

Restaurant Demand in the CE Diary Survey

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Introduction

1. Background and Literature
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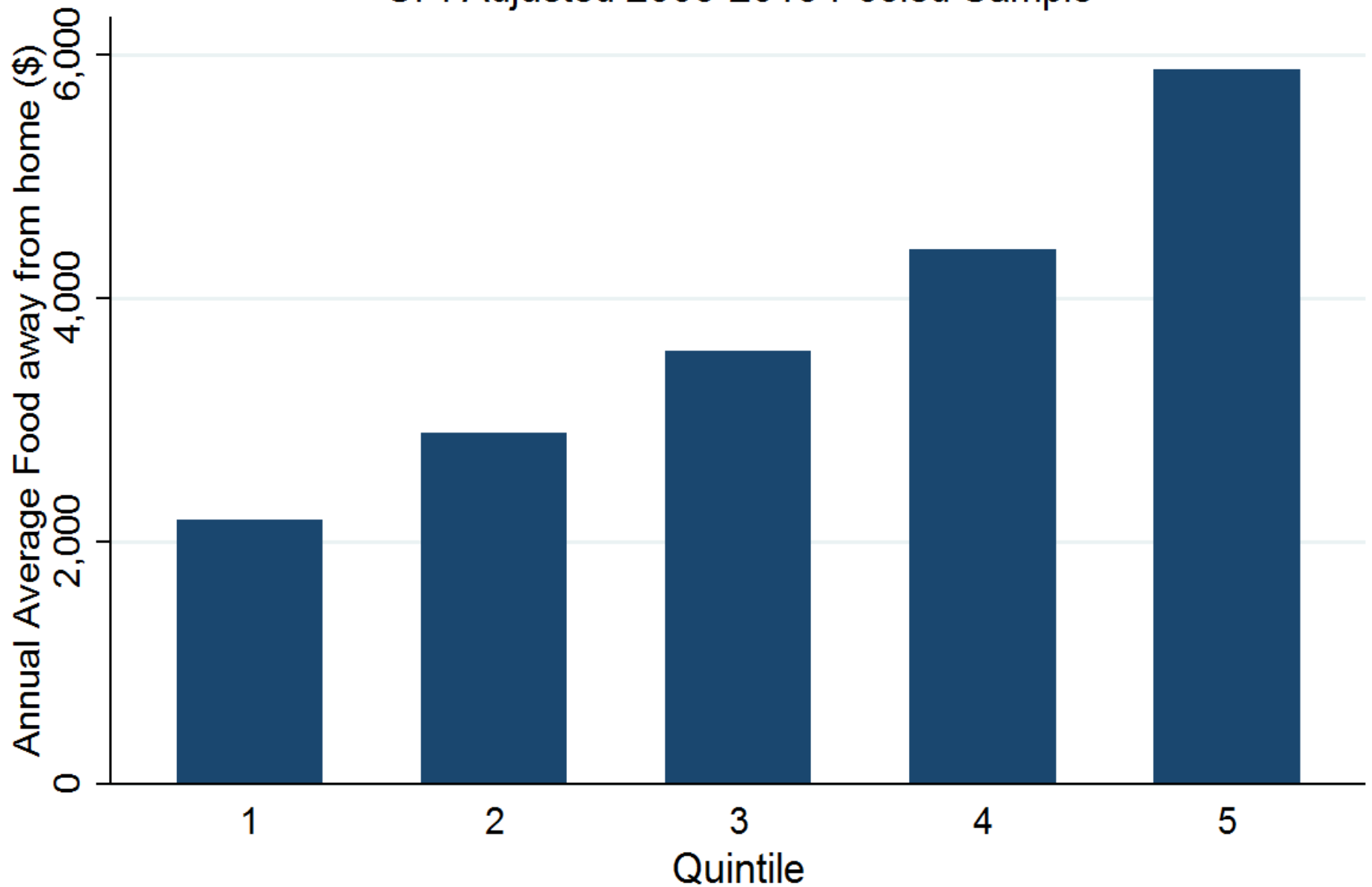


Background and Literature

- *“The Myth That Links Poor Families to Fast Food”*
 - The Atlantic, Sept 2015
- *“Is it Really Just the Poor Who Eat Fast Food? The Impact of Income and Wealth on U.S. Consumption”*
 - Zagorsky (2014) Ohio State University
- *“National Health and Nutrition Examination Survey”*
 - Centers for Disease Control and Prevention

