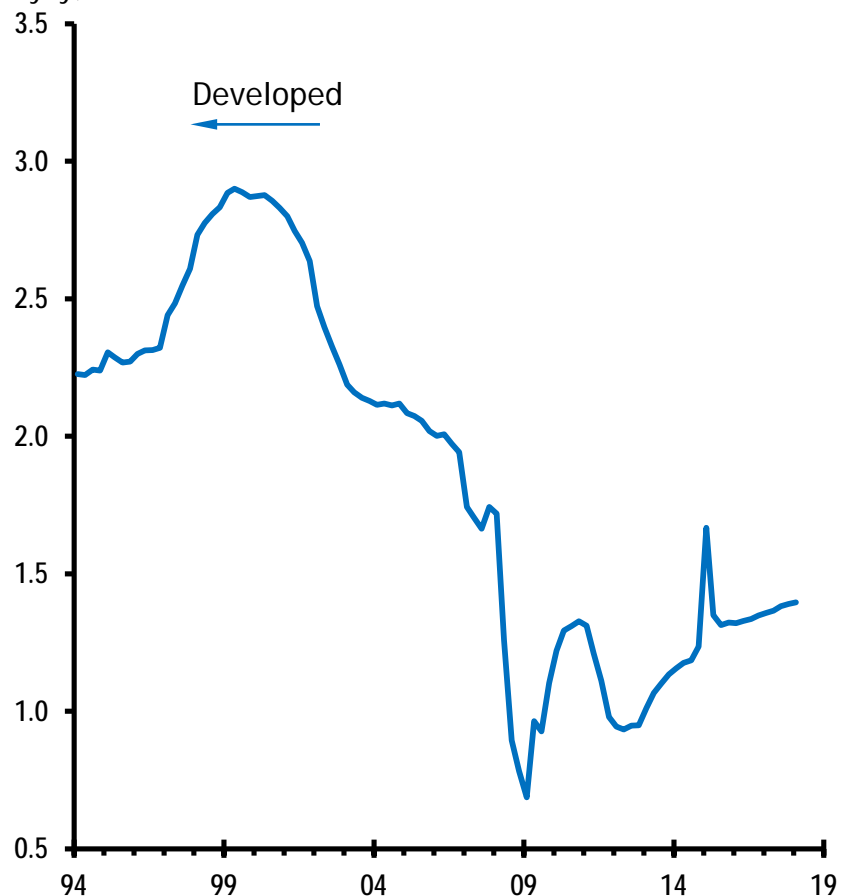
## Causes (2): Downtrend of potential growth rate and $r^*$

Slowing down of global potential growth rate since early 2000s, and lasting GFC damage on it, which has recently bottomed out

DM (including Japan) potential growth rate (and  $r^*$ ) was lowered mainly by productivity slowdown

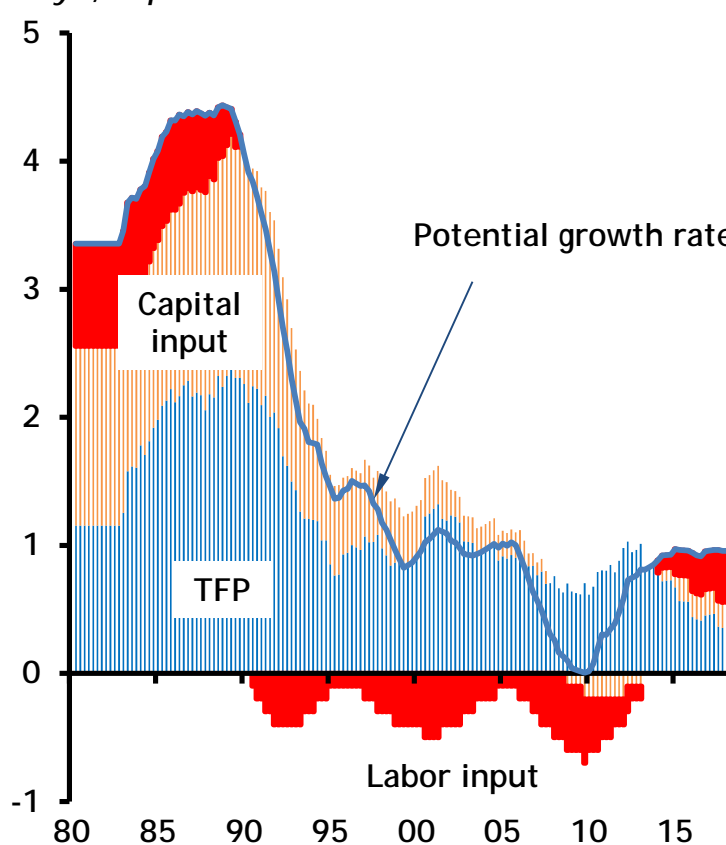
### Potential real GDP (Global)

