

Practical Aspects of Expectations Surveys in an Emerging Economy: India's IESH Survey

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Data

Inflation Expectations Survey of Households (IESH): Concurrent with a number of emerging countries

- ❖ IESH is a quarterly survey started in 2005Q3, covering 4000 households from 12 cities.
 - 500 households each from Chennai, Jaipur, Kolkata, and Mumbai.
 - 250 households each from Ahmedabad, Bangalore, Bhopal, Delhi, Guwahati, Hyderabad, Lucknow, and Patna
- ❖ Starting from 2012Q4, four new cities are added with 250 households each, bringing the total sample size up to 5000.
 - Bhubaneswar, Kolhapur, Nagpur, and Thiruvananthapuram
- ❖ Since 2005, the survey went through several significant changes before it was stabilized in 2008Q3. We use the data from 2008Q4 to 2018Q3.

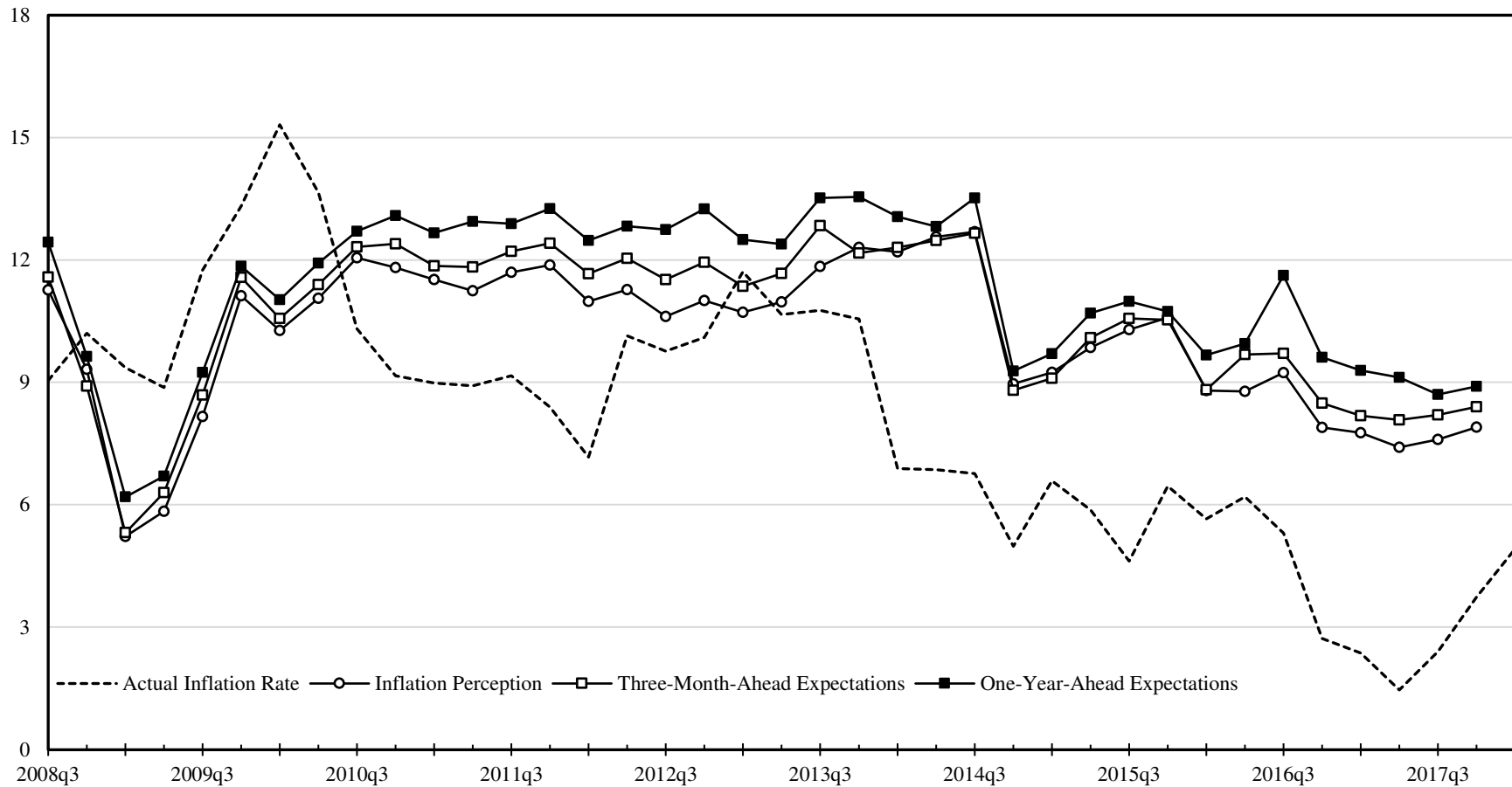
Data

Inflation Expectations Survey of Households (IESH)

- ❖ For each household, we have the city of residence. We also have the respondent's gender and age, as well as the employment category of the main earning member of the household:
 - Financial sector employees; other employees; self-employed; housewife; retired persons; daily workers; others.
- ❖ From each household, we have 3-month and 1-year ahead qualitative inflation expectations of general items, food products, non-food products, household durables, housing, and services.
- ❖ Qualitative expectations are given as one of the following: prices increase more than current rate, similar to current rate, less than current rate, no change in prices, decline in prices.

