Heterogenous consumer reactions to health news

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Chesher Fest, Cemmap, 2014

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- Our interest: using micro data to examine heterogeneity in responses to nutrition and health information.
- Who processes information well, who gets it wrong and who simply ignores it?
- Focus of this study: information on fish and the demands for fatty fish and lean fish.

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- Bad news on fatty fish: dioxins and mercury - accumulates much more in fatty fish.

Our health information indices

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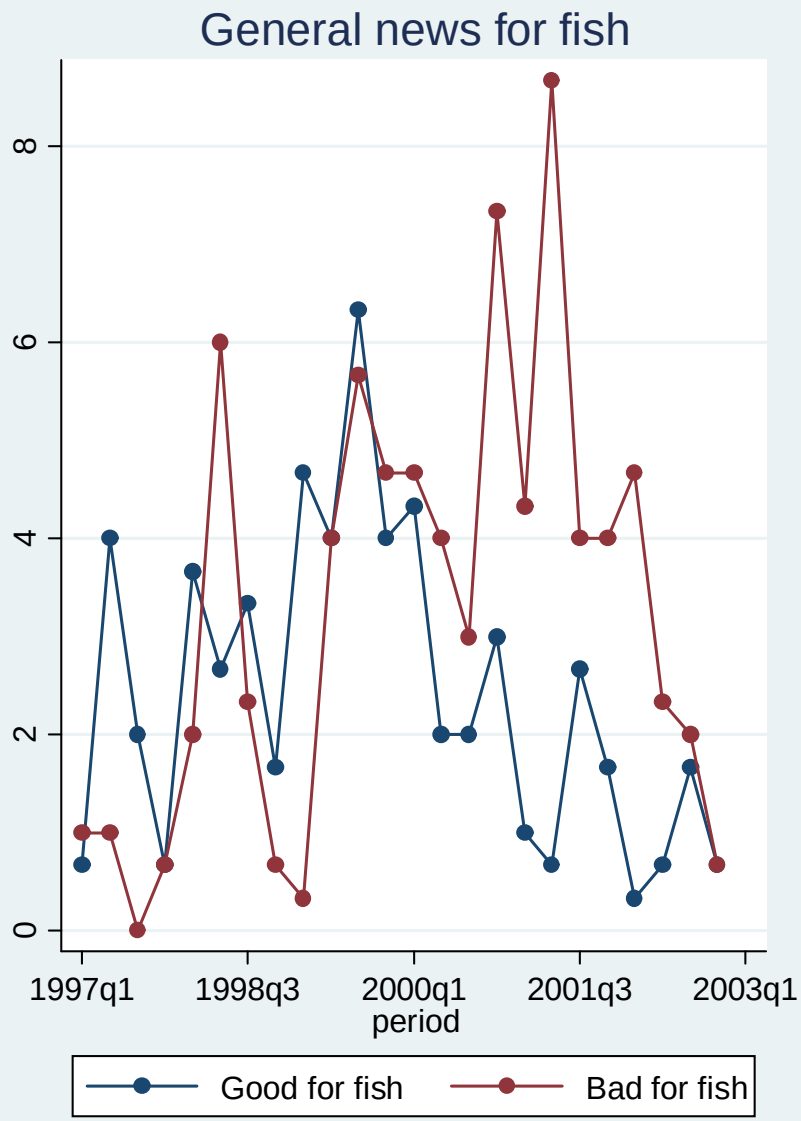
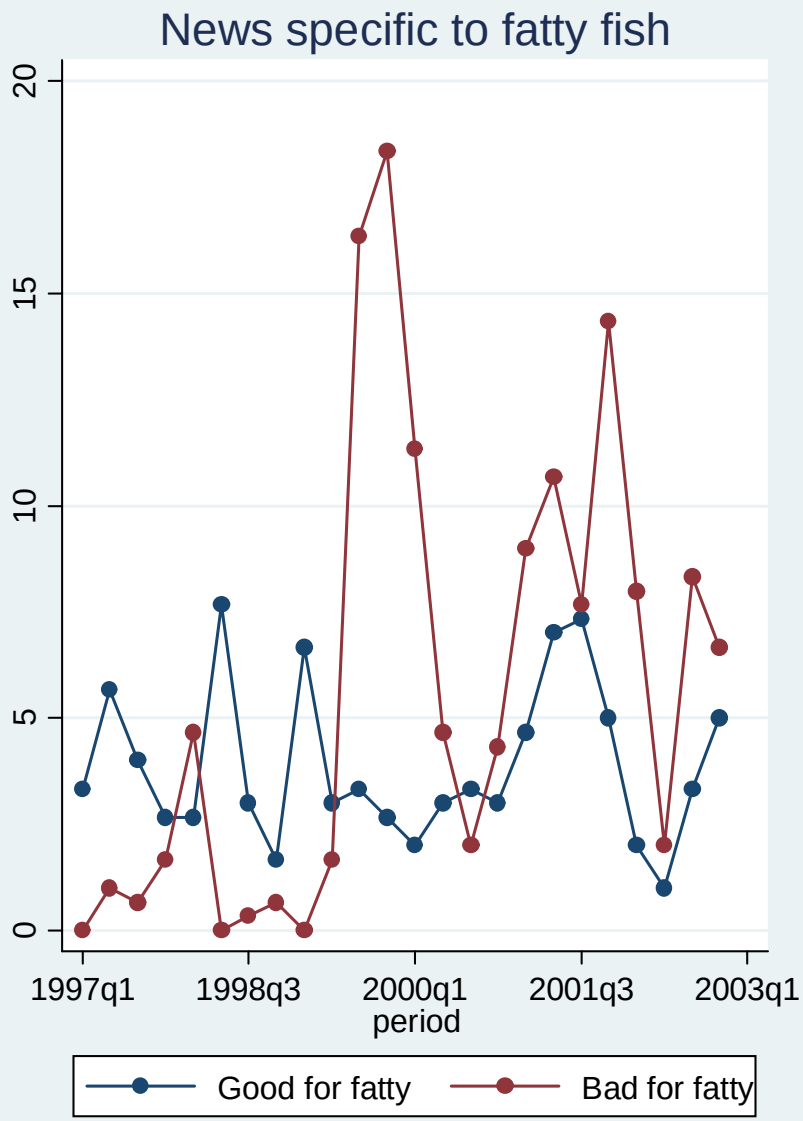
- Based on a search of main newspapers and the main TV channels, we construct counts of fish and health related news items in Denmark from 1996, $Q1$ to 2002, $Q4$.
- The index we construct for a given quarter is weighted current and lagged months.