Expenditures at Restaurants by Quintile

CPI Adjusted 2005-2015 Pooled Sample



Measuring Restaurant Dining

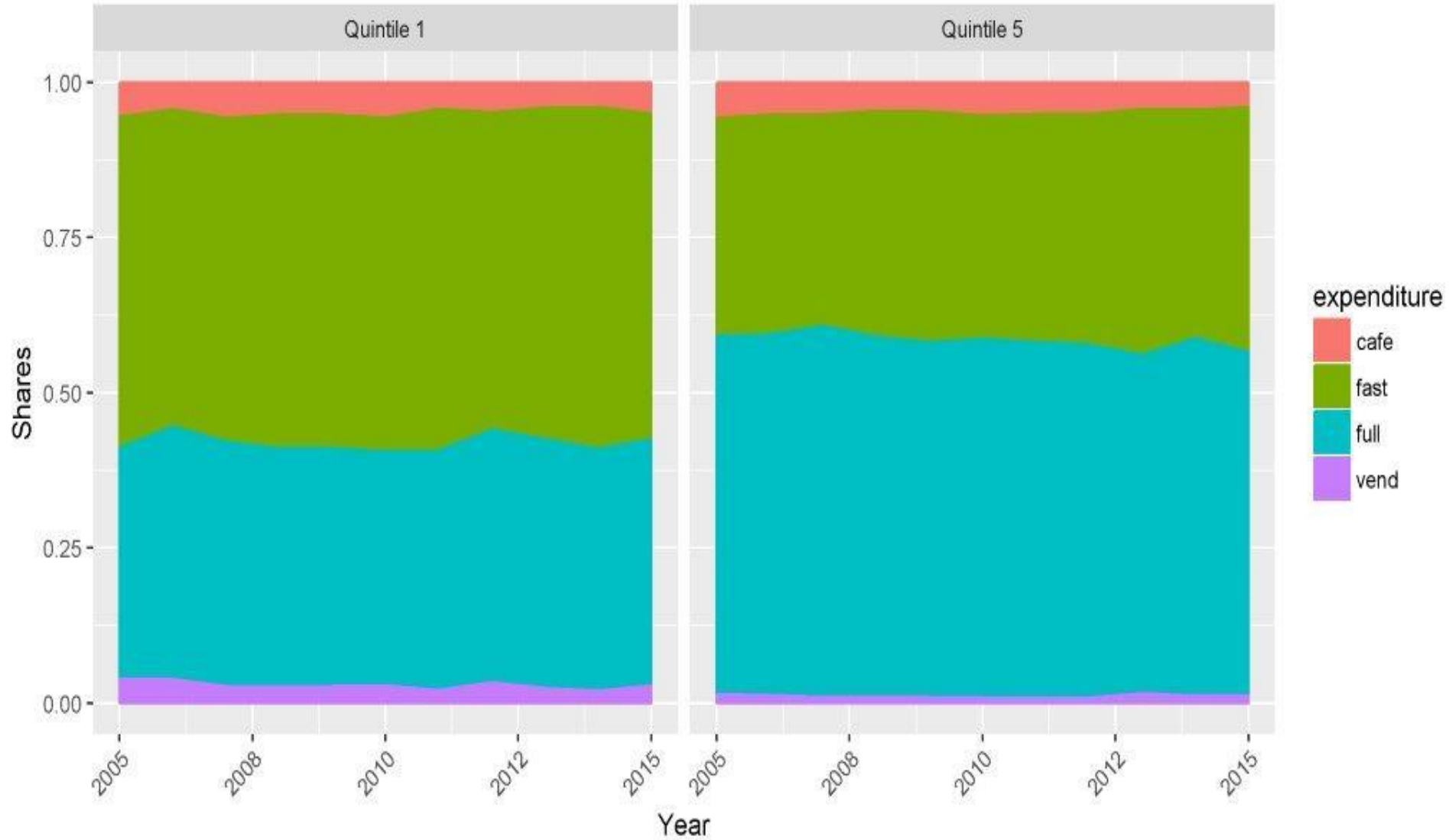
- Consumer Expenditure Diary Survey
 - ▶ Full Service
 - ▶ Fast Food
 - ▶ Vending Machines
 - ▶ Cafeterias
- Full Service and Fast Food account for the vast majority of restaurant expenditures.



