

Kakei Data Revisited

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What Are the Problems in the Data

- There are two issues in the Kakei data
 - The expenditure patterns do not reveal the non-homotheticity across a, m, s
 - Zero rent payment problem

Zero-Expenditure Problem

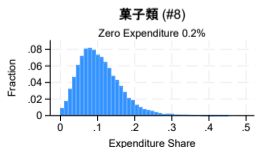
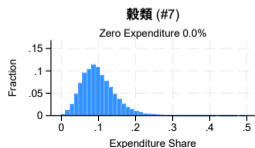
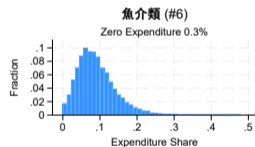
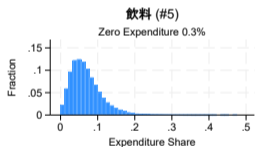
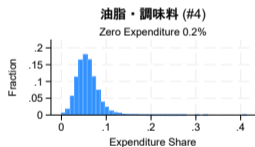
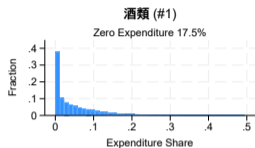
- Let me begin with zero-expenditure problem
- What I compute here is within-sector subcategory-level expenditure share

$$\omega_n^{ij} = \frac{E_n^{ij}}{\sum_{j' \in i} E_n^{ij'}}$$

- For example $j = \text{Rent}$ is zero for many households
- We can eliminate the rent, but there may be other sectors with a lot of zero expenditures
- For each i , compute ω_n^{ij} and then compute the median across households
- Will show nine subcategories with smallest median

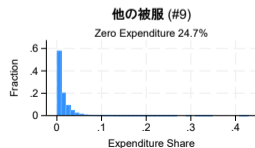
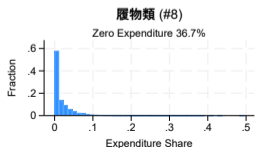
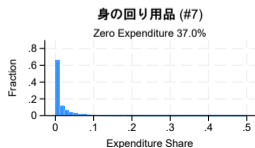
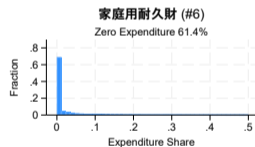
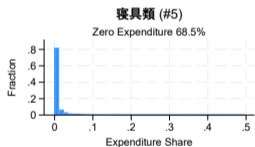
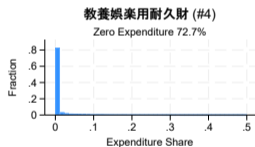
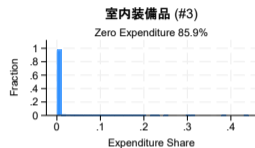
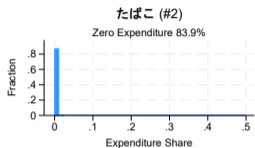
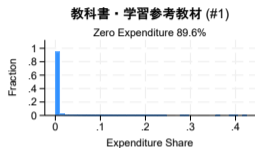
Zero-Expenditure Problem: 2020 Agri

Expenditure Share Distributin: Agriculture in 2020



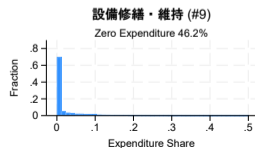
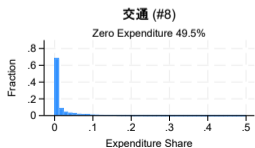
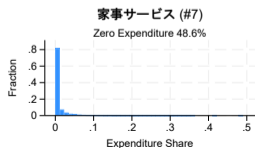
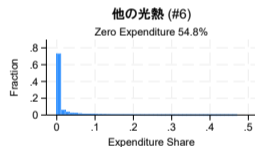
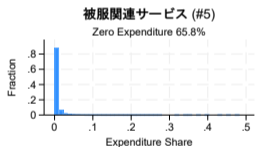
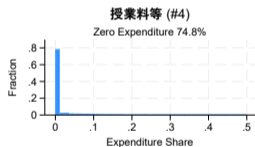
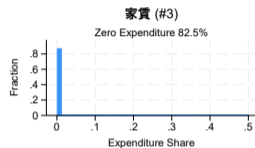
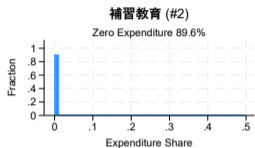
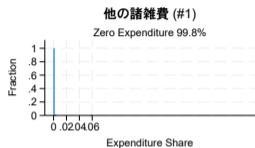
Zero-Expenditure Problem: 2020 Manufacturing