%y/y; both scales

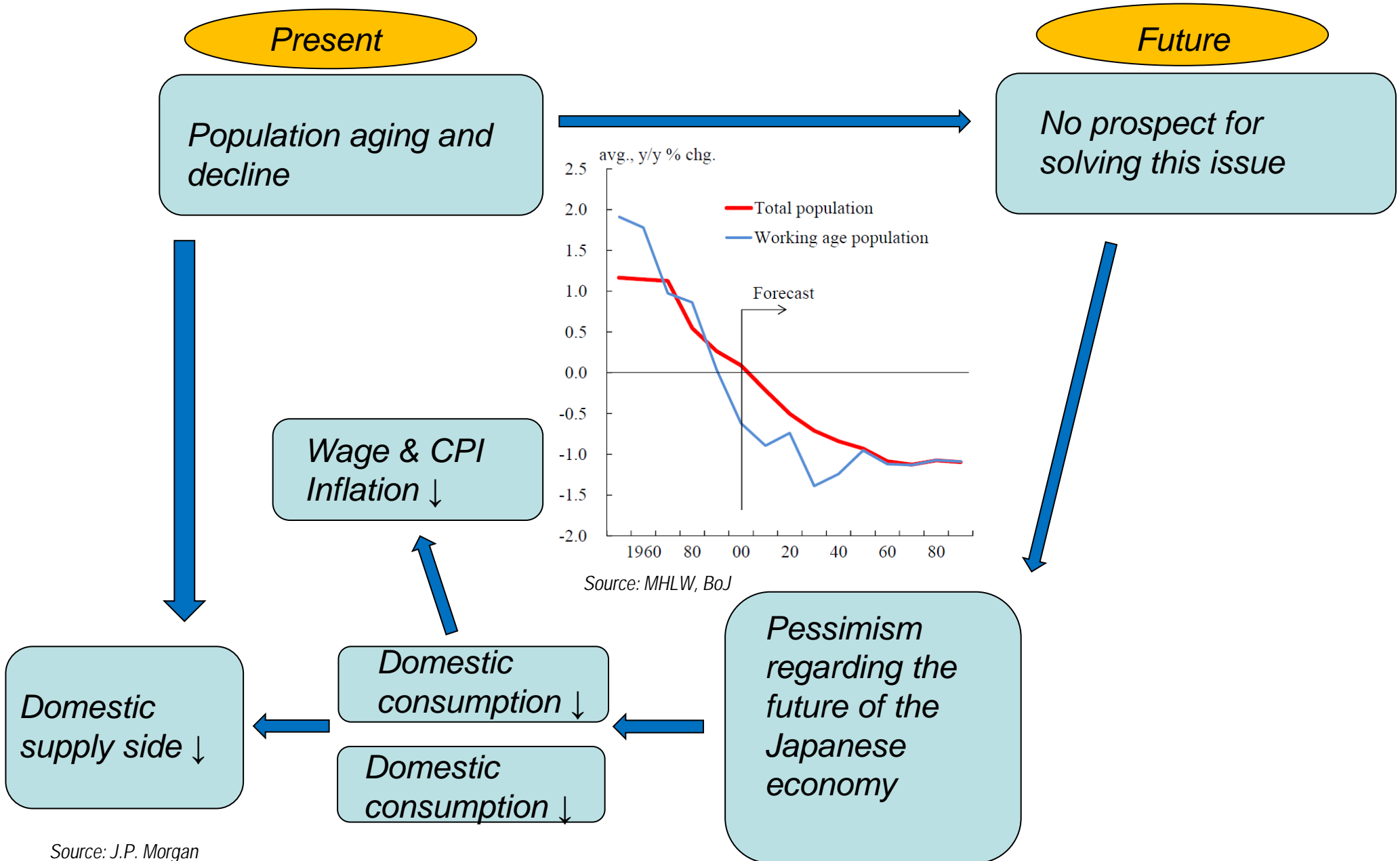


### Potential real GDP (Japan)

%oya, %-pt contribution



# Low potential growth expectations behind low inflation (Japan's case)



Source: J.P. Morgan

# Consequences (1): ELB of monetary accommodation

BoJ has to control 10yr yield target at around 0% and to take it longer to alleviate the impact of ELB

## Taylor rule assumptions

%-pts and % (for  $r^*$  and  $i^*$ )

	US	EMU	Japan