Examination of the Aggregates

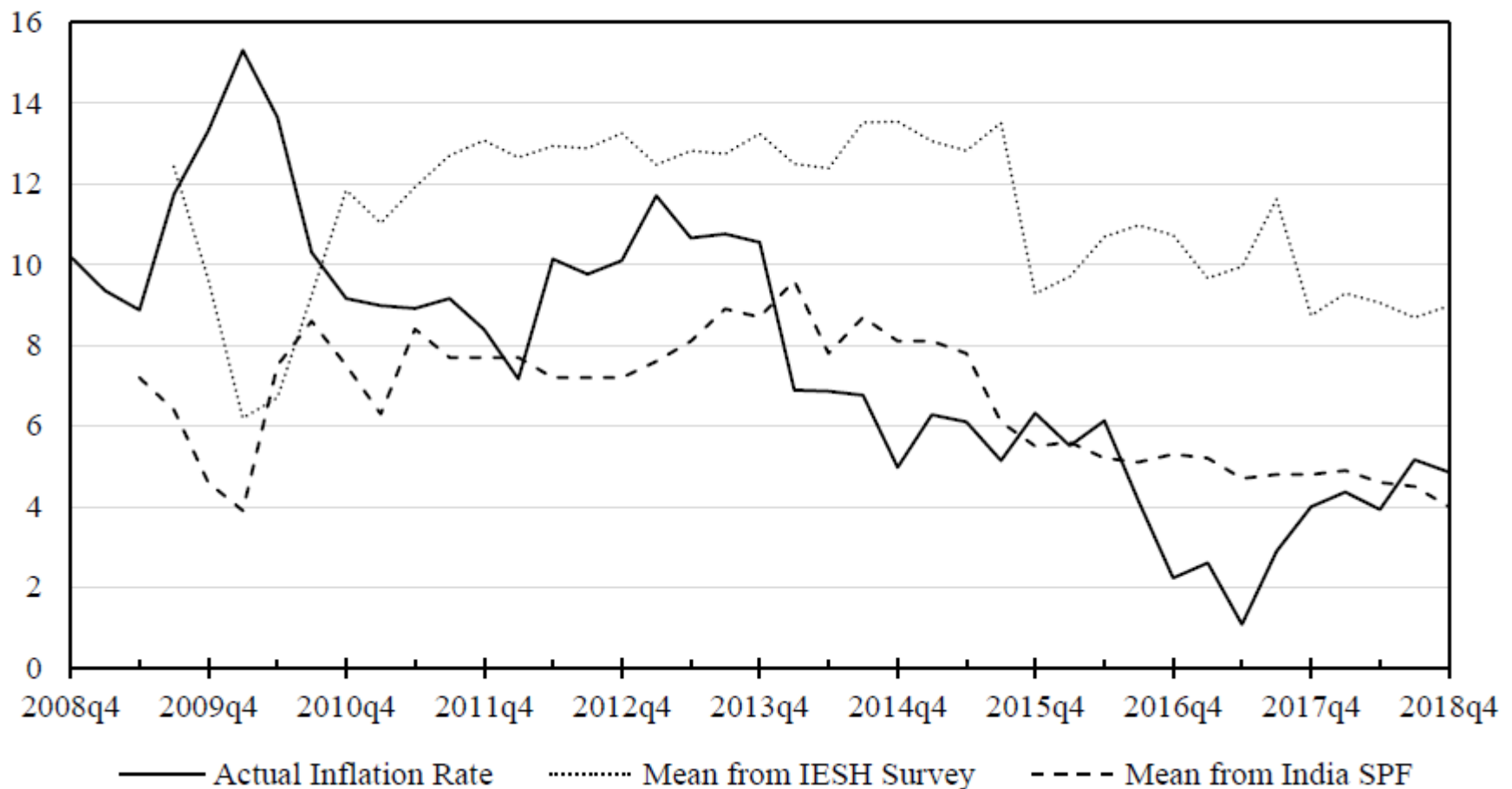
IESH Quantitative Inflation Expectations: Actual vs. Forecasts



Examination of the Aggregates: India

Comparing SPF Short-Run Forecasts vs. Household Expectations

India: Household Expectations, Professional Forecasts, and Actual Inflation Rate



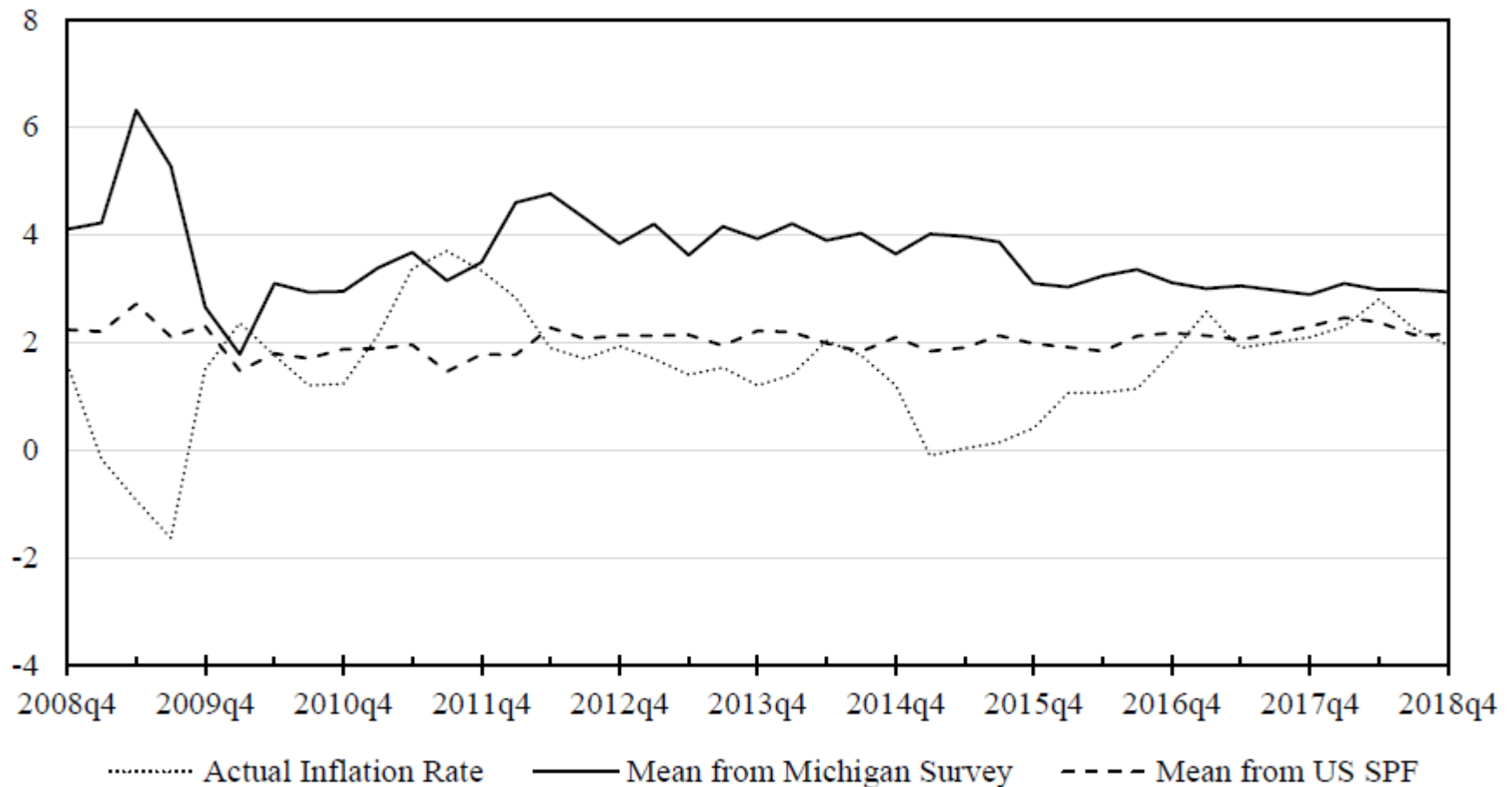
- “And yes, please junk inflation expectations survey before it causes more damage.
- Making repo policy on the basis of the inflationary expectations survey is exactly the same as making policy according to a random noise generator.
- Pure junk was never defined better than the results of the RBI expectations survey, the very same that the RBI uses for information on anchoring inflationary expectations.
-the junk RBI expectations survey (when will they stop?)”

