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Gauging Inflation Expectations with Surveys, Part 2: The Question You Ask Matters—A Lot

In our previous *macroblog* post, we discussed the inflation expectations of firms and observed that—while on average these expectations look similar to that of professional forecasters—they reveal considerably more variation of opinion. Further, the inflation expectations of firms look very different from what we see in the household survey of inflation expectations.

The usual focal point when trying to explain measurement differences among surveys of inflation expectations is the respondent, or *who* is taking the survey. In the previous *macroblog* post, we noted that some researchers have indicated that not all households are equally informed about inflation trends and that their expectations are somehow biased by this ignorance. For example, Christopher Carroll over at Johns Hopkins suggests that households update their inflation expectations through the news, and some may only infrequently read the press. Another example comes from a group of researchers at the New York Fed and Carnegie Mellon They've suggested that less financially literate households tend to persistently have the highest inflation expectations.

But what these and related research assume is that *whom you ask* the question of is of primary significance. Could it be that it's the *question being asked* that accounts for such disagreement among the surveys?

We know, for example, that professional forecasters are asked to predict a particular inflation statistic, while households are simply asked about the behavior of "prices in general" and prices "on the average." To an economist, these amount to pretty much the same thing. But are they the same thing in the minds of non-economists?

You may be surprised, but the answer is no (as a recent Atlanta Fed working paper discussed). When we asked our panel of firms to predict by how much "prices will change overall in the economy"—essentially the same question the University of Michigan asks households—business leaders make the same prediction we see in the survey of households: Their predictions seem high relative to the trend in the inflation data, and the range of opinion among businesses on where prices "overall in the economy" are headed is really, really wide (see the table).

Own Unit Cost Expectations versus Prices in General

(BIE panel and University of Michigan *Survey of Consumers,* September 2014)

	Mean	Heterogeneity	Min	Max	Number of responses
One-year-ahead inflation expectations of firms:					
Unit cost expectations	2.1	1.4	-1.5	6.0	182
Prices "overall in the economy"	4.4	18.2	-10.0	25.0	182
One-year-ahead inflation expectations of households:					
Prices "in general"/"on the average"	3.7	12.1	-10.0	20.0	454

Source: Household forecasts are taken from the UM *Survey of Consumers*, September 2014. Specifically, the University of Michigan asks a two-part question, first asking about "prices in general" followed by a question about prices "on the average." Firm inflation expectations are from the Atlanta Fed's *Business Inflation Expectations Survey*, September 2014. To make the comparison as close as possible, we follow the same truncation procedure that UM uses for outliers (see Curtin 1996).

But what if we ask businesses to predict a particular inflation statistic, as the Philly Fed asks professional forecasters to do? We did that, too. And you know what? Not only did a majority of our panelists (about two-thirds) say they were "familiar" with the inflation statistic, but their predictions looked remarkably similar to that of professional forecasters (see the table).

Own Unit Cost Expectations versus Core CPI Expectations

(BIE panel and Survey of Professional Forecasters, October 2014)

	Inflation expectation	Heterogeneity of inflation expectation			Number of responses
	mean	min	max	variance	
1-year ahead inflation expectations of firms:					
Unit cost expectations	2.0	-1.6	6.0	1.8	210
Core CPI (full sample)	1.9	-1.0	5.0	0.8	199
Core CPI (those familiar with core CPI)	2.0	-0.3	3.9	0.6	131
1-year ahead inflation expectations of professional forecasters:					
Core CPI (Q4/Q4 growth, August 2014)	2.0	1.2	2.6	0.1	40

Source: Data for professional forecaster inflation expectations are from the Philadelphia Fed's *Survey of Professional Forecasters*, Core CPI inflation over the year ahead. Firm inflation expectations are from the Atlanta Fed's *Business Inflation Expectations Survey*, October 2014. The BIE question was, "Please indicate what probabilities you would attach to the various possible percentage changes to the CORE (excluding food and energy) CONSUMER PRICE INDEX over the next 12 months. (Values should sum to 100%.)" A given firm's expected value of their probabilistic forecast was calculated by taking the weighted average of the share of probability mass in each bin multiplied by its midpoint. -1 percent and 5 percent were used as midpoints for the left-censored and right-censored bins respectively. Familiarity with the term "Core CPI" was judged on a 5 point Likert scale. Responses 4 and 5 were judged "familiar."

So when we ask firms to answer the same question asked of professional forecasters, we got back something that was very comparable to responses given by professional forecasters. But when you ask firms the same question typically asked of households, we got back responses that looked very much like what households report.

Moreover, we dug through the office file cabinets, remembering a related table adapted from a joint project between the Cleveland Fed and the Ohio State University that was highlighted in a 2001 Cleveland Fed *Economic Commentary*. In August 2001, a group of Ohio households were asked to provide their perception of how much the Consumer Price Index (CPI) had increased over the last 12 months, and we compared it with how much they thought "prices" had risen over the past 12 months.

The households reported that the CPI had risen 3 percent—nearly identical to what the CPI actually rose over the period (2.7 percent). However, in responding to the vaguely worded notion of "prices," the average response was nearly 7 percent (see the table). So again, it seems that the loosely defined concept of "prices" is eliciting a response that looks nothing like what economists would call inflation.

Household Familiarity with the CPI

(adapted from Bryan and Venkatu (2001))

"Have you heard of the Consumer Price Index before?"

	Yes	No
Number of respondents	324	166
Percent	66.1	33.9

"By about what percent do you think the ***Consumer Price Index*** went up (down), on average, during the last 12 months?"[a]

Mean	Number of respondents
2.96	236

"By about what percent do you think ***prices*** went up (down), on average, during the last 12 months?"

Mean	Number of respondents
6.74	214

a. Sample restricted to respondents who reported having heard of the CPI

Source: Federal Reserve Bank of Cleveland and the Ohio State University, *FRBC/OSU Inflation Psychology Survey*, August 2001.

So it turns out that the question you ask matters—a lot—more so, evidently, than to whom you ask the question. What's the right question to ask? We think it's the question most relevant to the decisions facing the person you are asking. In the case of firms (and others, we suspect), what's most relevant are the costs they think they are likely to face in the coming year. What is unlikely to be top-of-mind for business decision makers is the future behavior of an official inflation statistic or their thoughts on some ambiguous concept of general prices.

In the next *macroblog* post, we'll dig even deeper into the data.

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