General news for fish
0
2
4
6
8
1997q1
1998q3
2000q1
2001q3
2003q1
period
Good for fish
Bad for fish


News specific to fatty fish
0
5
10
15
20
1997q1
1998q3
2000q1
2001q3
2003q1
period
Good for fatty
Bad for fatty

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- The values of the two raw net news indices vary between -15 and $+10$. We take a (tanh) transformation of the two count net measures to give a decreasing marginal impact of news.

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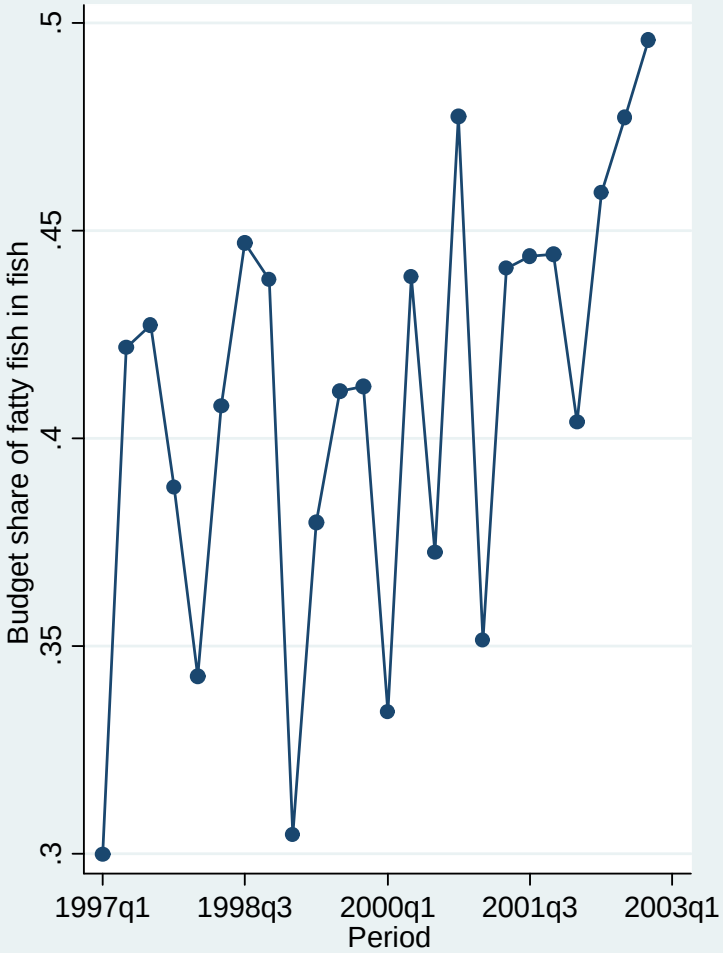
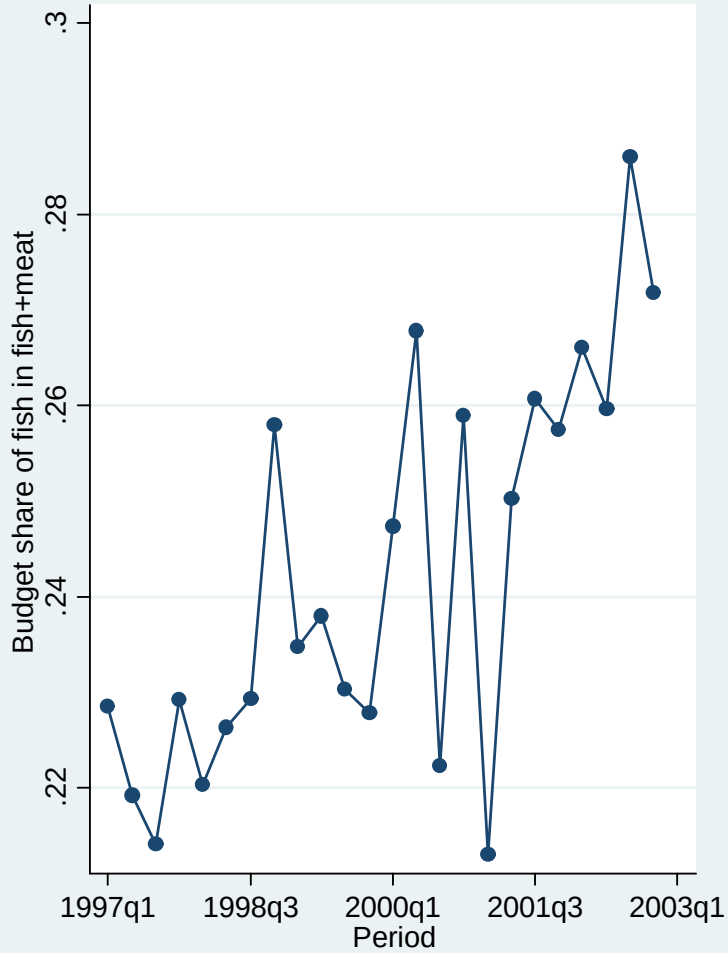
- Not representative - ambiguous whether more or less likely to be responsive to fish news.

Budget shares of fatty fish and fish





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- We allow α to vary from period to period due to taste shocks, seasonality and health news; denote the value in period t by α_t.
- The observed budget share is given by:

$$\omega_t = \min\left(1, \max\left(\alpha_t, 0\right)\right)$$

Dynamics

- We model α as a first order auto-regressive model depending on current and lagged fatty/lean news (d) and general fish news (g):

$$\alpha_t = \mu(1-\rho) + \rho\alpha_{t-1} + (\delta_0 d_t + \delta_1 d_{t-1}) + (\gamma_0 g_t + \gamma_1 g_{t-1}) + \sigma\varepsilon_t$$

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- We develop a price change interpretation of the impact of news.

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- For the lagged fatty fish news parameter we take:

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- Another example, low volatility households may be less willing to switch from their current behaviour as a consequence of specific news. That is, we allow that σ and π may be correlated.

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- Use 50 ap's for fitting.
- Keep back 6 ap's to provide quasi-LM moment tests for the Cobb-Douglas assumptions and the zero serial correlation assumption for ε_{ht}.

