Quantitative and Qualitative Easing
– With a negative interest rate

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1. Negative interest rate policy (NIRP) and its impact

2. Discussion on NIRP

3. Prospects of QQE with a NIR
1. NIRP and its impact

**Backgrounds**

- **Rationale for additional stimulus**
  - Instability of financial markets could undermine the sentiment of firms and households
  - Delay in expected time of achieving the target could hurt the confidence in QQE

- **Choice of negative rate policy**
  - Additional policy measure would be necessary for extended period of monetary easing
  - Practices of policy conducts could be learned from previous cases in Europe

### Real GDP and CPI Data

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP (y-on-y)</th>
<th>CPI (excl. flesh foods) (y-on-y)</th>
<th>CPI (excl. flesh foods) (y-on-y) (excluding the effects of consumption tax hike)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2015</td>
<td>+1.0% to +1.3%</td>
<td>+0.0% to +0.2%</td>
<td></td>
</tr>
<tr>
<td>FY2016</td>
<td>+1.0% to +1.7%</td>
<td>+0.2% to +1.2%</td>
<td></td>
</tr>
<tr>
<td>FY2017</td>
<td>+0.1% to +0.5%</td>
<td>+2.0% to +3.1%</td>
<td>+1.0% to +2.1%</td>
</tr>
</tbody>
</table>

Source: BOJ, BOE
1. NIRP and its impact

- Expected effects and its complementary role with QE

- NIRP
  - Downward pressures on money market rates
  - Downward pressures on foreign exchange rates
  - Downward pressures on long-term rates

- QE (JGB purchase)
  - Increase in business investment
  - Stimulation of expansion of credits
  - Stimulation of net exports

- QE (JGB purchase) + NIRP
  - Increase in corporate profits
  - Increase in labor earnings
  - Increase in private consumption
  - Achieve inflation target
1. NIRP and its impact

- Shorter-term implications: Financial markets

Effects on financial markets

- Downward shift of JGB yield curve with flattening
  → Longer than expected period of QQE?
- Signs of distortion in money market rates
  → Technical challenges among players?

![Graph showing JGB Yield Curve and Money Market Rates](image-url)
1. NIRP and its impact

- Shorter-term implications: Economy

**Effects on economy**

- Considerable effects of policy announcement
  → Firms and household gradually adjust their activities
- Not an optimal time for portfolio rebalancing
  → Regaining stability of sentiment provides better conditions

**Graphs:**

- **Net Outward investment (¥100mn):**
  - Investment trust
  - Bank
  - Broker/Dealer
  - Trust bank
  - Other
  - Total

- **Turnover and the value of trade of J-REIT (thousands, ¥mn):**
  - Turnover (LHS)
  - Value of trade (RHS)
## 2. Discussion on NIRP

### Conditions of QQE as backgrounds for NIRP

<table>
<thead>
<tr>
<th>Common factors with other QEs</th>
<th>Unique factor of QQE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Important role of communication policy</td>
<td>• Low elasticity of inflation expectation and economic growth expectation</td>
</tr>
<tr>
<td>• Significant position of financial markets for policy transmission</td>
<td></td>
</tr>
</tbody>
</table>

**Source**: CAO

### Expected rate of inflation (%)

- **Date**: Jan-05 to Jan-15
- **Values**: 0.0 to 4.0

### Expected rate of real GDP growth (%)

- **Horizon**: 3 years and 5 years
- **Period**: 2000 to 2014

**Graph Source**: CAO
2. Discussion on NIRP

- Differences from preceding cases

<table>
<thead>
<tr>
<th>Effects on financial markets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Position in the context of global economy</td>
<td>→ Small open economy vs large domestically oriented economy</td>
</tr>
<tr>
<td>• Hysteresis of economy and finance</td>
<td>→ Abrupt shock vs chronic challenge</td>
</tr>
</tbody>
</table>

Goals of NIRPs by central banks in Europe

<table>
<thead>
<tr>
<th>Central Bank</th>
<th>Goals</th>
</tr>
</thead>
</table>
| ECB | ➢ Promote the return of inflation rate to a path consistent with the target.  
➢ Enhance the spillover of policy effects through divergent cycle of MPs. |
| SNB | ➢ Prevent the appreciation of CHF against EUR.  
➢ Prevent the tightening financial conditions due to the appreciation of CHF. |
| Riksbank | ➢ Promote the return of inflation rate to a path consistent with the target.  
➢ Maintain the stability of inflation expectations. |
| Denmark National Bank | ➢ Maintain the stability of DKR against EUR (under ERM II). |
2. Discussion on NIRP

- Conditions for NIRP from theoretical viewpoints

**Implication of banknotes**

- Banknotes with 0% yield could undermine the effects of NIRP.
  - Central banks could close this “loophole” by some conventional measures or IT solutions.
  - Moreover, role of banknote as means of payment/settlement would naturally be constrained.