Inflation gap	0.5	0.5	0.5
Output gap	0.5	0.5	0.0
$r^*$	0.8	0.5	0.5
$i^*$	2.25	1.8	2.25

Source: J.P. Morgan

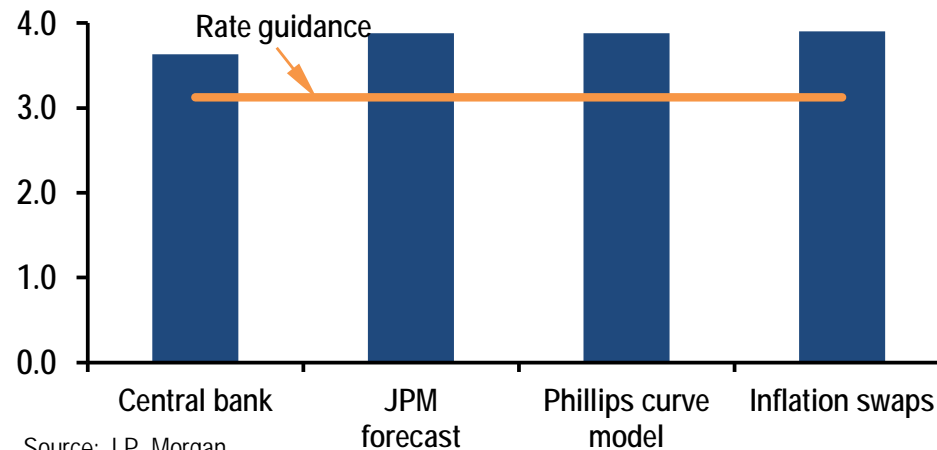
## The appropriate policy rate, 2Q18

%	Fed	ECB	BoJ
Baseline Taylor rule	3.3	0.9	-0.2
Alternative: 0.5%-pt lower $r^*$	2.8	0.4	-0.7
Alternative: 0.5%-pt lower $r^*$ and $u^*$	2.3	-0.3	-0.7

Source: J.P. Morgan

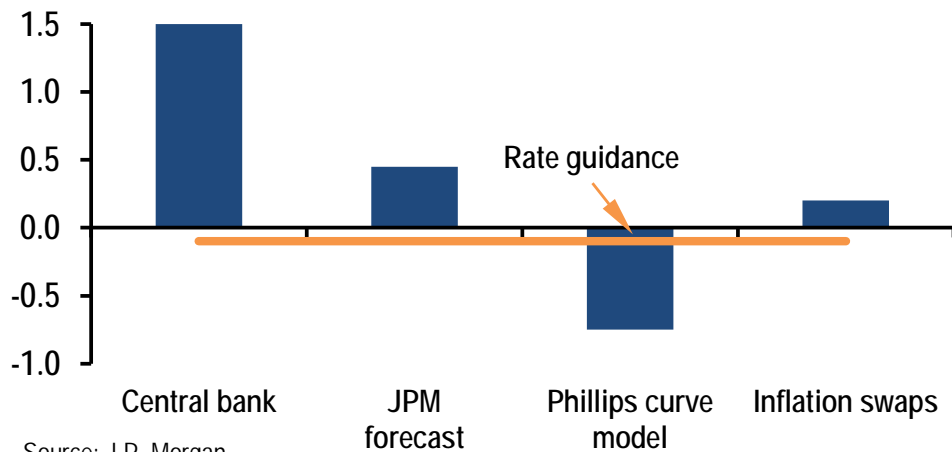
## Taylor rule under different inflation scenarios, US