- Surjit Bhalla (2014)

Examination of the Aggregates: United States

Comparing SPF Short-Run Forecasts vs. Household Expectations

US: Household Expectations, Professional Forecasts, and Actual Inflation Rate

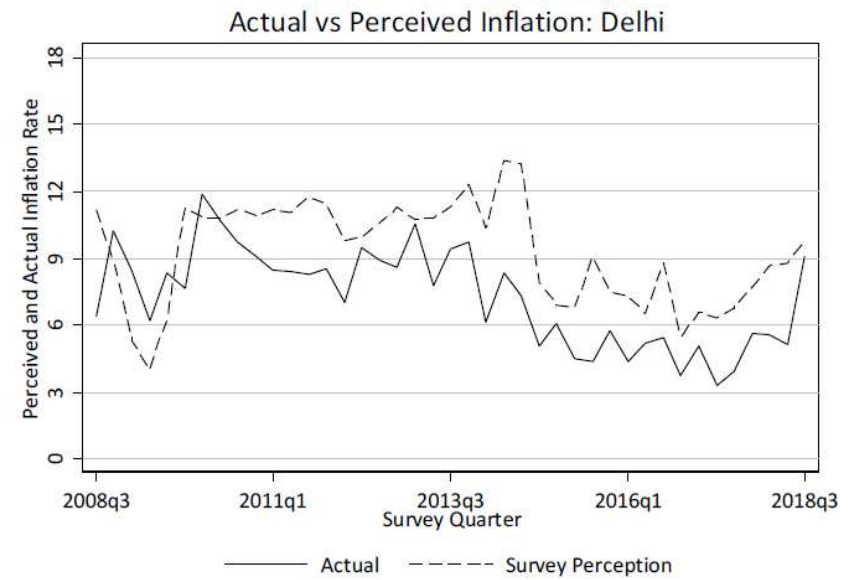
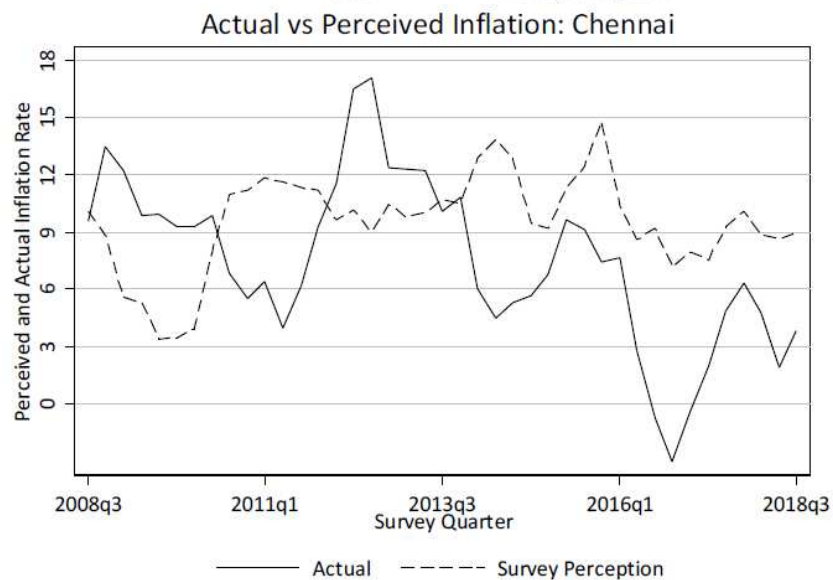
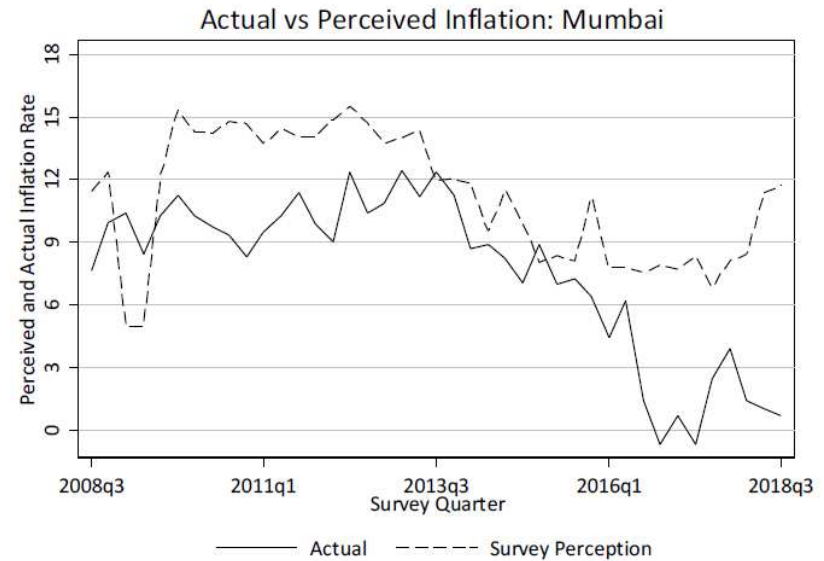
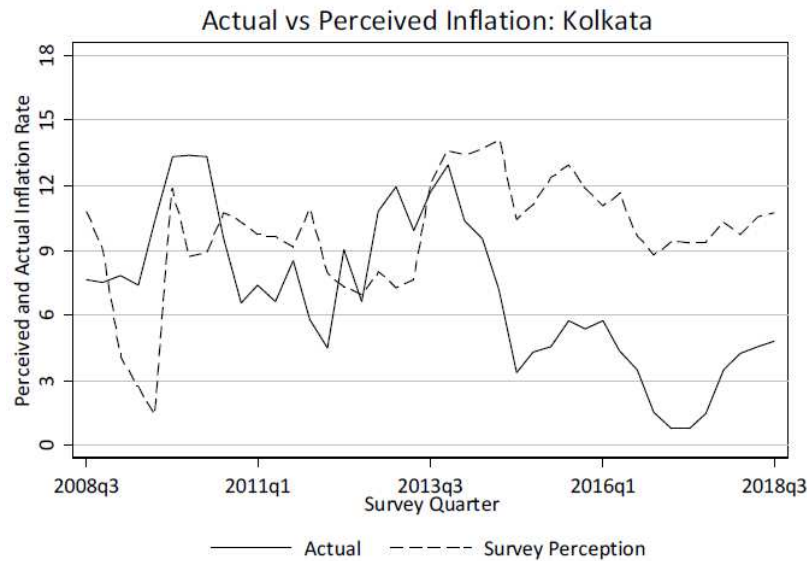