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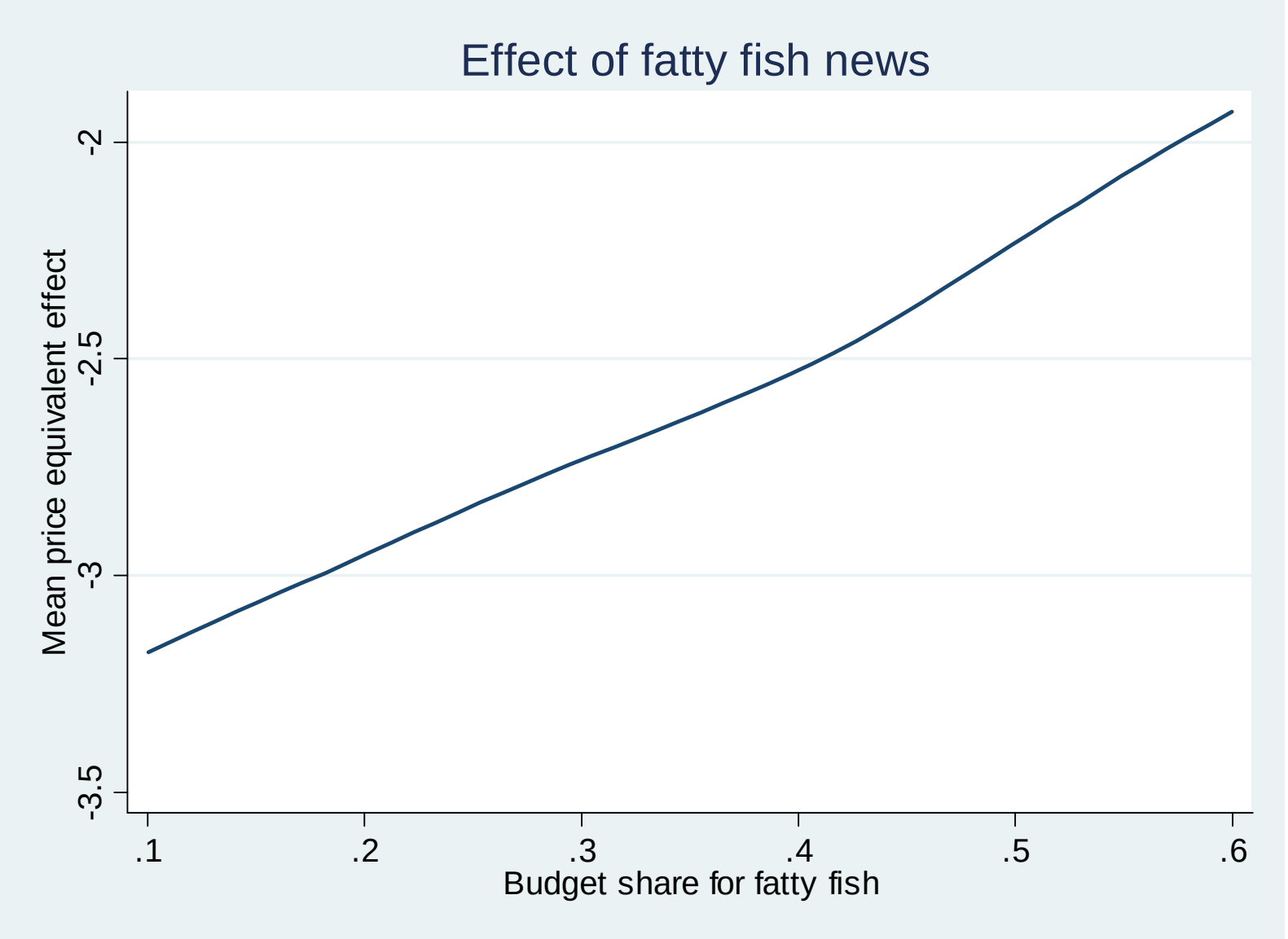
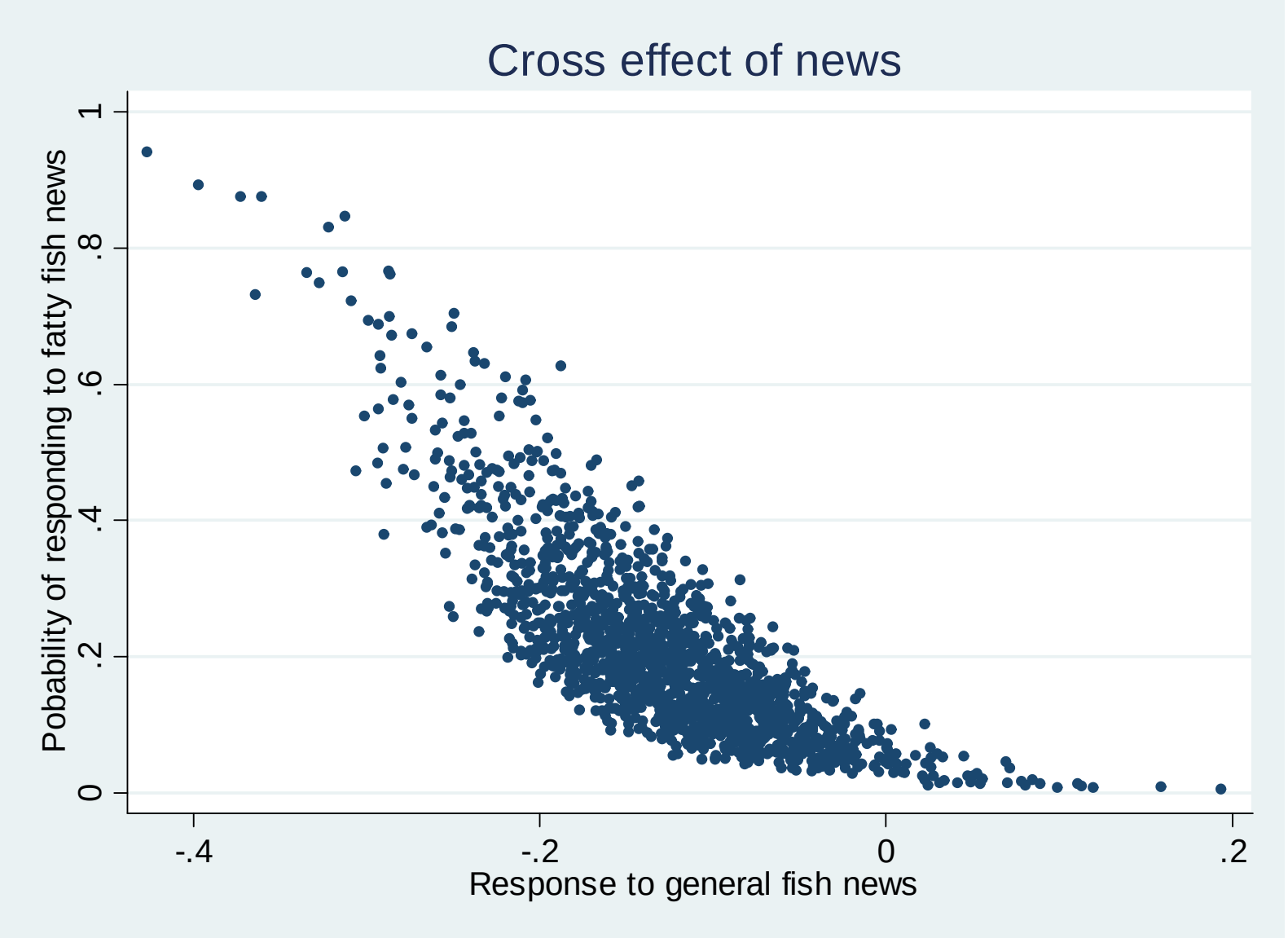
- For those who respond, $(0 \rightarrow 1)$ or $(5 \rightarrow 10)$ positive news items about fatty fish effectively decreases the perceived price of fatty fish by 13.2%.
- The lagged effect is negative so that the impact of fatty fish news initially dies away more quickly than for other shocks.

Response to fatty fish news and the budget share



Co-dependence between responses to news



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- These consumers have a large reaction with some initial over-reaction.
- Those with a high budget share for fatty fish are less likely to react to news.
- Those with a high probability of reacting to fatty fish news also react more to general news.
- The other 79% take no notice. Either because they are well informed and the news does not shift their beliefs or because they care less about their health.