Percent, 4Q19



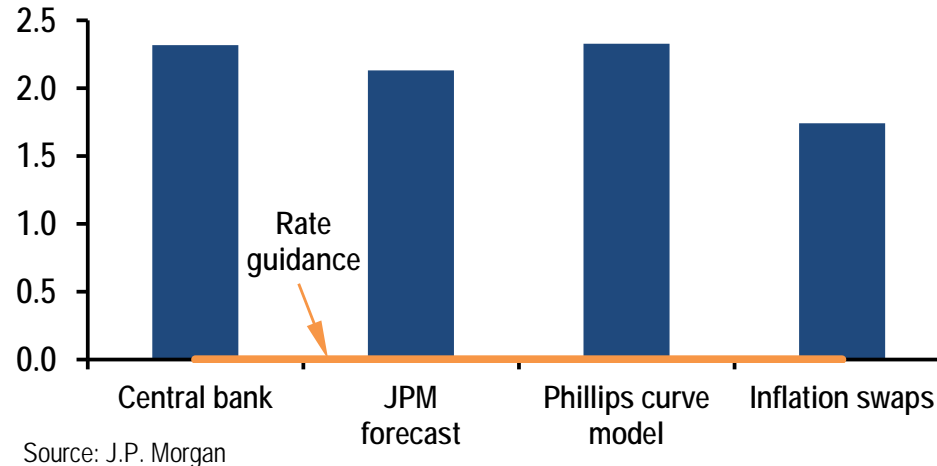
## Taylor rule under different inflation scenarios, Japan

Percent, 4Q19



## Taylor rule under different inflation scenarios, Euro area

Percent, 4Q19





# Consequences (2): Weakening financial stability through compression of profitability

## CGFS Report (July 2018)

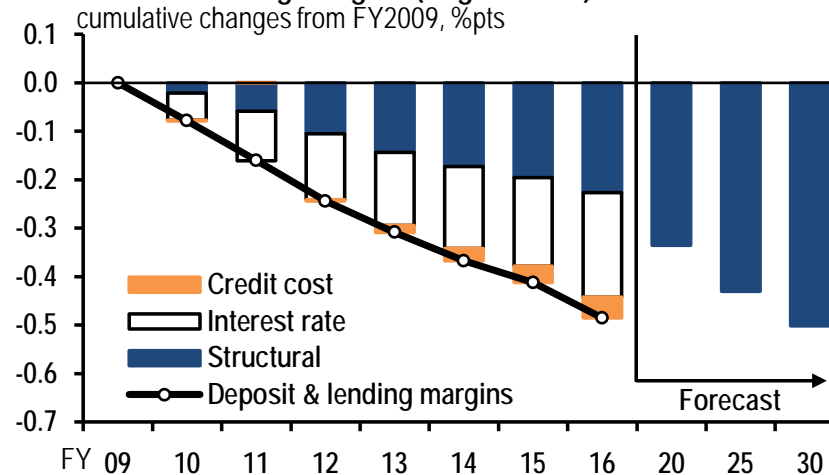
- Solvency challenges: ICPFs would be more vulnerable than banks
- A low-for-long scenario could still engender materials risks to financial stability.
  - Banks without sufficient capital buffers could face solvency issues
  - ICPFs could face liquidity problems
- First line of defence: Continuation of building resilience in the financial system
- Giving consideration to policies addressing more specific concerns posed by the low-for-long and snapback scenarios

