End of Japan’s Deflation?

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Mild but decades long deflation in Japan
U.S. Consumer Price Index during the Great Depression

All Items Less Food

Log CPI (Jan 1913=1)
Three Arrows of Abenomics

1. Aggressive monetary easing
2. Flexible fiscal policy
3. Growth strategy that promotes private investment
January 22, 2013
Joint statement of the Government and Bank Japan on overcoming deflation and achieving sustainable economic growth
BoJ set the inflation target at 2 percent

April 4, 2013
BoJ introduced Quantitative and Qualitative Monetary Easing (QQME)
- “The Bank will achieve the price stability target of 2 percent in terms of the year-on-year rate of change in the CPI at the earliest possible time, with a time horizon of about two years.”
- “It will double the monetary base and the amounts outstanding of Japanese government bonds (JGBs) as well as exchange-traded funds (ETFs) in two years, and more than double the average remaining maturity of JGB purchases.”
Abenomics started in Dec 2012

- Nominal wage [2010=100, left scale]
- CPI [2010=100, Left scale]
- Yen/Dollar rate [right scale]
Yen Depreciates At Night

Accumulated Change in Yen/Dollar Rate since Jan 2012

Change during the daytime (i.e. between 9 am and 5 pm by JST)
Change during the night time (i.e. between 5 pm and 9 am by JST)
Total change

Source: Fukuda (2013)
Net Purchase By Sector in the Tokyo Stock Exchange

Corporate
Individual
Foreigner
Securities firm

Billion yen

201201 201202 201203 201204 201205 201206 201207 201208 201209 201210 201211 201212 201301 201302 201303 201304 201305 201306 201307 201308 201309
Quarterly Consensus Forecast
September 9, 2013

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Real GDP</td>
<td>0.1</td>
<td>1.3</td>
<td>2.8</td>
<td>3.4</td>
<td>3.5</td>
<td>1.4</td>
<td>1.1</td>
<td>0.7</td>
<td>0.0</td>
<td>1.5</td>
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<tr>
<td>Y/Y percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>CPI</td>
<td>-0.6</td>
<td>-0.2</td>
<td>0.5</td>
<td>0.7</td>
<td>0.9</td>
<td>2.8</td>
<td>2.7</td>
<td>2.6</td>
<td>2.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Y/Y percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(1.0)</td>
<td>(0.9)</td>
<td>(0.8)</td>
<td>(1.0)</td>
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</tbody>
</table>

Note: Numbers in parentheses indicate the inflation rate without consumption tax increase planned in April 2014.

Source: Consensus Economics Inc.
Is Japan on track to beat deflation?

1. Recent improvement in CPI is mainly from “cost push” shocks
2. Japanese CPI contains substantial upward bias
3. The Phillips curve is flat, and there is no sign of upward shift
Recent improvement in CPI is from “cost push” shocks rather than “demand pull” shocks

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
<th>Y/Y Nov 2012</th>
<th>Y/Y July 2013</th>
<th>Contribution</th>
</tr>
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<tbody>
<tr>
<td>Total CPI</td>
<td>10000</td>
<td>-0.2</td>
<td>0.7</td>
<td>0.900</td>
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<tr>
<td>1. Gasoline</td>
<td>229</td>
<td>2.6</td>
<td>10.5</td>
<td>0.177</td>
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<tr>
<td>2. Electricity</td>
<td>317</td>
<td>4.8</td>
<td>10.1</td>
<td>0.164</td>
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<tr>
<td>3. Cabbage</td>
<td>9</td>
<td>-28.9</td>
<td>41.9</td>
<td>0.062</td>
</tr>
<tr>
<td>4. Cellular phones</td>
<td>54</td>
<td>-13.2</td>
<td>-1.5</td>
<td>0.062</td>
</tr>
<tr>
<td>5. Automotive insurance premium</td>
<td>34</td>
<td>0.0</td>
<td>13.6</td>
<td>0.045</td>
</tr>
<tr>
<td>6. Handbags (imported)</td>
<td>16</td>
<td>0.0</td>
<td>27.5</td>
<td>0.043</td>
</tr>
<tr>
<td>7. Personal computers (notes)</td>
<td>20</td>
<td>-14.0</td>
<td>5.4</td>
<td>0.038</td>
</tr>
<tr>
<td>8. Kerosene</td>
<td>50</td>
<td>3.4</td>
<td>10.0</td>
<td>0.032</td>
</tr>
<tr>
<td>9. Hamburgers</td>
<td>22</td>
<td>0.0</td>
<td>14.7</td>
<td>0.032</td>
</tr>
<tr>
<td>10. Personal computers (desktops)</td>
<td>10</td>
<td>-7.7</td>
<td>23.1</td>
<td>0.030</td>
</tr>
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</table>
# Upward Bias in CPI

<table>
<thead>
<tr>
<th></th>
<th>Grocery CPI</th>
<th>Total CPI</th>
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<tbody>
<tr>
<td></td>
<td>Compiled by SJB</td>
<td>Compiled by UTokyo</td>
</tr>
<tr>
<td></td>
<td>Laspeyres</td>
<td>Tornqvist</td>
</tr>
<tr>
<td>Jan-13</td>
<td>-0.72%</td>
<td>-1.06%</td>
</tr>
<tr>
<td>Feb-13</td>
<td>-0.68%</td>
<td>-1.13%</td>
</tr>
<tr>
<td>Mar-13</td>
<td>-0.70%</td>
<td>-1.00%</td>
</tr>
<tr>
<td>Apr-13</td>
<td>-0.78%</td>
<td>-1.09%</td>
</tr>
<tr>
<td>May-13</td>
<td>-0.66%</td>
<td>-0.97%</td>
</tr>
<tr>
<td>Jun-13</td>
<td>-0.54%</td>
<td>-0.82%</td>
</tr>
<tr>
<td>Jul-13</td>
<td>-0.52%</td>
<td>-0.79%</td>
</tr>
<tr>
<td>Aug-13</td>
<td>n.a.</td>
<td>-0.63%</td>
</tr>
<tr>
<td>Sep-13</td>
<td>n.a.</td>
<td>-0.43%</td>
</tr>
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</table>
Flattening of the Phillips curve

CPI Inflation vs. Unemployment rate

- 1971-1989
- 1990-1999
- 2000-2012
To what extent do you raise your product prices in response to a marginal cost increase?

- Almost 100% pass-through: 21%
- Half: 23%
- Less than half: 12%
- No pass-through: 26%
- Other: 18%

Why you do not raise your price?

- Need to keep long term relationship with customers: 53%
- Rival firms may not raise their prices: 44%
- Need to avoid substantial decline in sales: 34%
- Prices are determined not by sellers but by customers: 20%

Source: Annual Report on the Japanese Economy and Public Finance, July 2013
Frequency of temporary price reductions at supermarkets estimated using scanner data

Temporary price reduction occurs once a four days.

Source: Sudo et al (2013)
Flattening of the Phillips curve

CPI Inflation vs. Unemployment rate for different time periods:
- 1971-1989 (Green circles)
- 1990-1999 (Blue squares)
- 2000-2012 (Red circles)
Slope in 2000-2012: $y=0.189x+0.085$
Slope in 1990-1999: $y=0.535x+0.897$

Given the slope in 2000-12, the output gap needs to be improved by 10 percent to raise inflation by 2 percent.
Any sign of upward shift in the Phillips curve?

Phillips Curves in Jan 2009 - July 2013

- Jan 2009 - Nov 2012
- Dec 2012 - July 2013

BOJ Inflation Target

\[ y = -2.00x + 7.93 \]

\[ y = -1.56x + 6.84 \]