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0.1 # Introduction

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 some papers include Acemoglu and Scott (1994) and also (Angrist and Krueger 1992; Carroll, Fuhrer, and Wilcox 1994). We also have referred to Priya and Sharma (2024)

0.3 # Tables

0.4 bibliography: references.bib

We collect data of household sentiments from Consumer Pyramid Household Survey (CPHS)¹. It is a large longitudinal data set, representative of Indian economy. CPHS collects data of household sentiments of India since April, 2016. To collect the sentiment data, a generic Indian household h is surveyed thrice in a year, e.g.; a household surveyed in April, 2016 is surveyed again in August, 2016 by CPHS for the collection of the sentiments data and so on. To assess the sentiments, CPHS asks questions about the present conditions as well as the future expectations of the household financial position, and the business condition. In the process, to assess the present conditions, CPHS asks the following 2 questions to the households - (I) Compared to a year ago, how is your family faring financially these days?; and (II) Do you think that this is generally a good or bad time to buy things like furniture, refrigerator, television, two-wheeler, and car? Along with this, CPHS asks the following 3 questions to assess the short-run and the long-run future expectations of the households - (III) How do you think that a year

¹The Consumer Pyramid Household Survey (CPHS) is conducted thrice every year since 2014 by the Centre for Monitoring Indian Economy (CMIE). Under CPHS, a large panel of sample Indian households are surveyed. This large longitudinal dataset is widely acknowledged as representative of the Indian economy. For details see; <https://consumerpyramidsdx.cmie.com/>

from now, financially, your family would be faring?; (IV) How would you describe the financial and business conditions in our country in the next 12 months?; and (V) What do you think would be the financial and business conditions in our country in the next 5 years? The answer to questions (I), and (III) are recorded as Better, Same and Worse, and accordingly a numerical value, 1, 0, -1 is assigned. On the other hand, answers to questions (II), (IV) and (V) are recorded as Good time, uncertain time and Bad time, and accordingly a numerical value, 1, 0 and -1 is assigned to the answer.

Along with sentiments, we also collect data of household's monthly expenditure on 8 major food groups, and fuel & lighting from CPHS from April 2016. The 8 major food groups include - (1) cereals; (2) oils and fats; (3) fruits; (4) pulses and products; and (5) milk and milk products; (6) meat, fish and egg; (7) vegetables and spices; and (8) sweets and snacks. Along with the above mentioned 8 food groups, we also collect data on household expenditure share for food & fuel. We find that the 8 food groups and the fuel and lightning contribute almost 92% of the expenditure for the Indian households. Table 1 reports the descriptive statistics of the data collected from CPHS². Using this data, and by using the methodology described below, we calculate two types of expenditure minimizing consumption bundles for the Indian households – (i) food bundle: consisting of the 8 food groups mentioned above; and (ii) food & fuel bundle: consisting of the fuel & lighting along with the 8 food groups mentioned above.

²The lower panel of Table 1 shows the impact of Covid-19 on household sentiments. The significant rise in the proportion of pessimistic households, and the corresponding decline in the proportion of optimistic households as depicted in the lower panel of Table 1 shows the negative impact of the Covid-19 on the psyche of Indian households. By using the difference of the optimistic households and the pessimistic households, we calculate the balance statistics to give a graphical representation of the pessimistic impact of Covid-19 on the psyche of Indian households. For details, see ?@fig-ics and the discussion in ?@sec-4.

Table 1: Descriptive Statistics

(a): Demographic Variables

Variable	Mean/Proportion
Income	19,834.12
Age	46.34
Education	
Less than 5	27.5
5-10	56.4
10-12	8.7
13-15	7.0
15+	0.4
Gender	
Male	88
Female	12
Marital Status	
Married	85
Unmarried	15
Geographic Location	
Rural	25
Urban	75
Occupation	
Agriculture and Allied	15.4
Manufacturing, Industry	34.1
and Auto	
Services, Media, Health	50.3
Others	0.2

(b): Sentiment Variables

Variable	Response	Full Sample		Pre-Covid Periods		Covid Periods	
		N	%	N	%	N	%
QFP	Bad	12,610	21.4	5,097	12.9	7,513	38.8
	Same	34,245	58.2	24,010	60.8	10,235	52.9
	Good	12,016	20.4	10,407	26.3	1,609	8.3
QBC	Bad	13,671	23.2	5,544	14.0	8,127	42.0
	Same	30,628	52.0	20,894	52.9	9,734	50.3
	Good	14,572	24.8	13,076	33.1	1,496	7.7
Total N		58,871		39,514		19,357	

Along with this, we also collect data on the price index of the aforementioned eight food groups, as well as fuel and lighting, from MoSPI³. MoSPI directly reports the price index for the first five food groups—(1) to (5) listed above. However, it separately provides the price index for the following food items:(i) Meat and fish (ii) Egg (iii) Vegetables (iv) Spices (v) Sweets (vi) Snacks. Using the price indices of these food items and their corresponding weights, we calculate the monthly price index for the remaining three food groups:(6) Meat, fish, and eggs (7) Vegetables and spices (8) Sweets and snacks