## IMF Article IV conclusions on Japan (October 2018)

- A continued accommodative monetary policies with clearer forward guidance
- Strengthened financial sector policies

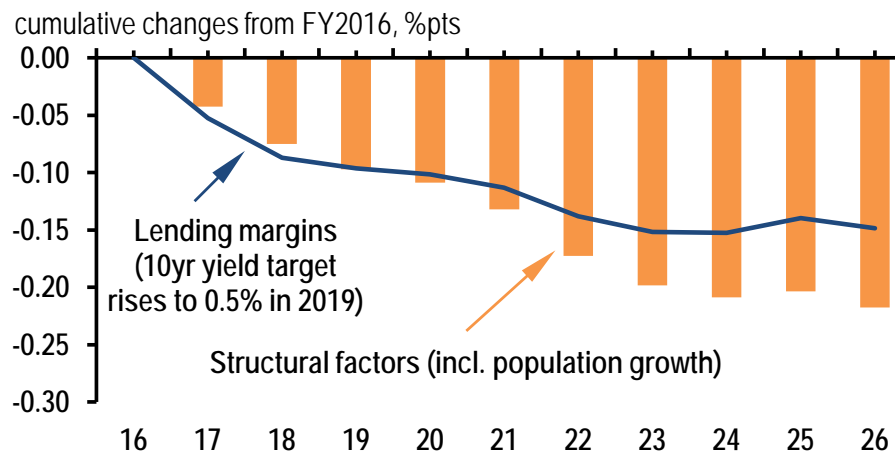
## Japan's regional financial institutions: Compression of lending margins

Reduction on lending margins (Regional FIs)



Source: BoJ "Financial System Report (April 2018)"

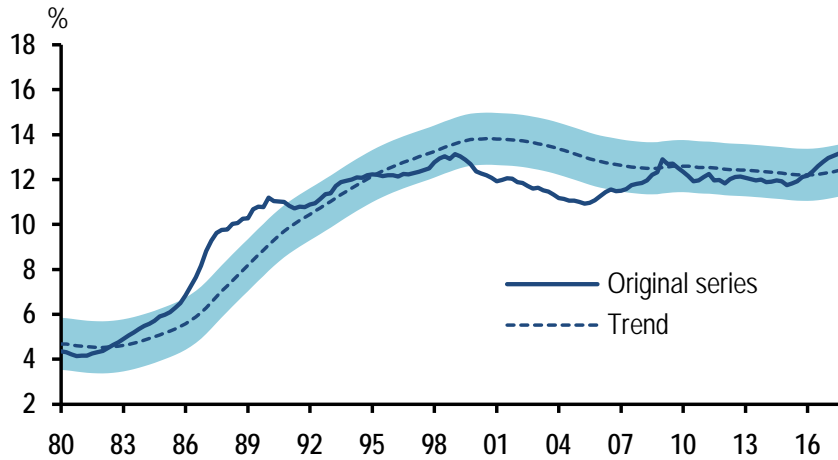
Lending margin simulation (Regional FIs)



Source: BoJ, J.P. Morgan

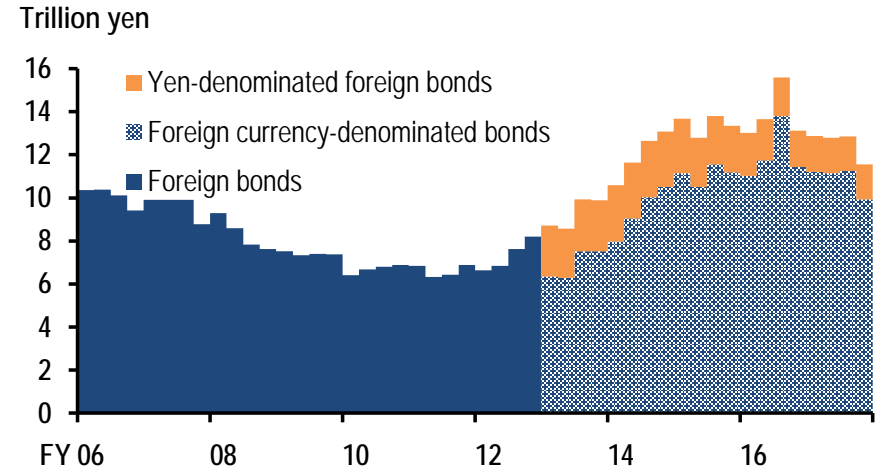
# Japan's regional financial institutions: Risk-taking

