Exploring Responding Behavior Behind «Remain Unchanged» Answers: Case Study for the Business Tendency of Turkey

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*The views and opinions expressed are those of the presenter and not necessarily those of the CBRT & Hacettepe University

Outline

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- Aim and Methods
- Business Tendency Survey (BTS) data and Business Confidence Index (BCI) calculated
- Ad hoc Interpolation Method and Results
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Research Question & Related Literature

- How is the decision on responding the general tendency on economic situations formed?
 - > Hidden donot know (Bovi, 2009)
 - Satisficing behaviour (Krosnick, 1991)
 - > Faces saving donot know (Sturgis, et al. 2014)
 - > Overpessimistic or overoptimistic (Kahneman and Tversky, 1974)

Aim in this Study

Core Q: What is the attitude behind business managers responding 'remain unchanged' in general economic conditions question?

Supplementary Qs:

- 1. How do they interpret their economic situation cognitively?
- 2.Which economic indicators direct their economic situation expectations?
- 3. Do they remember their answers from a previous period of the survey they responded (a month/2 months earlier or more)?

Aim: Why are we curious about that?

Response alternatives to "Your Opinion About the General Course of Business in your Industry, Compared to Previous Month"



Whether high percent of «remain unchanged» is affecting the interpretation of Business Confidence Index or not/ indirectly policies developed?

Methods

- First: Ad hoc interpolation method with assumptions (Note that no intention to edit data)
- Second: Decision trees models
- Third: Asking to the respondents, meetings with firms' business managers or accountants in depth interviews

Business Tendency Survey

- Self administered mode via mail, web, email with around 80% response rate
- Sampling method nonprobability sampling
- Sampling unit senior managers, accountants
- Sampling size around 2000 firms in manufacturing industry
- <u>Answers</u> 3 point Likert scale, multiple choice, ranking some factors
- Sectors covered mining, food, textiles, forestry, paper products, chemicals, machinery, energy, metal

Business Confidence Index Calculation

- The method that Sutanto (1999) used for Indonesia case is followed.
- The scales which are in the form of `´more optimisticremain 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

Business Confidence Index Calculation

- Balance (diffusion index) =
- (#of participants answered up # of participants answered down)/N *100
- N = 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
- Summing up those diffusion indices for some of the Qs calculates BCI

Ad Hoc Interpolation Method

How would you answer if you are to respond?
Possible Interpretations of '*Remain Unchanged*'

1. Same as Before

arithmetically NULL

2. Not informative (Donot know)

arithmetically NULL

3. Same change as before (Increase or Decrease)

not equal to NULL

Ad Hoc Interpolation Method

Table 1 : Procedure for Interpolating "Remain Unchanged" ("2") Answer for Question 28							
In Survey S- 6, the Firm A Responded	In Survey S- 5, the Firm A Responded	In Survey S- 4, the Firm A Responded	In Survey S- 3, the Firm A Responded	In Survey S- 2, the Firm A Responded	In Survey S- 1, the Firm A Responded	In Survey S, the Firm A Responded	Interpolated Response of Firm A in S Correspondingly
0,1,3	None, 2	2	0,1,3				
	0,1,3	None, 2	None, 2	None, 2	None, 2	2	0,1,3
		0,1,3	None, 2	None, 2	None, 2	2	0,1,3
			0,1,3	None, 2	None, 2	2	0,1,3
				0,1,3	None, 2	2	0,1,3
					0,1,3	2	0,1,3
2	None, 2	None, 2	None, 2	None, 2	None, 2	2	2
None, 2	None, 2	None, 2	None, 2	None, 2	None, 2	2	2
						None	None
						0	0
						1	1
						3	3

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

Ad Hoc Interpolation Method

- Diffusion indices before and after interpolation are compared
- Calculated uncertainty measure (Bachman, et.al., 2010) as a tool;
- $U_t = Sqrt [Frac_t(+) + Frac_t(-) {Frac_t(+) Frac_t(-)}^2]$

where Fract(-) is the fraction of "pessimistic" responses & Fract(+) is the fraction of "pessimistic" responses to a survey question at time t.





Ad Hoc Interpolation Method 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

Decision Trees; Input and Target Variables



Decision Trees Results

- Error rates between 0,24 and 0,29
- Some variables always effective in tree model & few pops up in certain sluggish times in economy
- Sometimes pessimism in past bring current pessimistic look or future pessimism holds with current
- > As a result, not a single structure in decision tree to model, partly due to missing so much info under neutral answers

Qualitative Research (QR)

- Indepth interviews with firms' business managers and accountants from different industries
- Participants responding «remain unchanged» for a long period are interviewed
- Interview guidelines used

Qualitative Research Results

- Mostly interpreted as «same change as before», same level. Once worse/better than previous month, direction of answer changes to -/+.
 Hypothesis for Ad hoc method holds
- A few interprets «same as before», difference is zero /arithmetically null
- Business managers and accountants' evaluations for all survey Qs differ

Summary Remarks & Further Studies

- > 3 point Likert scale? (QR, decision tree)
- Confusion on meaning? (QR, decision tree)
- Confusion due to volatile economy?

Uncertain respondents? (AdHoc method, QR, decision tree)

Further: Questionnaire design review?

Scales and its size review?

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

THANK YOU

