Investigations on Responding Habit:
Case Study for the Business Tendency Survey of Turkey

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*The views and opinions expressed are those of the presenter and not necessarily those of the CBRT
Aim and Methods

Business Tendency Survey and data evaluation

Focus on Question of General Tendency of Current Economic Situation ‘Remain Unchanged’ answers

Ad hoc Interpolation Method and Results
I. On a Likert ´´Remain Unchanged´´ Answers of Business Tendency Survey

II. Desire to understand cognitively ´´what if otherwise´´ meant

III. Ad hoc interpolation method with assumptions, no intention to edit data

IV. Bachman’s uncertainty (2010) measure as a tool
Business Tendency Survey

**Sample size** around 2000 (February 2017)

**Response rate** around 80 percent (February 2017)

**Sampling unit** senior managers

**Sampling method** nonprobability sampling

**Data Collection** mail, web, email

**Answers** 3 point Likert scale, multiple choice, ranking some factors

**Sectors covered** mining, food, textiles, forestry, paper products, chemicals, machinery, energy, metal
The method that Sutanto (1999) used for Indonesia case is followed.

The scales which are in the form of ‘more optimistic-remain unchanged-more pessimistic’ or ‘up-the same-down’ are coded.

Answers indicating improvement are scored 1
Answers indicating no change are scored 0
Answers indicating a worsening condition are scored -1
Balance (diffusion index) =

\[(\# \text{of participants answered up} - \# \text{of participants answered down})/N \times 100\ + 100\]

\(N = \text{Total number of firms participated to survey in related month}\)

**Balance > 100**: respondent is positive for related question

**Balance < 100**: respondent is negative for related question
Question 28 ‘General Tendency of Current Economic Situation’

- General tendency about current situation in respondent’s own sector compared to previous month is one of the questions of business confidence index

- Answers are

  - Item non response (0)
  - More optimistic (1)
  - Remain Unchanged (2)
  - More pessimistic (3)
  - Unit non response (none)

- On average 60 percent of respondents are in ‘2’
Response Alternatives of Q ‘General Tendency of Current Economic Situation’
Diffusion Index of Q (unweighted data)
How would you think if you are to answer?
Possible Interpretations of ‘Remain Unchanged’

1. Same as Before
2. Not informative (Donot know)
3. Same change as before (Increase or Decrease)
What matters in diffusion index calculations?

IF MEANING
‘Same as before’ arithmetically NULL
OR IF MEANING
‘Donot know’ arithmetically NULL
OR IF MEANING
‘Same change as before’ not equal to NULL
## Ad hoc Interpolation Method

### Table 1: Procedure for Interpolating "Remain Unchanged" ("2") Answer for Question 28

<table>
<thead>
<tr>
<th>In Survey S-6, the Firm A Responded</th>
<th>In Survey S-5, the Firm A Responded</th>
<th>In Survey S-4, the Firm A Responded</th>
<th>In Survey S-3, the Firm A Responded</th>
<th>In Survey S-2, the Firm A Responded</th>
<th>In Survey S-1, the Firm A Responded</th>
<th>Interpolated Response of Firm A in S Correspondingly</th>
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<td>3</td>
<td>3</td>
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</tbody>
</table>

**Notes:** "None": Unit Nonresponse (No participation in given month), "0": Item Nonresponse (No answer to this question in a given month), "1": More Optimistic, "2": Remain Unchanged, "3": More Pessimistic
Data Interpretation

- Diffusion indices before and after interpolation are compared.

- Calculated uncertainty measure (Bachman, et al., 2010) as a tool:

\[ U_t = \sqrt{\frac{Frac_t(+) + Frac_t(-)}{2}} - \{\frac{Frac_t(+)}{-} - \frac{Frac_t(-)}{-}\}^2 \]

where \( Frac_t(-) \) is the fraction of “pessimistic” responses to a survey question at time \( t \).
Original and Interpolated Balances
(Unweighted Data)

Original Diffusion Index
Interpolated Diffusion Index

* January and February data
The Cross Sectional Standard Deviation Before and After Interpolation
Results

- After interpolation pessimistic times *more pessimistic* optimistic times *more optimistic*
- Time to time increasing amount of neutral responses reflects *indecisive/ uncertain minds*
- Addresses periods when *economic activity slow down*
- Cycle before and after goes a long, *no information loss* with the recent balance discussed in each month
- **In summary,** relatively increasing neutral choices are possibly representing sluggish periods in economy
Qualitative research by using indepth interviews helpful

Evaluation of respondents (firms) behaviour in other questions of BTS

Necessary updates on data (reviewing profile’s of firm respondents, revisiting the sampling frame, delete/add firms)