Real estate loans to GDP ratio



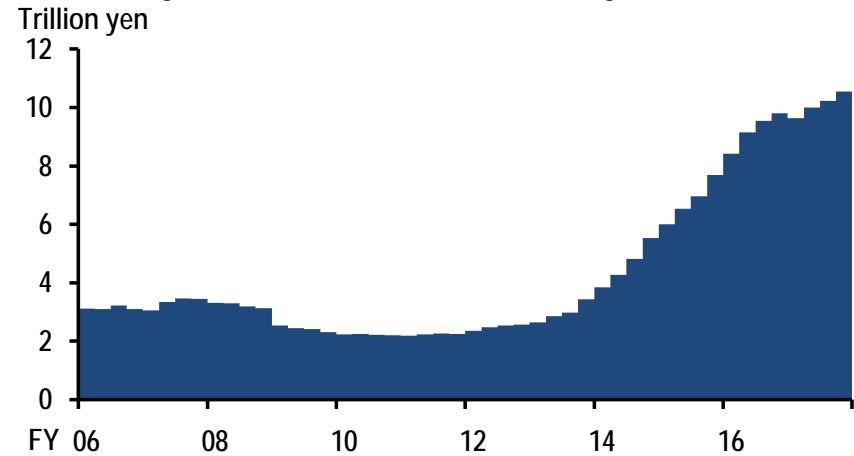
Source: BoJ "Financial Sstem report (April 2018)"

Outstanding amount of foreign bonds (Regional FIs)



Source: BoJ "Financial System Report (April 2018)"

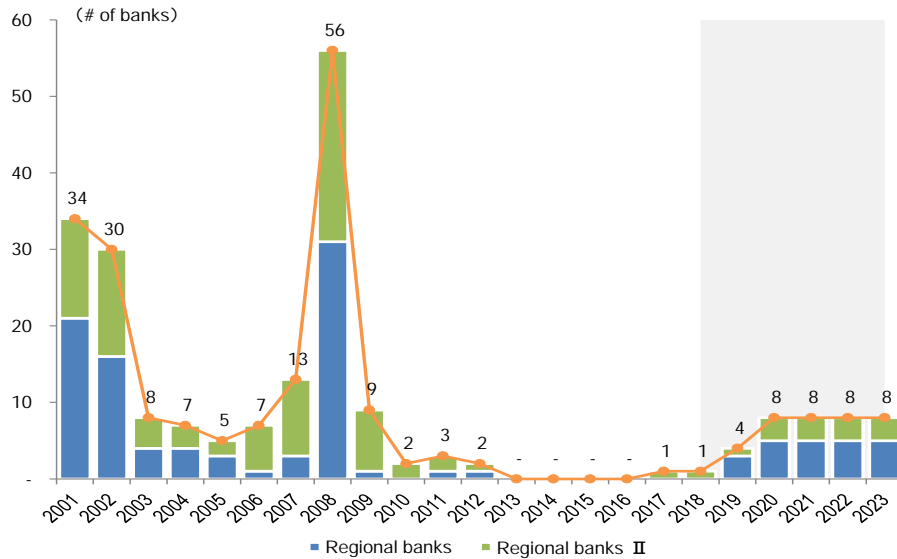
Outstanding amount of investment trusts (Regional FIs)