0.5 # Model

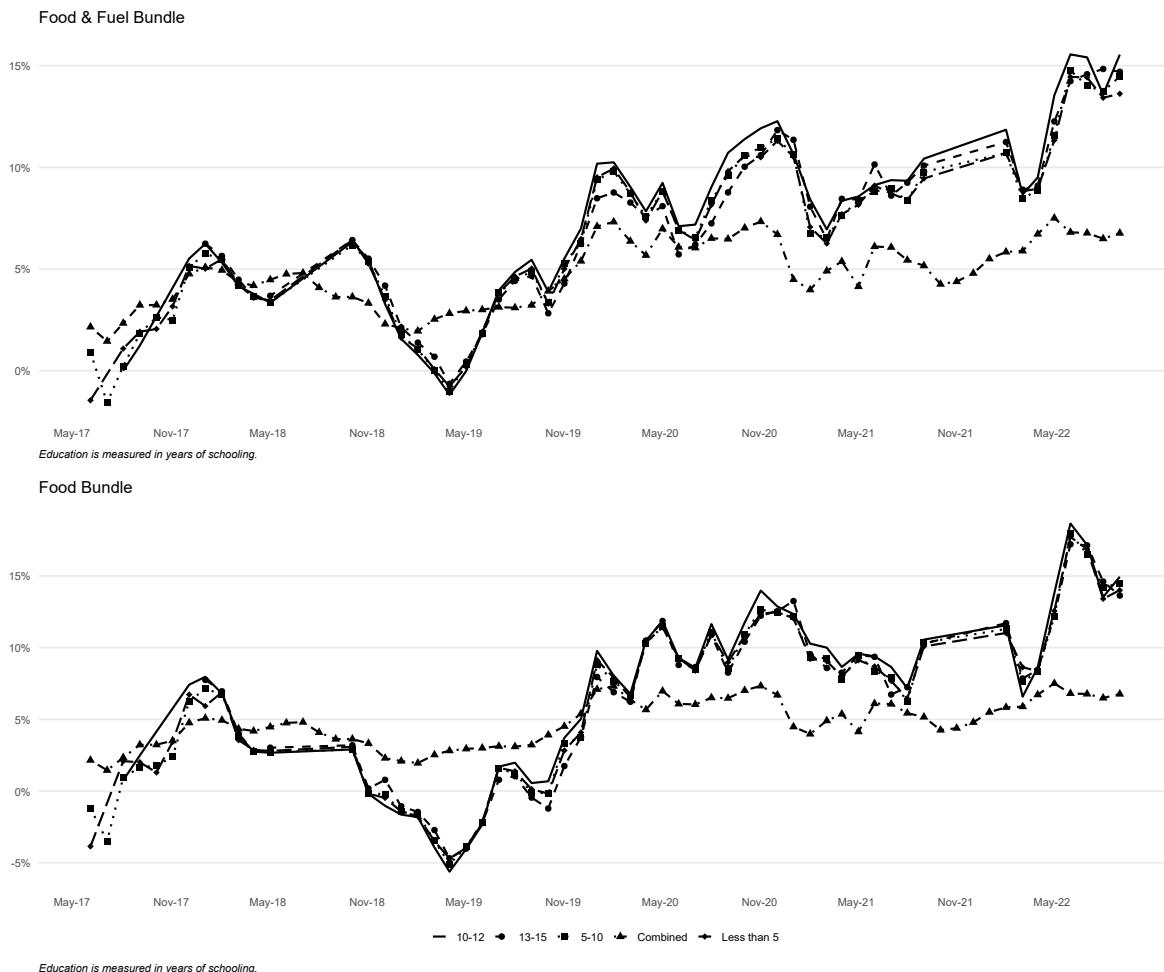
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Suppose, a generic household h , belonging to the geographical location j calculates the minimum expenditure required to obtain a certain amount of consumption bundle by solving the following static problem in each period t ,

$$\begin{aligned} \text{minimize} \quad & e_{h,t}^j = \sum_{i=1}^n p_{i,t}^j c_{i,ht}^j; \quad h = 1, 2, \dots, H; \quad j = \text{rural, urban} \\ \text{subject to} \quad & c_{h,t}^j = \prod_{i=1}^n (c_{i,ht}^j)^{\alpha_{i,ht}^j}; \quad \sum_{i=1}^n \alpha_{i,ht}^j = 1; \quad 0 < \alpha_{i,ht}^j < 1 \end{aligned}$$

³See; mospo.gov.in for the data of price index.

1 Figures



we refer to `?@fig-mean_educ` for the cross-sectional heterogeneity of average aggregate inflation rate, and household specific inflation rate - households classified in terms of educational attainment of household head.

References

- Acemoglu, Daron, and Andrew Scott. 1994. “Consumer Confidence and Rational Expectations: Are Agents’ Beliefs Consistent with the Theory?” *The Economic Journal* 104 (422): 1–19. <http://www.jstor.org/stable/2234671>.
- Angrist, Joshua D., and Alan B. Krueger. 1992. “The Effect of Age at School Entry on Educational Attainment: An Application of Instrumental Variables with Moments

- from Two Samples.” *Journal of the American Statistical Association* 87 (418): 328–36. <https://doi.org/10.1080/01621459.1992.10475212>.
- Carroll, Christopher D., Jeffrey C. Fuhrer, and David W. Wilcox. 1994. “Does Consumer Sentiment Forecast Household Spending? If So, Why?” *The American Economic Review* 84 (5): 1397–1408. <http://www.jstor.org/stable/2117779>.
- Priya, Pragati, and Chandan Sharma. 2024. “On Transmission Channels of Energy Prices and Monetary Policy Shocks to Household Consumption: Evidence from India.” *Energy Economics* 136: 107723. <https://doi.org/https://doi.org/10.1016/j.eneco.2024.107723>.