

Price elasticities and possible taxation of non-healthy food in Spain

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Data

- Microdata from **Household Budget Survey**
- Annual operation focus on private households. Data are collected in two ways: by direct note-taking by the household and personal interviews. Soft Drinks -> two weeks direct note-taking.
- Sample from 2006 to 2015. Cross sectional data.
- Products are grouped using the COICOP classification. Data are available to 4 digits level
- Variable of interest is code 0.1.2.2.2: soft drinks, as sodas, lemonades or colas, excluding non-alcoholic beverages which are generally alcoholic such as non-alcoholic beer

Data

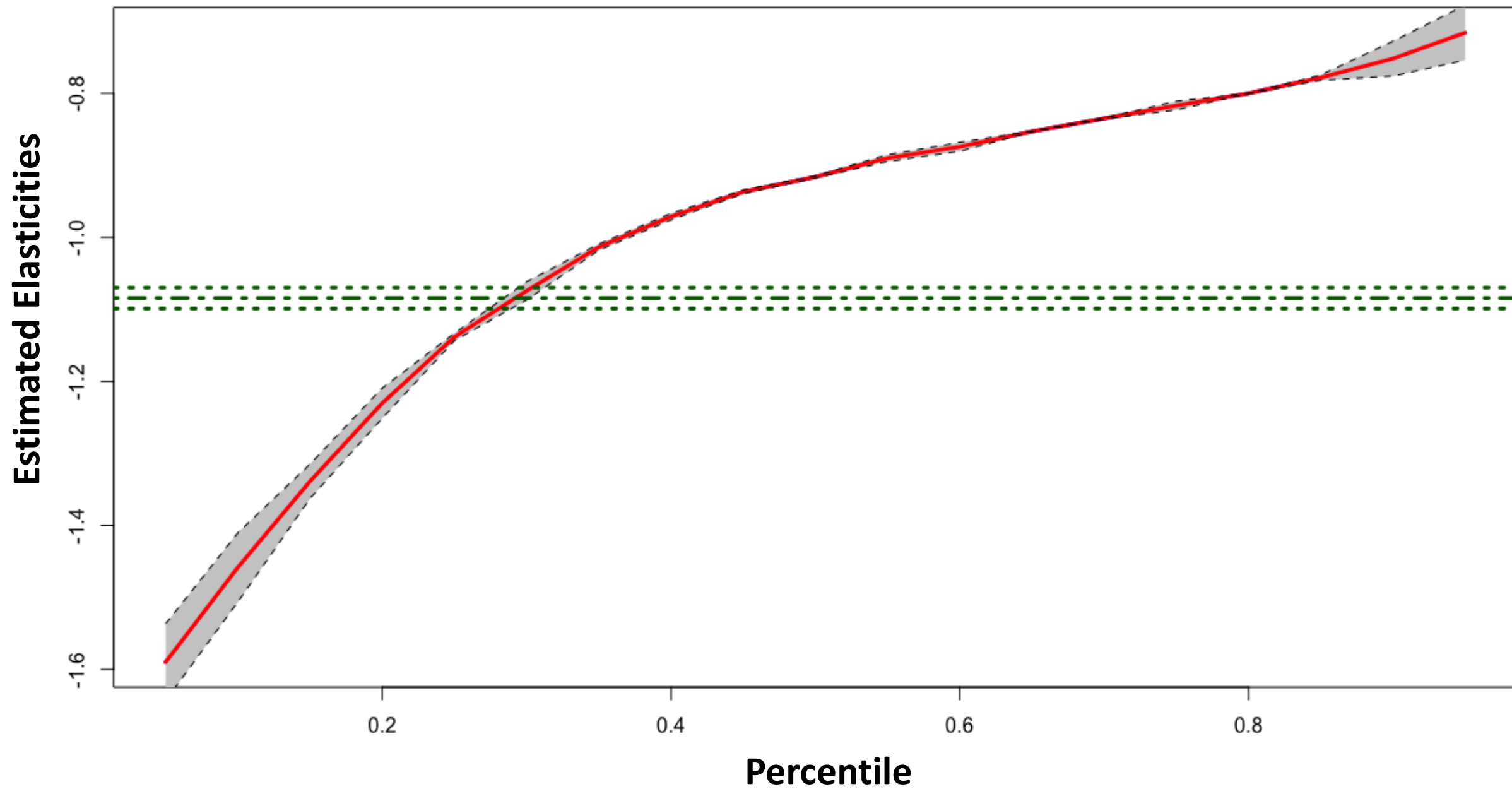
- Total expenditure and quantities for all products of consumer basket are available
- Quantities are relativized using the modified OECD scale $1 + 0,5 * (N_Adults - 1) + 0,3 * N_NonAdults$
- Prices are approximated using “units of values” by obtaining the ratio between expenditure and quantities