Measuring Restaurant Dining

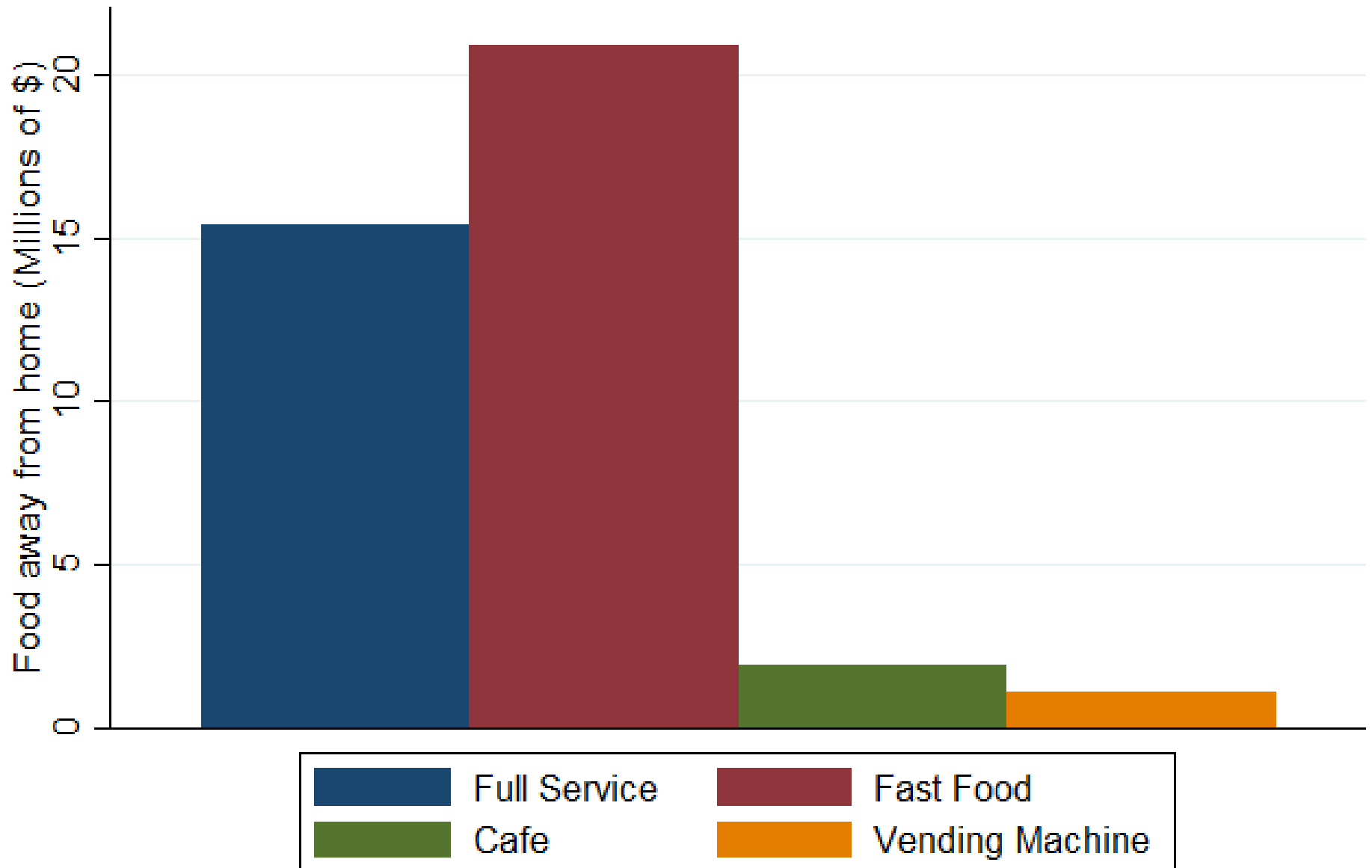
- Data Limitations
 - ▶ No quality measure in CE
 - ▶ Measures are broadly defined
 - ▶ Quantities are not captured
- Quality (signaled by higher prices) can help explain expenditure trends by income quintile.
- Income data are for wealth levels allowing a more consistent expenditure pattern to be observed in households.