Expenditure Share Distributin: Manufacturing in 2020



Zero-Expenditure Problem: 2020 Service

Expenditure Share Distributin: Service in 2020



Non-Homotheticity in Kakei Data

- Next, non-homotheticity problem
- Does the data exhibit the non-homotheticity?
- The data doesn't look like (especially service)!

Non-Homotheticity in Kakei Data

- Let's plot the income and expenditure share
- Here, income is ...
 - Household expenditure ($\sum_i E_n^i$)
 - Household expenditure per member ($\sum_i E_n^i/N_n$)

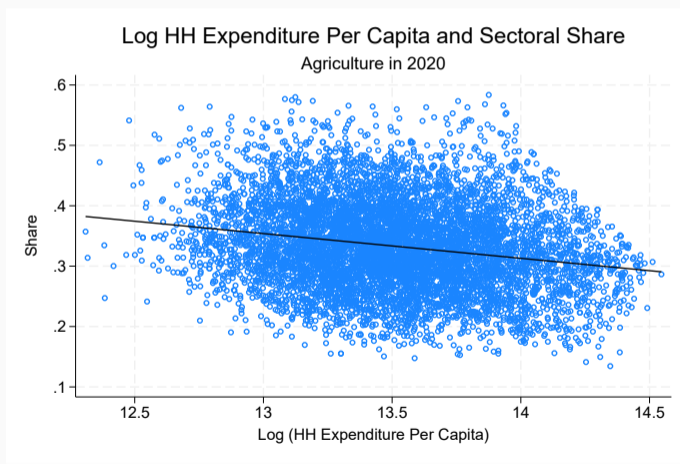
- Expenditure share is computed by

$$\frac{E_i}{\sum_i E_n^i}$$

- Trim above 90/95%tile and below 10/5%tile of household expenditure
- Trim above 90/95%tile and below 10/5%tile of sectoral expenditure

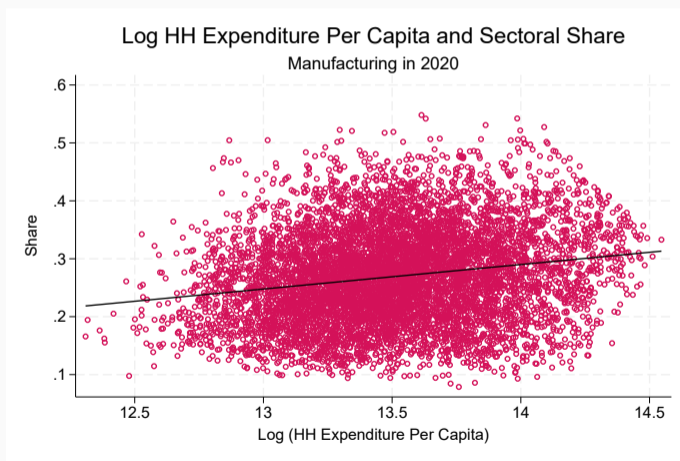
Non-Homotheticity in Kakei Data: Agriculture in 2020

Trim 10-90, $\ln(\text{Household Income Per Member})$



Non-Homotheticity in Kakei Data: Manufacturing in 2020

Trim 10-90, $\ln(\text{Household Income Per Member})$



Non-Homotheticity in Kakei Data: Service in 2020

Trim 10-90, $\ln(\text{Household Income Per Member})$