**Implications of natural rate**

- Negative rate policy could be rationalized in light of its relative position with natural rate.
  - Inflation expectation plays an important role, because this discussion should be based on real terms.
  - Natural rate is an elegant concept, but it is a delicate indicator to be estimated in practice.
3. Prospects of QQE with NIRP

Intended mechanism of policy transmission

<Quantitative aspects>
- Introduction of the base money as the target
- Substantial expansion of JGB purchase

<Qualitative aspects>
- Substantial extension of maturity of JGB purchase
- Increase the scale of purchase of ETFs and J-REITs

- Achieve inflation target
- Downward pressures on foreign exchange rate
- Stimulate the inflationary expectations
- Stimulate the portfolio re-balancing
- Remove risk premium
- Stimulate economic activities
3. Prospects of QQE with NIRP

- Performance of inflation

- CPI inflation accelerated to the rate closer to the target until the spring of 2013.
  → A series of factors, both cyclical (negative impacts of consumption tax hike and fall in commodity prices) and structural (loss of pricing power among firms), have prevented its approach to the target since then.

CPI inflation (annual basis, %)
3. Prospects of QQE with NIRP

Opinions among general public and international community

**General public**
- Interchangeable use of the terms: “deflation” and “recession”
- Uncomfortable fact of real purchasing power

**International community**
- JPY’s approach to its “fair value”
- Growing attention to foreign exchange policy

**Growth rate of real wage (annual basis, %)**

**Nominal effective exchange rates (Jan 2007=100)**
3. Prospects of QQE with NIRP

- Evolution of policy strategy

- In the meantime, policy dialogue of QQE has also evolved:
  A) Highlighting momentum of economic activities as the driver for higher inflation
  B) Paying more attention to the interest rates as the mechanism of policy transmission

### Estimated impacts of QQE (BOJ Review)

<table>
<thead>
<tr>
<th>Estimations using macroeconomic model$^{1,2}$</th>
<th>Simulation 1</th>
<th>Simulation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real interest rates</td>
<td>-0.8% points</td>
<td>-0.8% points</td>
</tr>
<tr>
<td>Medium- to long-term inflation expectations</td>
<td>+0.5% points</td>
<td>+0.5% points</td>
</tr>
<tr>
<td>Stock prices (TOPIX)</td>
<td>+18%</td>
<td>+40%</td>
</tr>
<tr>
<td>Exchange rates (yen/U.S. dollar)</td>
<td>+8%</td>
<td>+25%</td>
</tr>
<tr>
<td>Output gap$^3$</td>
<td>+1.1% points</td>
<td>+3.0% points</td>
</tr>
<tr>
<td>CPI$^4$ (all items less fresh food, y/y % chg.)</td>
<td>+0.6% points</td>
<td>+1.0% points</td>
</tr>
<tr>
<td>Real GDP</td>
<td>+6 tril. yen</td>
<td>+16 tril. yen</td>
</tr>
<tr>
<td>Private consumption</td>
<td>+2 trl. yen</td>
<td>+5 trl. yen</td>
</tr>
<tr>
<td>Private non-resi. investment</td>
<td>+3 trl. yen</td>
<td>+7 trl. yen</td>
</tr>
</tbody>
</table>

Source: CAO, BOJ
3. Prospects of QQE with NIRP

- Longer-term implications

- Coordination among the policy tools of QQE
  - Flattened yield curve could cause cases of under-subscription of JGB purchase in the end.
    → Nevertheless, the BOJ could argue that the QQE is successful as far as it could cause downward pressures on the curve by whatever mechanisms.

- Implications for optimal policy mix
  - The BOJ could support the momentum of our economy with broader range of policy tools.
    → It could make some breathing rooms for structural reforms which could sometimes cause temporary pains.

- Implications for financial business
  - Financial institutions could review their business practices, using the negative policy rate policy as a catalyst.
    → It could rather pave the way for overall improvements of efficiency and resiliency of our financial system.
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