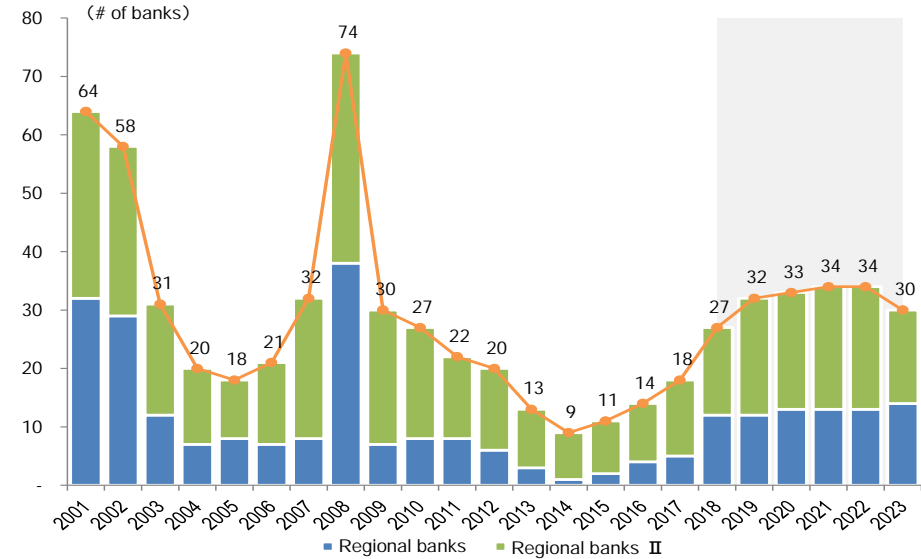
Source: BoJ "Financial System Report (April 2018)"

# Japan's regional financial institutions: Capital positions

Number of regional FIs with negative current profits (total 105 FIs)

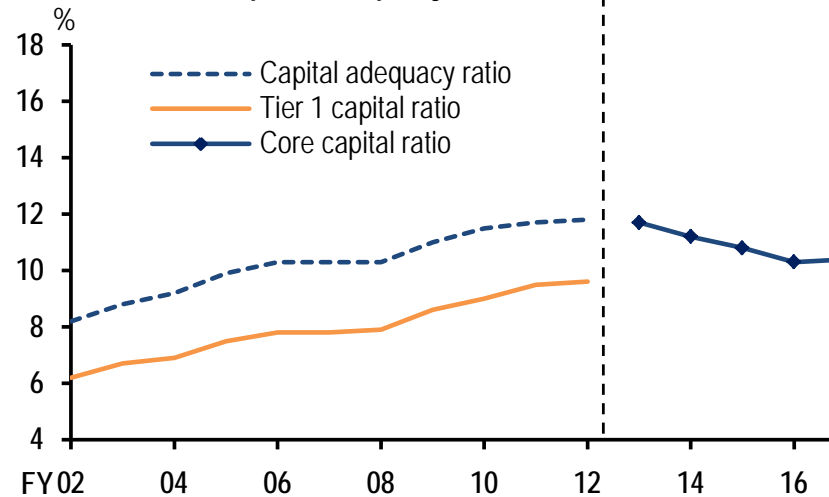


Number of regional FIs with current profits less than 2bn JPY (total 105 FIs)



Source: J.P. Morgan (2018)

Domestic banks' capital adequacy ratios (ex. shinkin)



Source: BoJ :Financial System report (April 2018)

## Discussion point: What should authorities do under low-for-long interest rates?

Degree of policy priority: Achieving 2% inflation

- Original intention to achieve price stability: Preventing the excessive change in relative prices, preventing the divergence of sticky prices from the equilibrium price levels, smooth financial transactions through the stabilization of the value of money
  - 2% target is not superior to 1% target
- Significantly important to secure the room for future monetary easing
  - 2% target is superior to 1%
- How large is the cost of JPY appreciation by setting the inflation target lower?

Two policy approaches with no consensus (A is generally better than B)

- A) Achieving the target soon to the extent possible, preventing the materialization of side effects
  - Financial stability should be addressed by prudence policy as a first line of defense
- B) Regarding 2% target as the medium- to long-run target by giving due consideration to side effects, and seeking 2% when the trade-off is alleviated
  - Monetary policy has an advantage that can get in all of the cracks

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