Adjustments in Michigan Surveys for Outliers

- ❖ Since 2015Q1, the actual numeric responses from these respondents are recorded. Over the period from 2015Q1 to 2017Q2, the mean and median of the reported expectations are 31% and 25% respectively, both much higher than 16%.
- ❖ This evidence is similar to the University of Michigan's consumer sentiment survey over 1978 - 2014. The Michigan survey records one-year-ahead quantitative inflation expectations up to a rate of inflation 50%. Out of around 8800 responses above 16%, 4700 are above 20%; 1900 are above 30%; and 1400 are above 40%. Keep in mind that on average, the inflation rate in the US is much lower than that in India.
- ❖ Thus, the extreme responses found in IESH is not unusual even in established household surveys.

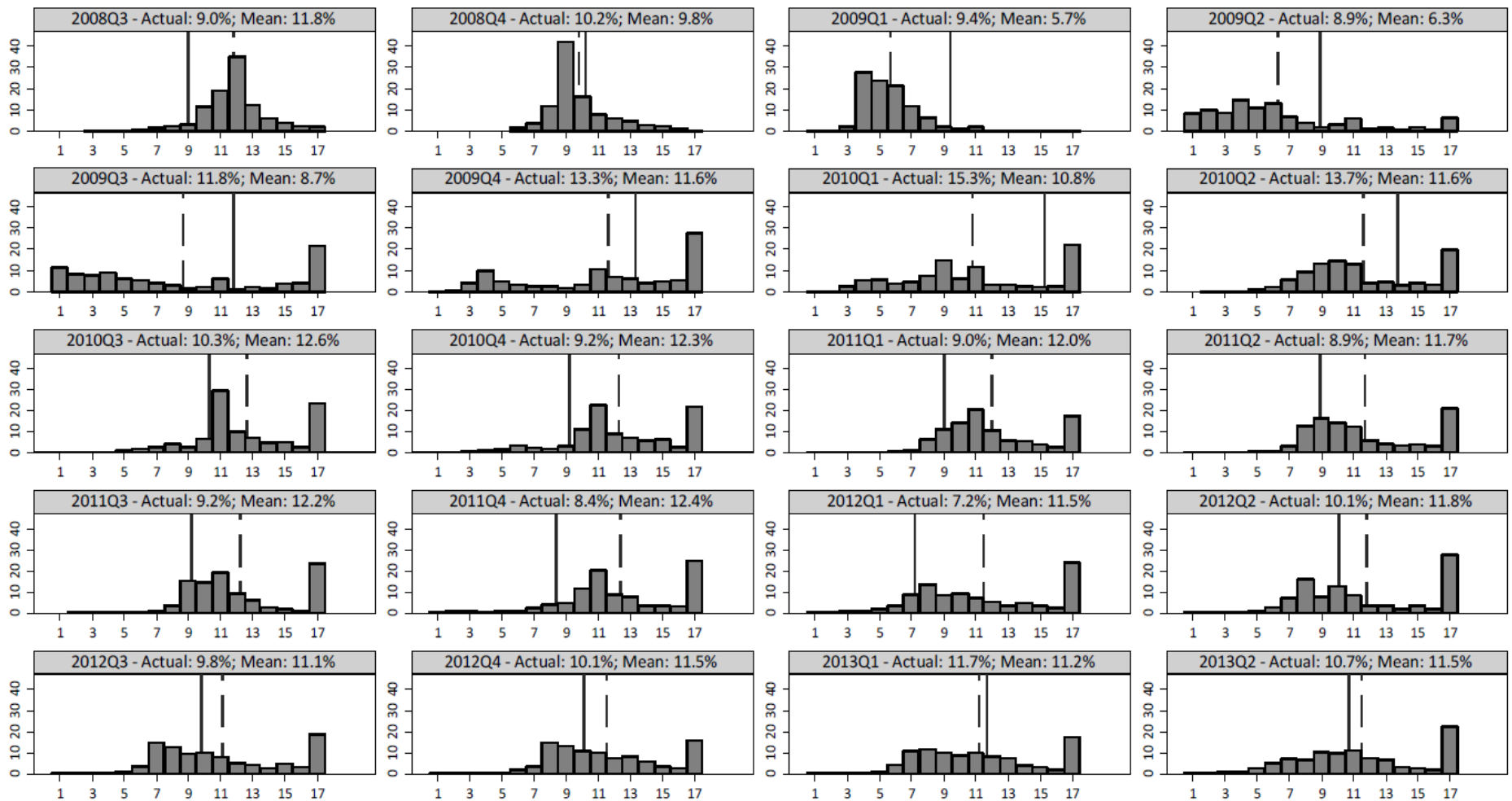
Examination of the Aggregates

Regional Variations in IESH Expectations



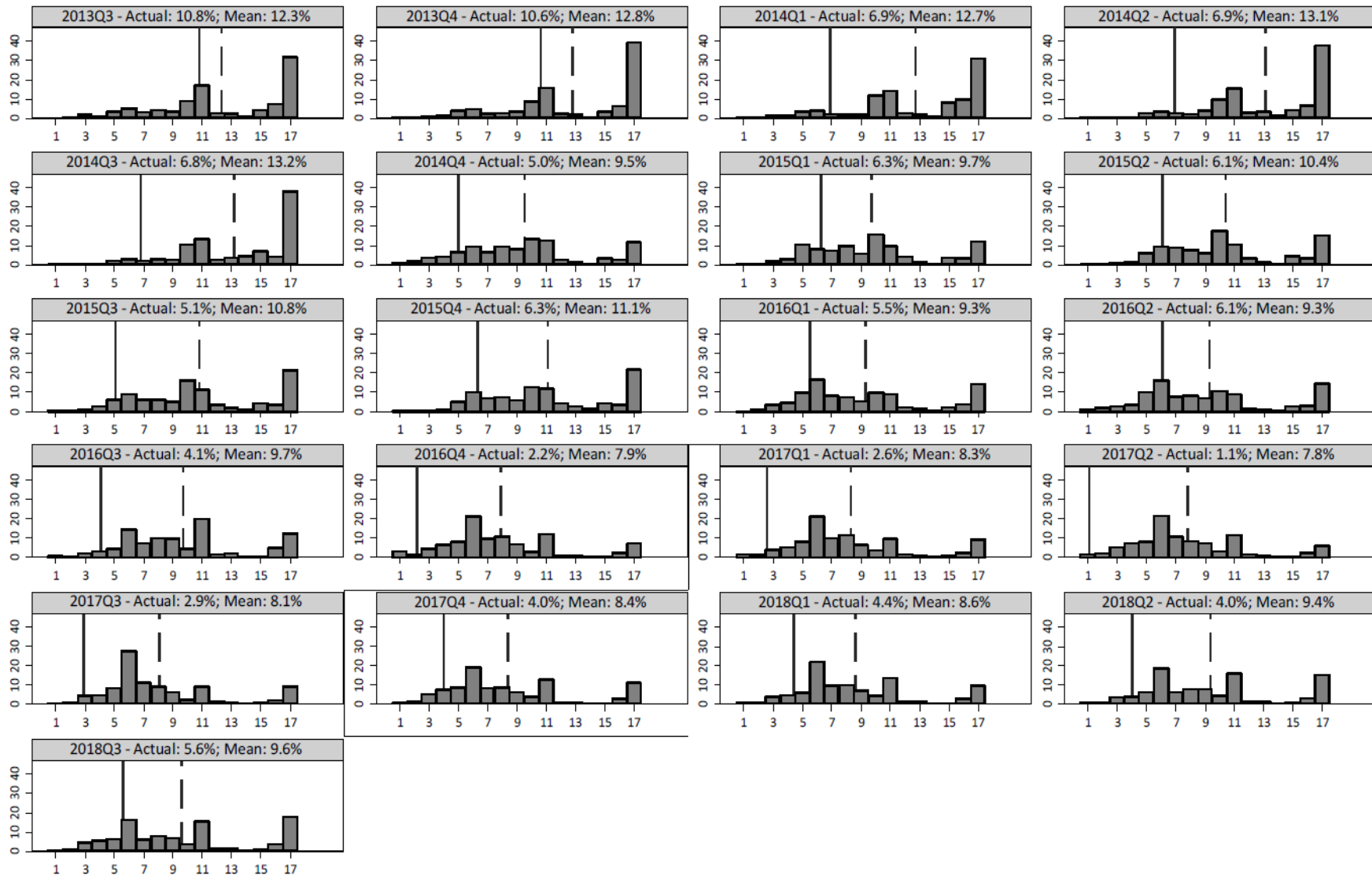
Examination of the Distributions: 2008Q3 to 2013Q2

IESH Perceptions: All Cities (solid: actual; dashed: mean perception)