Shares of total expenditures on food away by income quintile



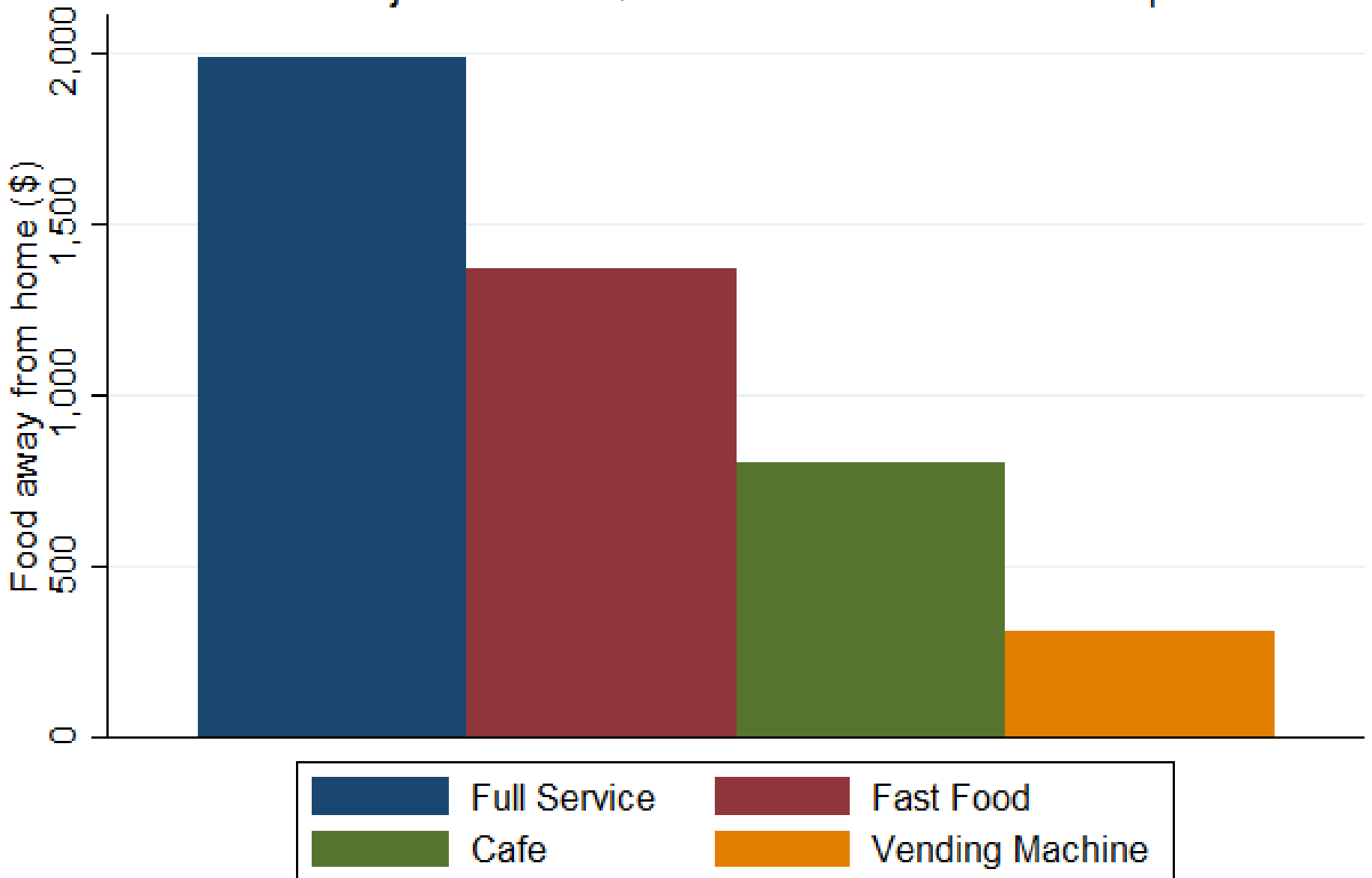
Aggregate Expenditures of Restaurant Types