Some previous works

Author/s	Year	Country	Elasticity
Allais et al	2010	France	-0.98
Lin	2011	USA	Low Income: -0.94; High Income: -1.29
Block et al	2010	Boston(Hos)	Mean: -0.7; (-0.4:-1.1) 95%CI
Ritter	2015	Peru	-1.3
Andreyeva et al (MetaAna)	2010	USA	Mean: -0.79; Min: -0.33; Max: -1.24
Miao et al (MetaAna)	2013	USA	Mean: -0.95; Sd: 0.36; Min:-0.55; Max: -1.26
Powell et al	2013	USA	Mean: -1.25; Min: -0.77; Max: -2.26
Gustavsen et al	2013	Norway	1C: -2.57; 2C: -1.63; 3C: -1.19

- High variability on the estimations
- Much of this variability rely on the definition of carbonated sugar drinks and products included onto the study -> We also have this problem on our data

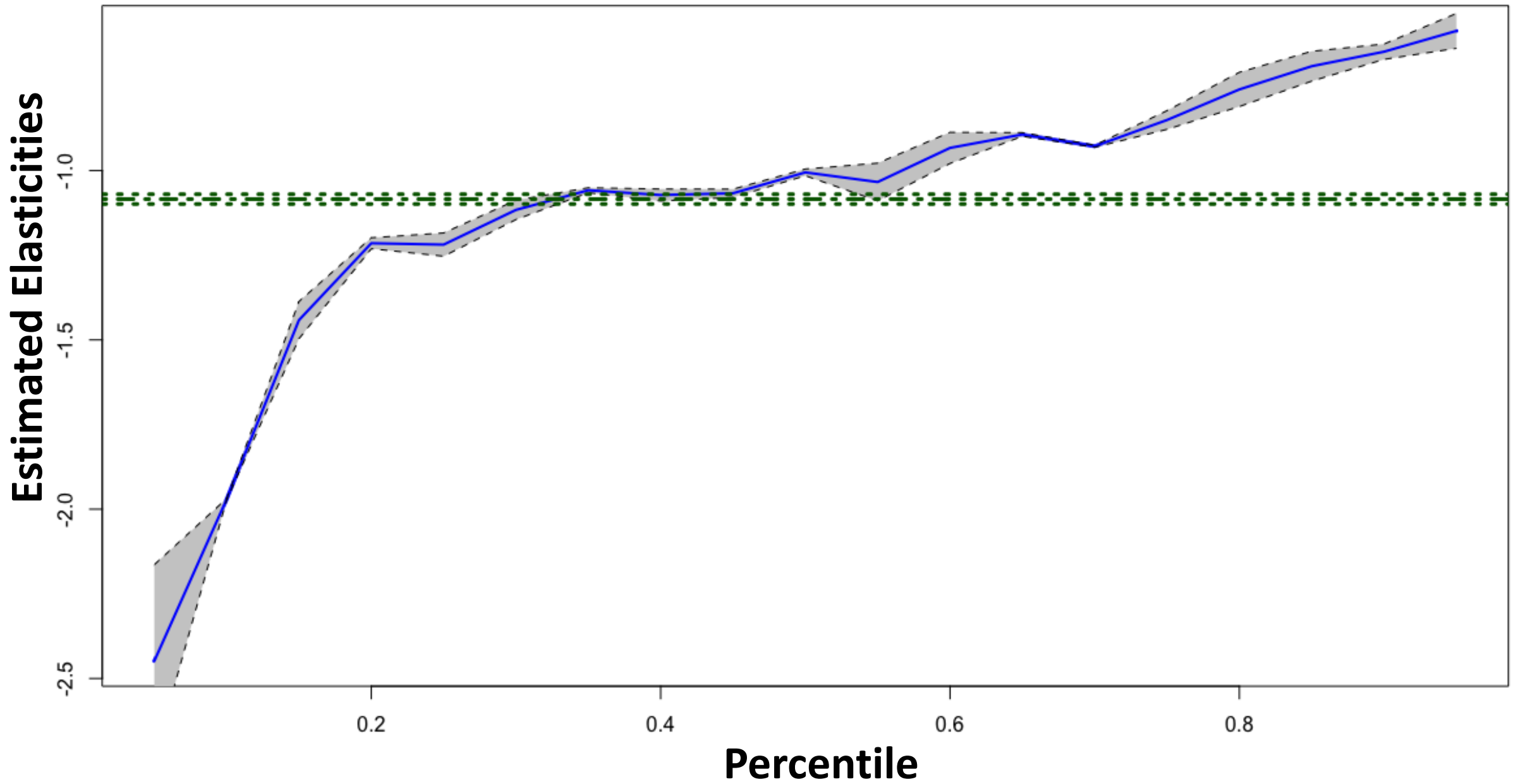
Conditional Estimation



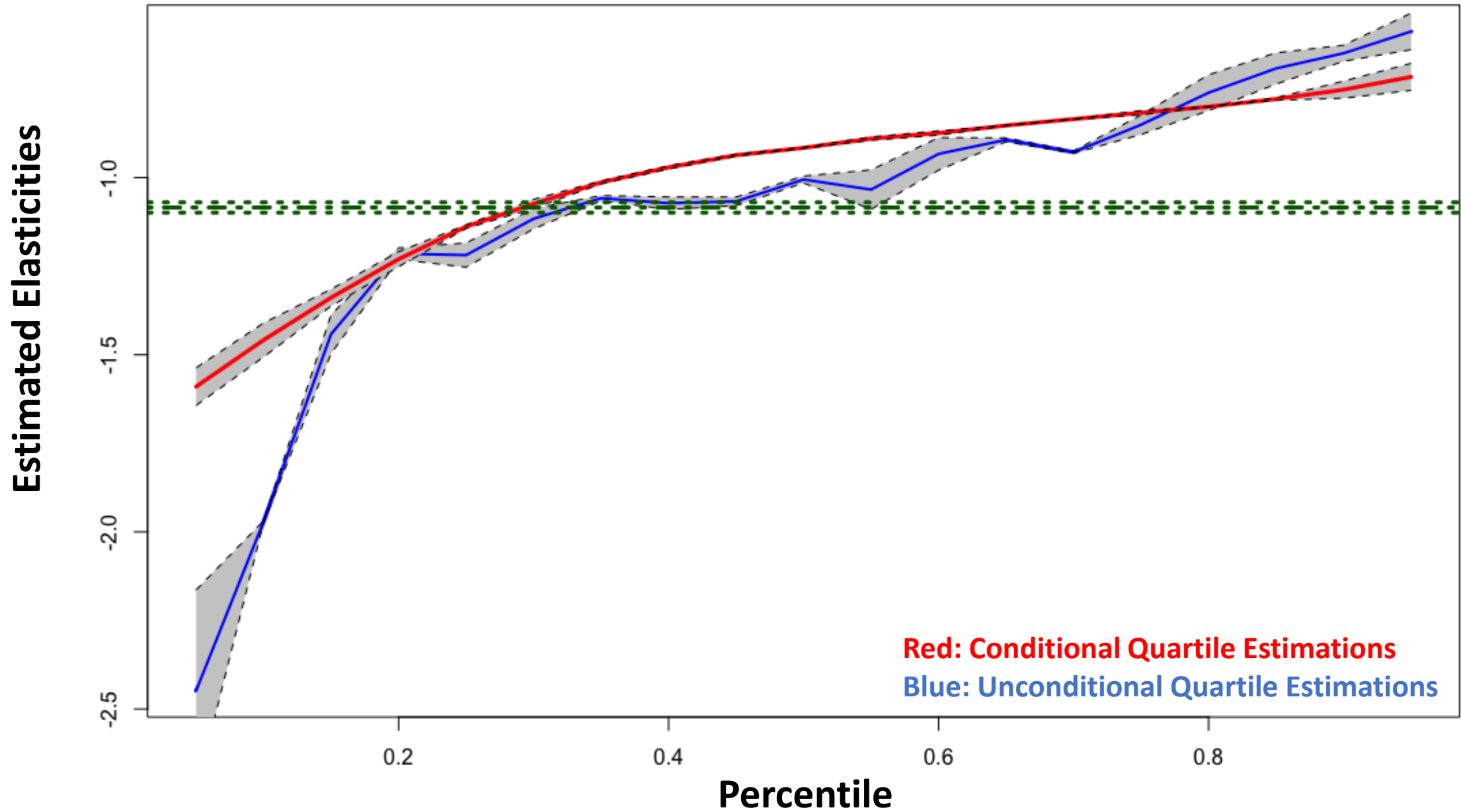
Limitations of Conditional Estimations

- Estimations do not hold the “Law of iterated expectations” as in OLS, so unconditional effects can not be inferred from the conditional estimations.
- This means that, the calculated elasticities must be interpreted with some caution. As explained in Buchinsky (1998), a household, that is in the h quantile before a price change, will not necessarily remain in that quantile after the change.

Unconditional Estimation



OLS – Conditional and Unconditional Estimation



Conclusions

- Real prices are not available, only “units of value”
- Soft drinks. This group includes Diet and non-Diet Drinks
- Endogeneity
- Estimations on the mean are not efficient
- Small effects on “light users” and large effects on “heavy users”