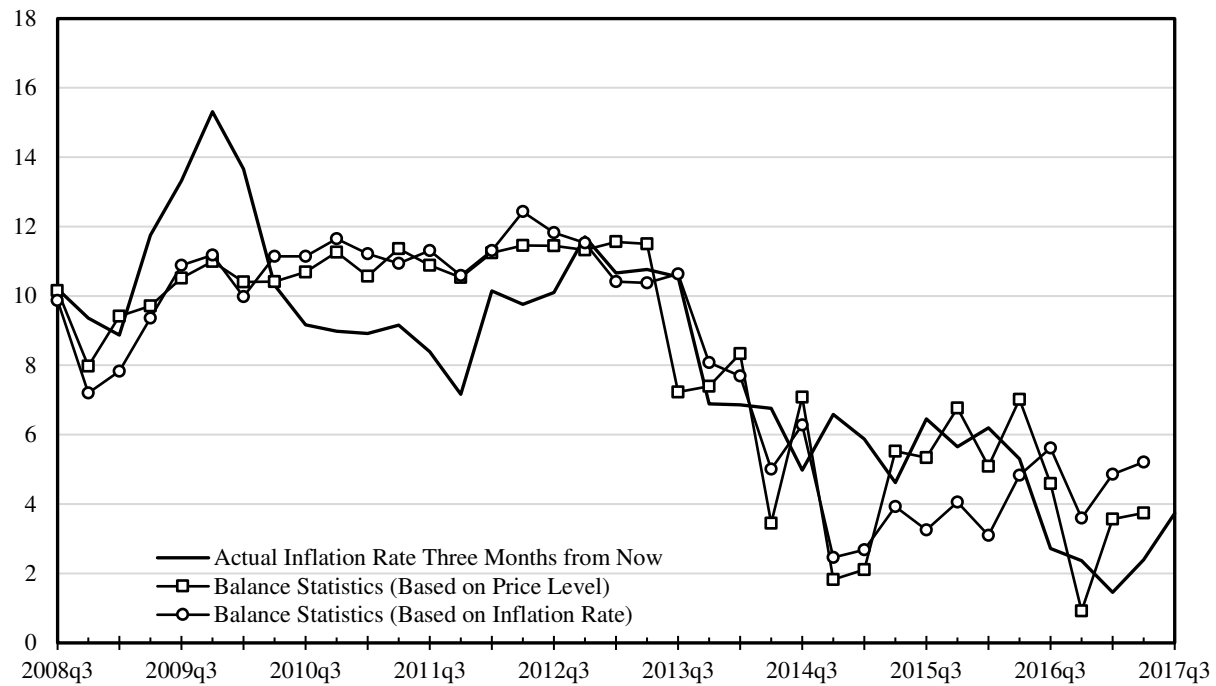


Examination of the Distributions: 2013Q3 to 2018Q1

IESH Perceptions: All Cities (solid: actual; dashed: mean perception)



Balance Statistics from Reported Qualitative Responses, Lahiri et al. (IJF 2019)



Explaining Errors in Perceptions/Expectations

- ❖ As an attempt to explain errors in perception, we regress the difference between actual inflation rate and perceived inflation rate (error in perception) on:
 - City dummies
 - Quarter dummies
 - Age group dummies
 - Gender dummy
 - Employment category dummies

Explaining Errors in Perceptions

Variable Group	Variable	Model 3	Model 4	Model 5	Model 6
Age Group	25 to 30 years	-0.025			-0.048
	30 to 35 years	-0.137 **			-0.186 ***
	35 to 40 years	-0.194 ***			-0.257 ***
	40 to 45 years	-0.218 ***			-0.309 ***
	45 to 50 years	-0.411 ***			-0.439 ***
	50 to 55 years	-0.463 ***			-0.566 ***
	55 to 60 years	-0.594 ***			-0.604 ***
	60 years and above	-0.760 ***			-0.775 ***
Gender	Female		-0.295 ***		0.032
Employment Category	Other Employees			-0.092	-0.195 ***
	Self-Employed			-0.240 ***	-0.258 ***
	Retired Persons			-0.609 ***	-0.061
	Daily Workers			-0.681 ***	-0.551 ***
	Other Category			0.303 ***	-0.106 *
	Homemaker			-2.313 ***	-0.497 ***
	Constant	-2.633 ***	-2.752 ***	-2.584 ***	-2.324 ***
	Observations	181772	181774	181772	181772
	Adjusted R Square	0.002	0.001	0.005	0.379

