

Methods of quantifying qualitative data

A survey of recent project research and results

Rolf Schenker

July 29, 2008

Outline

- 1 Standard Quantification Methods
- 2 Project Results
- 3 Outlook

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Quantification Methods for qualitative data

Balance statistics

$$y_{t,Bal} \equiv C_t - A_t$$

where A_t : share of negative answers, C_t : share of positive answers.

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Carlson Parkin Method

$$y_{t,Pro} \equiv \frac{\kappa_{1,t} + \kappa_{2,t}}{\kappa_{1,t} - \kappa_{2,t}}$$

with $\kappa_{1,t} = \Phi^{-1}(A_t)$ and $\kappa_{2,t} = \Phi^{-1}(1 - C_t)$.

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Project Results

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- Response functions

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Contingency Table				
sign(quant)				
	-	0	+	all
down	-0.730	0.000	0.459	-0.349
equal	-0.625	0.000	0.511	-0.070
up	-0.648	0.000	0.679	0.216

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Carlson Parkin: Distribution of Quantitative Data

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Quantitative data is normally distributed
- Popular alternative assumption: logistic distribution

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- Assumption 6 in Carlson and Parkin (1975):
Quantitative data is normally distributed
- Popular alternative assumption: logistic distribution
- Empirics: data does not follow any of these parametric distributions

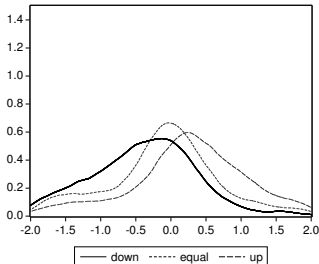
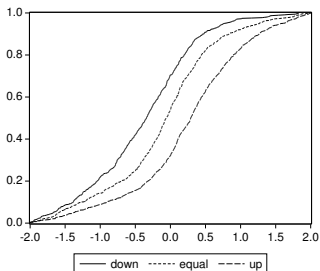
Sample	normal		logistic	
	Watson	p-value	Watson	p-value
complete	3.379	0.000	2.029	<0.005
truncated	1.116	0.000	0.548	<0.005

Carlson Parkin: Indifference Interval

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Indifference interval where respondents always answer “equal”
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- Assumption 4 in Carlson and Parkin (1975): Indifference interval where respondents allways answer “equal”
- Indifference interval is symmetric around 0
- Empirics: answers for “equal” are spread on a large intervall



Conditional Absolute Null

- Uses the fact that mean/median of the quantitative answers for “equal” is indeed 0.

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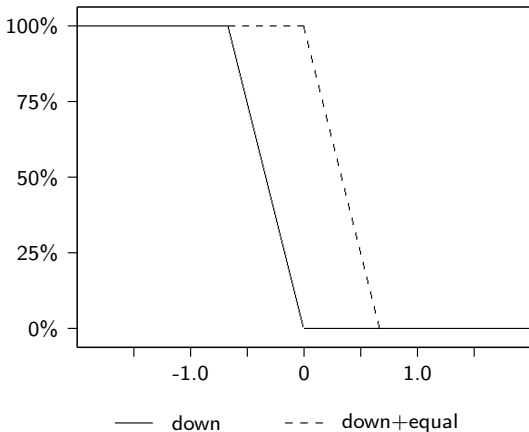
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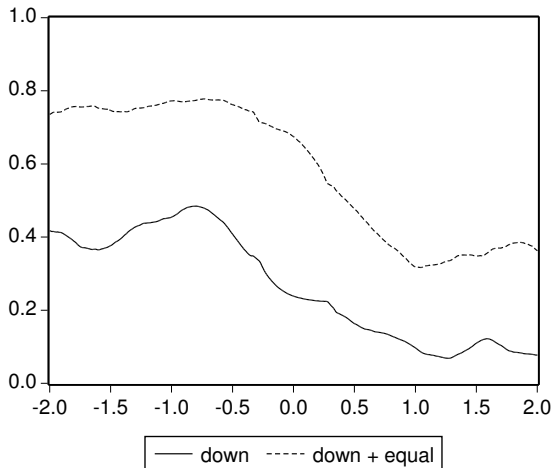
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- Results in two different estimates for thresholds.
- Conditional Absolute Null can deal with the zero response problem (one of the proposed responses has never been selected).

Theoretical Response Functions



Empirical Response Functions



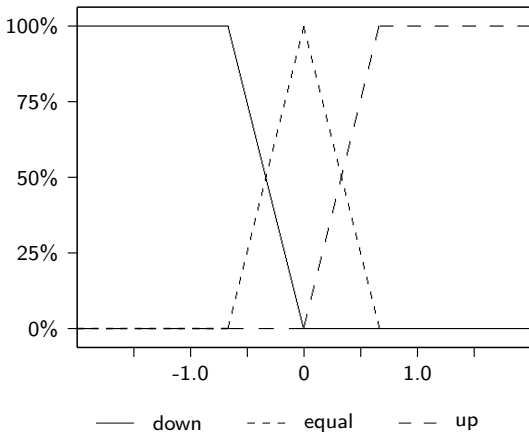
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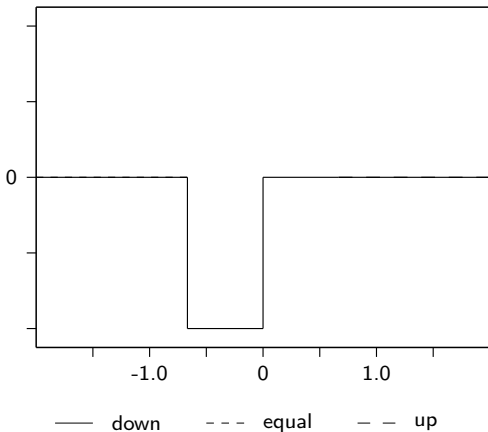
Response functions

- (parametric) estimations of empirical response functions
- Develop quantification method based on response functions

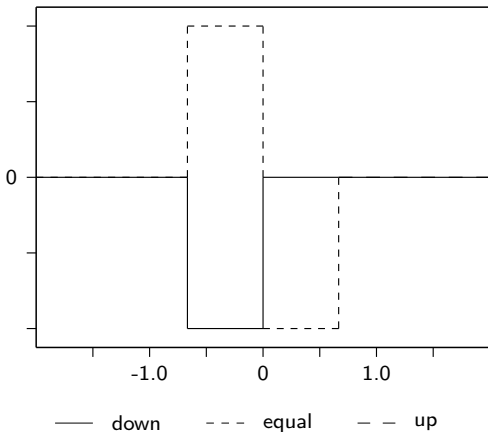
Theoretical Response Functions



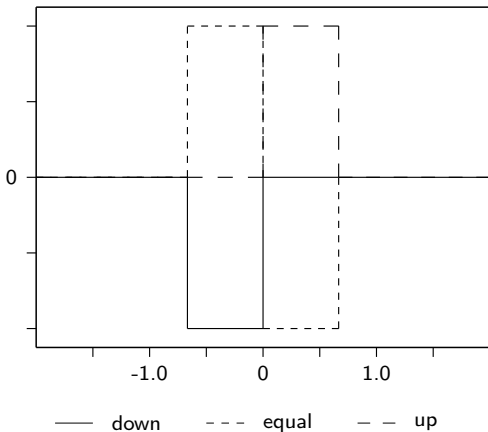
Theoretical Response Functions



Theoretical Response Functions



Theoretical Response Functions



Literature



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