USING EUROPEAN COMMISSION SURVEY DATA TO ANALYSE CONSUMER INFLATION EXPECTATIONS AND PERCEPTIONS IN POLAND

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The use of survey data on inflation perceptions and expectations at the NBP

- Consumer surveys conducted by the European Commission provide a unique data set allowing to monitor empirical measures of inflation perceptions and expectations in EU economies. Measures of this kind are of particular interest for central banks.

- Selected areas, in which EC survey data on consumer inflation expectations are used at the National Bank of Poland:
  - developing techniques for quantifying survey data;
  - testing various features of inflation expectations (cross-country comparisons);
  - measuring central bank credibility;
  - modelling monetary transmission mechanism;
  - communication with the public.
Aims of the presentation

- To compare the phrasing of survey questions on perceived and expected price changes in the GfK Polonia consumer survey, conducted under the joint EU program, to the phrasing of harmonised questions.

- To assess the extent, to which phrasing differences affect:
  - survey data;
  - quantified measures of perceived and expected inflation;
  - assessment of selected features of the formation of consumer inflation expectations in Poland.
**Survey question on expected price changes**

**EC harmonized question:**

“By comparison with the past 12 months, how do you expect that consumer prices will develop in the next 12 months? They will:

(1) increase more rapidly;
(2) increase at the same rate;
(3) increase at a slower rate;
(4) stay about the same;
(5) fall.”

**GfK Polonia survey question:**

“In your opinion, compared to the current situation, how do you expect that prices will develop in the next 12 months? They will:

(1) increase more rapidly;
(2) increase at the same rate;
(3) increase at a slower rate;
(4) stay about the same;
(5) fall.”
Survey question on perceived price changes

EC harmonized question:

“In your opinion, is the price level now compared to that 12 months ago:  
(1) much higher;  
(2) moderately higher;  
(3) a little higher;  
(4) about the same;  
(5) lower.”

GfK Polonia survey question:

“Are the prices now compared to those 12 months ago:  
(1) much higher;  
(2) higher;  
(3) a little higher;  
(4) about the same;  
(5) lower.”
Survey data on perceived price changes

Response: “prices are much higher”:

Response: “prices are moderately higher” (EC) / “prices are higher” (GfK Pol):
**Survey question on perceived price changes in other consumer surveys in Poland**

GfK Polonia survey:

“Are the prices now compared to those 12 months ago:
(1) much higher;
(2) higher;
(3) a little higher;
(4) about the same;
(5) lower.”

GUS survey:

“(…) how the consumer prices have changed over the last 12 months:
(1) increased a lot;
(2) increased moderately;
(3) increased slightly;
(4) stayed about the same;
(5) fall.”

Ipsos survey:

“In your assessment, how prices have changed over the last 12 months:
(1) increased a lot;
(2) increased moderately;
(3) increased slightly;
(4) stayed about the same;
(5) fall.”
Impact of phrasing differences on survey data

![Bar chart showing phrasing differences between GfK Polonia, GUS, and Ipsos for survey data. The chart compares responses for questions P1 to P5.](chart.png)
Impact of phrasing differences on quantified measures of inflation perception and expectations

Inflation perception:

Inflation expectations:
We use two measures of consumer inflation expectations proposed by Łyziak (2012). They are quantified with the probability approach with different proxies for perceived inflation, calculated either on the basis of GfK Polonia survey data or on the basis of the average distribution of responses in three consumer surveys available for Poland (GfK Polonia, GUS, Ipsos).

We assess to what extent those measures differ from each other in terms of:

- expectational errors;
- fulfilment of the main requirements of the rational expectations hypothesis (unbiasedness, macroeconomic efficiency);
- degree of forward-lookingness;
- impact of the NBP inflation target on expectations.
**Impact of phrasing differences on the assessment of the formation of consumer inflation expectations**

Selected features of the measures of expectations used in Łyziak (2012), May 2001 – April 2011:

<table>
<thead>
<tr>
<th>Source of survey data on perceived inflation</th>
<th>GfK Polonia</th>
<th>GfK Polonia, GUS, Ipsos (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean error (p.p.)</td>
<td>-0.54</td>
<td>-0.01</td>
</tr>
<tr>
<td>Mean absolute error (p.p.)</td>
<td>1.74</td>
<td>2.00</td>
</tr>
<tr>
<td>Are expectations unbiased?</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Are expectational errors orthogonal with respect to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• WIBOR 1M</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• WIBOR 3M</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• PLN/ EUR</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>• PLN/USD</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>• Industrial output</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>• Unemployment rate</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Oil price</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>• CPI</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>The weight of forward-looking model in the formation of expectations</td>
<td>0.16</td>
<td>0.15</td>
</tr>
<tr>
<td>The weight of the NBP inflation target in the formation of expectations</td>
<td>0.14</td>
<td>0.13</td>
</tr>
</tbody>
</table>
Why not to use quantitative survey questions as a cross-check?

- More precise quantitative questions yield more precise, but not necessarily more accurate answers – the ‘truth elicitation problem’ (Pesaran and Weale 2006).

- When asked for numerical estimates of the perceived and expected rate of inflation, uncertainty increases considerably (Jonung 1986).

- Respondents give random, imprecise and inconsistent quantitative estimates of their inflation perception and expectations:
  - digit preference (e.g. Curtin 2009).
  - inconsistency of qualitative and quantitative responses (e.g. Buiten and Rooijakkers 2003).
Why not to use quantitative survey questions as a cross-check?

- Quantitative survey questions in Poland, 2003-2007:
  - Consistency between qualitative and quantitative responses on the aggregate level (respondents selecting more pessimistic qualitative responses provide also higher quantitative responses on average).
  - Inconsistency between qualitative and quantitative individual responses:
    - 41% of respondents declaring that prices will increase more rapidly give inconsistent numbers;
    - 48% of respondents declaring that prices will increase at slower rate give inconsistent numbers.
  - Declaring specific numbers:
    - 70% of respondents perceived inflation is divisible by 5;
    - 67% of respondents perceived inflation is divisible by 5.
Conclusions

- Survey question on perceived price changes used in the EC survey conducted in Poland by GfK Polonia is not the exact translation of the harmonised question.

- Differences in this respect are not neutral from the point of view of survey results, affecting survey-based measures of perceived and expected inflation.

- However, those differences have a little influence on the assessment how consumers form their inflation expectations in Poland.

- Nevertheless, when presenting and interpreting EC consumer survey data more efforts should be devoted to analysing the degree of harmonisation of survey questions included in national surveys.