Explaining Errors in Perceptions and Expectations

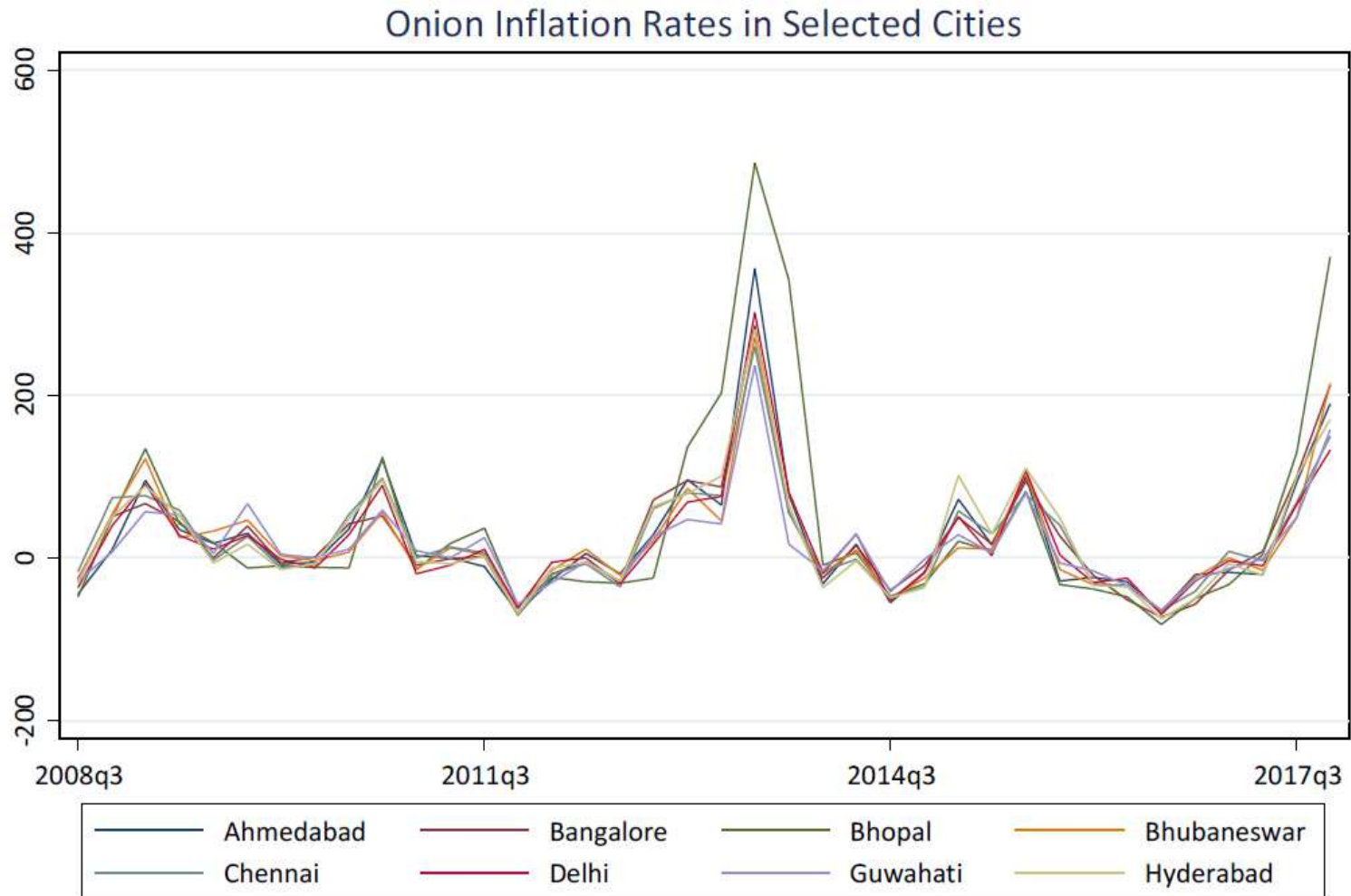
- ❖ So, who tend to give high responses?
 - Older persons, housewives, and daily workers
- ❖ What does this mean? Irrationality or true experience?
- ❖ One explanation is that these people spend a disproportionately large amount to satisfy basic need: food and energy items.
- ❖ So we proceed to examine the effect of the price of a selected set of frequently consumed items on household inflation perceptions and expectations.
- ❖ We consider the following commodities: rice, wheat atta, dal groundnut oil, goat meat, fish, milk, onion, sugar, and kerosene.