CPI Adjusted First Quintile 2005-2015 Pooled Sample



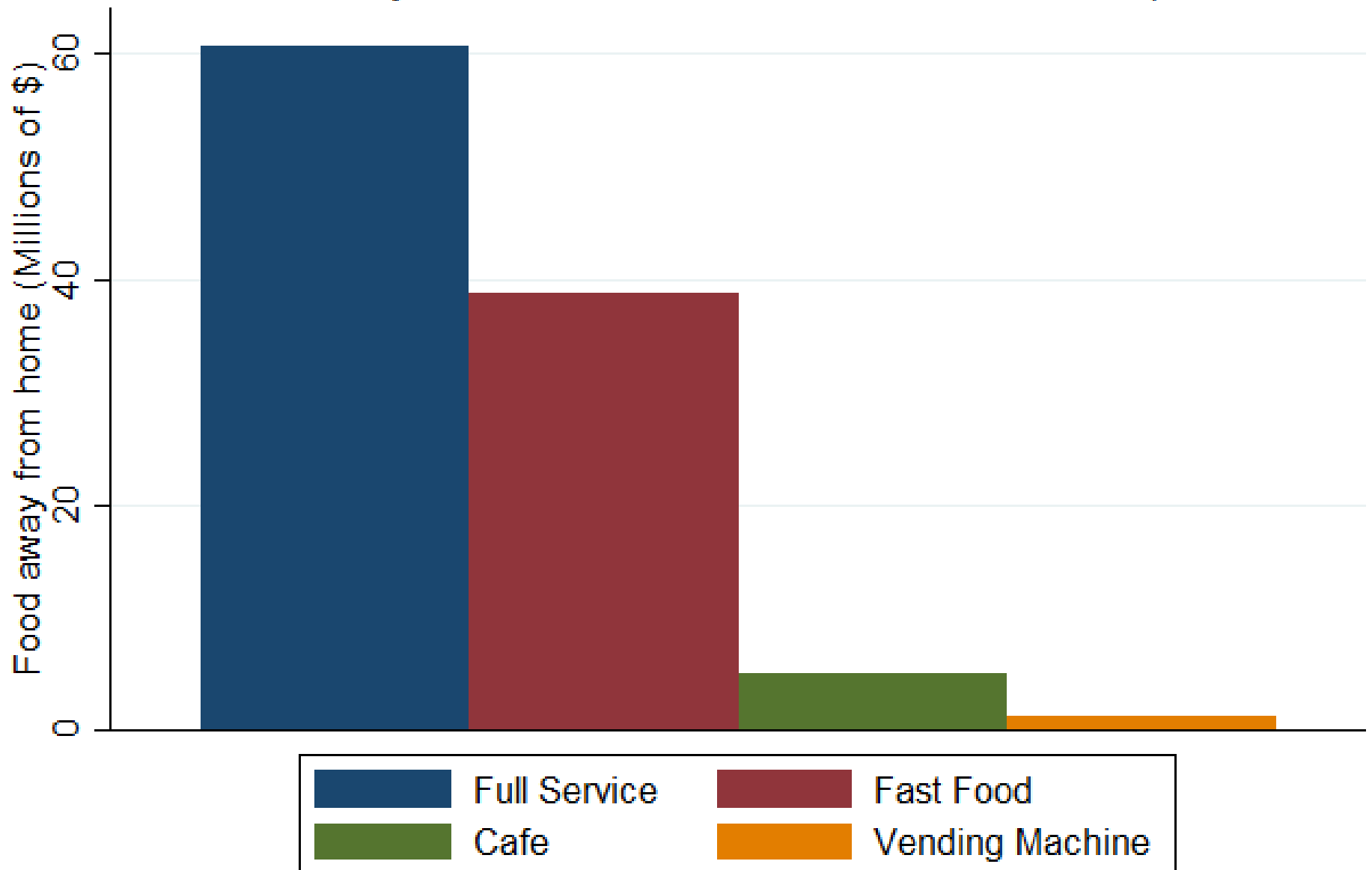
Mean Expenditures of Restaurant Types

CPI Adjusted First Quintile 2005-2015 Pooled Sample



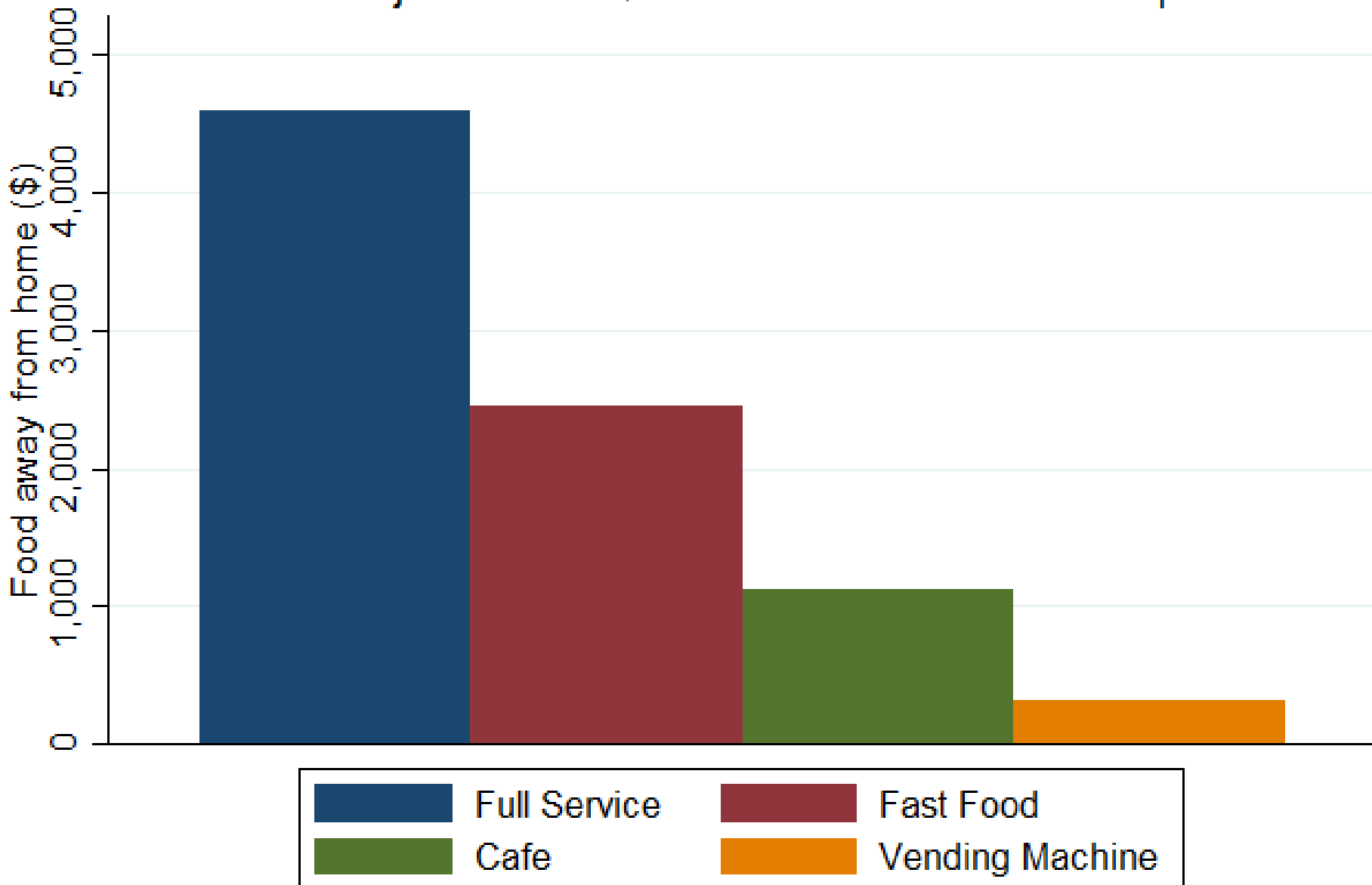
Aggregate Expenditures of Restaurant Types

CPI Adjusted Fifth Quintile 2005-2015 Pooled Sample



Mean Expenditures of Restaurant Types

CPI Adjusted Fifth Quintile 2005-2015 Pooled Sample



Demand as a Function of Income

- Income elasticity of demand for restaurants
 - ▶ %Δ in income compared to % Δ in consumption
 - Proportional increases (Unity)
 - Greater than proportional increases (Luxuries)
 - Less than proportional increases (Necessities)

$$X^{(\lambda)} = \beta_0 + \beta_1 I^{(\theta)} + \beta_{2-5} \sum_{i=1}^4 I^{(\theta)} * Q_i + \beta_n C_n$$
$$\xi = \frac{\partial X}{\partial I} \frac{I}{X} = \beta_1$$

if λ and θ are log transformations¹

X is expenditure, I is income, Q is quintile, and C is the vector of observable characteristics.

Results and Conclusions

Restaurant Type	Q1	Q2	Q3	Q4	Q5
Fast	0.08	0.21	0.41	0.15	0.01
Full	0.16	0.87	1.15	0.58	0.47

- Fast food always has a less than proportional increase. But has an consumption uptake across the first three quintiles and diminishes again.
- Full service has a “faster” consumption uptake in the first three quintiles and readjusts to a lower elasticity in the higher income quintiles.

Results and Conclusions

- CE data largely confirms the CDC report and most of the existing literature.
- Fast food is purchased across the board by all levels of income as a normal good.
- Proportion of fast food purchased as a percentage of total restaurant spending decreases across quintile.
- Proportion of full service purchased as a percentage of total restaurant spending increases across quintile.
- Demand has the largest increase for full service restaurants at middle income households.



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