Inflation Rates of Frequently Consumed Goods

- ❖ The inflation rates of different commodities vary greatly within each city.
- ❖ At the same time, for each commodity, the inflation rates vary greatly over time and across the cities.
- ❖ The next set of plots shows the inflation rates of a few commodities over time, comparing across cities.
- ❖ Much of household expectations are psycho-social in a society with many subject to food insecurities .

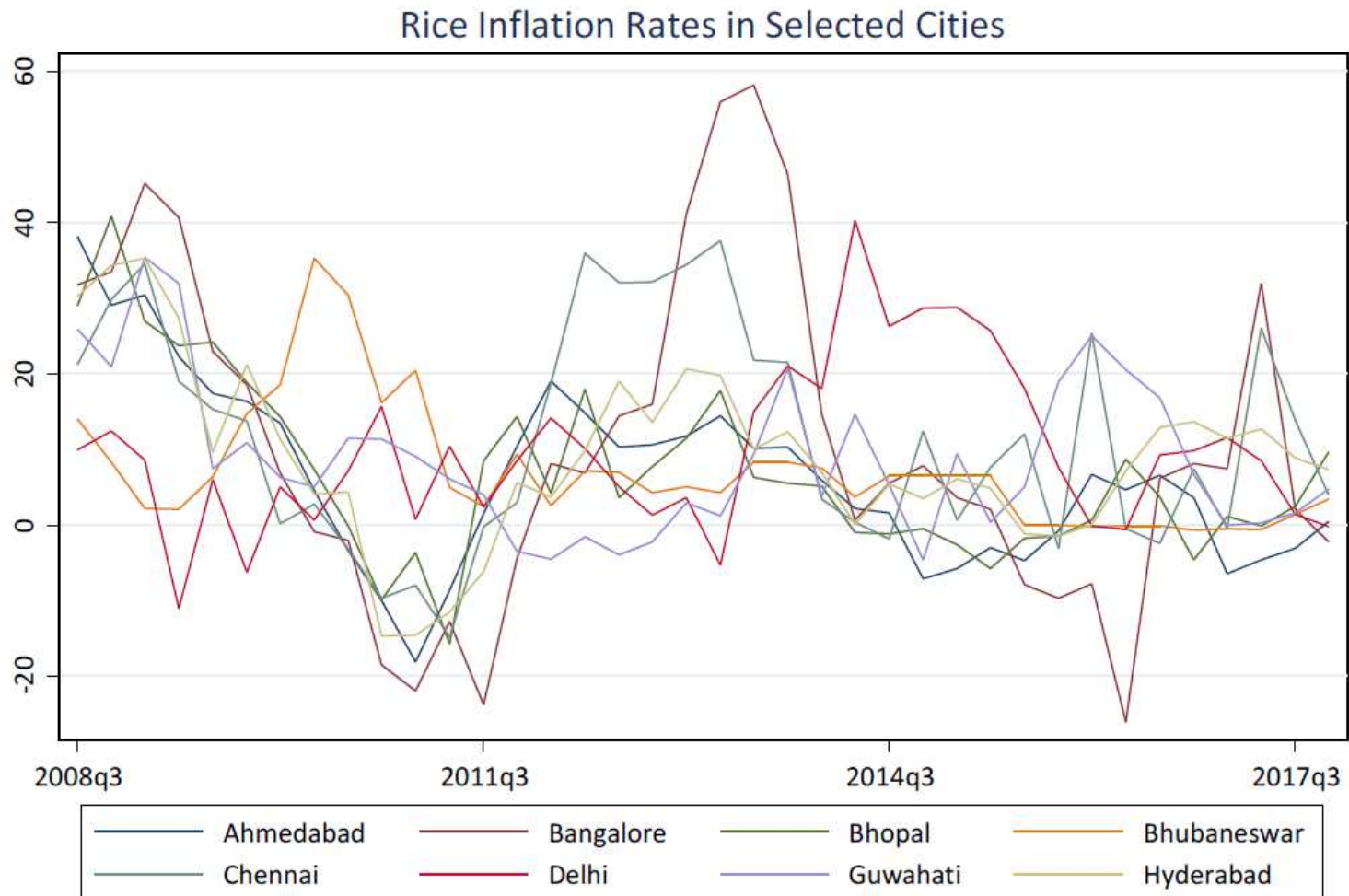
Effect of the Inflation Rates of Frequently Consumed Goods

Inflation rates of selected commodities in major cities



Effect of the Inflation Rates of Frequently Consumed Goods

Inflation rates of selected commodities in major cities



Effect of the Inflation Rates of Frequently Consumed Goods

- ❖ Households in different cities tend to consume different amounts of the same good.
- ❖ The inflation rates of the more frequently consumed good may have a more significant impact on household expectations than that of less-often consumed goods.
- ❖ As an example, we compare the inflation rates of rice and wheat in a few cities. Note the very different dynamics of the two inflation rates.

Effect of the Inflation Rates of Frequently Consumed Goods

- ❖ The following table shows the effect of the inflation rates of several commodities on household inflation perceptions.
- ❖ The dependent variables of all four models are the same – households' quantitative inflation perceptions.
- ❖ The independent variables in the baseline model, Model 1, include a constant and four lags of the actual inflation rate.
- ❖ Model 2 extends the baseline with dummy variables for the age group, employment category, and gender of the respondents.
- ❖ Model 3 also includes four lags of the actual inflation rates on transportation and communications, as well as vegetables and fruits.
- ❖ Model 4 adds two lags of the inflation rates on rice, wheat, dal, oil, goat meat, fish, milk, onion, sugar, and kerosene.

Block 2: Introduction

The objective of this survey is to get price and inflation expectations on goods and services consumed by your household. The questions do not relate to the prices of any goods produced by your household or cost of any inputs used for their production. This information is used by RBI for its Policy. Hence we will be thankful if you could please spare a few minutes of your valuable time for this.

1. Do you keep track of prices of items generally purchased in your household?

[1] Yes [2] No

1. Give examples of how much prices of any two major items have changed in the last 12 months.

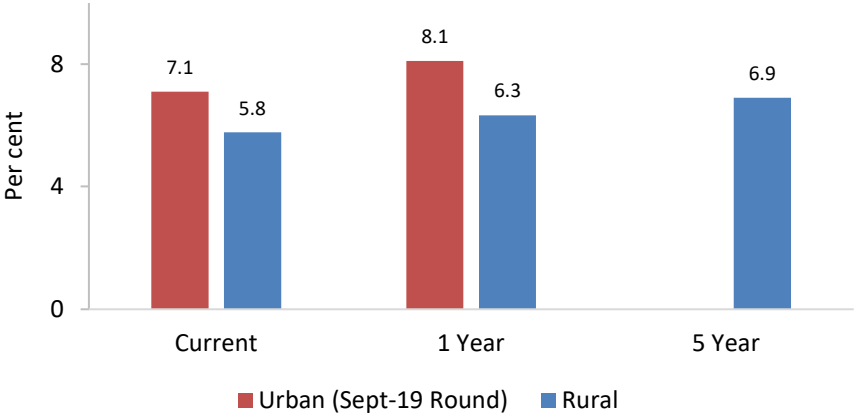
Item 1: _____ by _____ %, Item 2: _____ by _____ %.

1. Do you know that the Government brings out an index of retail prices every month?

[1] Yes [2] No

Ok, let me tell you that as per official data, prices in general increased, on an average, by X% every year in the last 5 years.

Median Inflation Perception and Expectations - Rural vs Urban



Effect of the Inflation Rates of Frequently Consumed Goods

City	Adjusted R-squared			
	Model 1	Model 2	Model 3	Model 4
All Cities	0.154	0.164	0.244	0.397
Ahmedabad	0.018	0.015	0.060	0.234
Bangalore	0.243	0.247	0.394	0.667
Bhopal	0.045	0.039	0.035	0.158
Chennai	0.018	0.022	0.105	0.303
Delhi	0.185	0.185	0.228	0.297
Guwahati	0.037	0.048	0.089	0.286
Hyderabad	0.217	0.212	0.267	0.331
Jaipur	0.103	0.101	0.176	0.399
Kolkata	0.019	0.020	0.110	0.320
Lucknow	0.114	0.109	0.299	0.406
Mumbai	0.271	0.273	0.331	0.462
Patna	0.165	0.177	0.351	0.503

Concluding Remarks

- ❖ There is a significant amount of variations across regions in household perceptions and expectations, partly due to varying consumption patterns across regions.
- ❖ Older persons and daily workers experience significantly higher inflation rates.
- ❖ Certain cities are found to be excessively sensitive to food and energy price inflation – indicating a potential mismatch between the consumption bundle used to calculate the official statistic and what people actually purchase and pay for.
- ❖ Expectations contain substantial physio-social factors due to food/fuel insecurity of many as reflected in the excess sensitivity of commonly and more frequently purchased consumption good.
- ❖ Extending the survey to rural and small cities seem to be helping.