to imply that expected inflation is irrelevant; that is way too heretical and almost certainly wrong. But maybe, for example, *lagged* inflation is as important—in a Phillips curve, say—as *expected* inflation.[1] At least lagged inflation is, for one period, anchored.

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COMMENT BY

LARS E. O. SVENSSON This paper by Saten Kumar, Hassan Afrouzi, Olivier Coibion, and Yuriy Gorodnichenko discusses the results of a recent (2013–15) survey about inflation expectations and knowledge of monetary policy among managers of New Zealand firms. The main results are that the average inflation forecasts are higher than both actual inflation and the inflation target for both short and long horizons; that the average perception of recent inflation is higher than actual inflation; that there are large disagreements about forecasts and recent inflation; that the firms express more uncertainty than professional forecasters; that the firms have little knowledge about monetary policy; and that along these metrics the firms are more similar to households than to professional forecasters. The authors summarize their main conclusion in the title of the paper, "Inflation Targeting Does Not Anchor Inflation Expectations," and in the statement "Our results are not favorable to policymakers."

My first comment is, "Compared with what?" In order to draw these conclusions from the authors' survey, one would like to have not an essentially one-time survey but a time series of survey results, ideally over a sample period including years both before and after inflation

1. For evidence, see Roberts (2005).

targeting was introduced in New Zealand. One would also like to compare results with other related surveys in New Zealand and with similar surveys in other economies that use inflation targeting. Only then could one more firmly judge whether inflation targeting stabilizes and anchors inflation expectations.

Second, I miss some policy conclusions. Suppose the results are true. Should the authorities, in particular the Reserve Bank of New Zealand (RBNZ), do something about them, and if so, what?

Regarding my first comment, as the authors note, in New Zealand there is another related survey, namely the RBNZ Survey of Expectations, which surveys a sample of economists, businesses, and industry leaders.[1] It is quarterly and starts in 1987. The authors make light of this survey, stating that its sample is very small, that the firms involved are typically very large, and that the sample is not random but largely convenience-based.

My figure 1 shows the annual CPI inflation rate in New Zealand, a 5-year (trailing) moving average of the inflation rate, and the midpoint of the target range. The target range was 0 to 2 percent from the beginning, changed to 0 to 3 percent in December 1996, and changed again to 1 to 3 percent in September 2002, shifting the target midpoint accordingly. We see that the inflation rate has fluctuated quite a bit, but that from the late 1990s the 5-year moving average has been either close to or somewhat above the target midpoint.

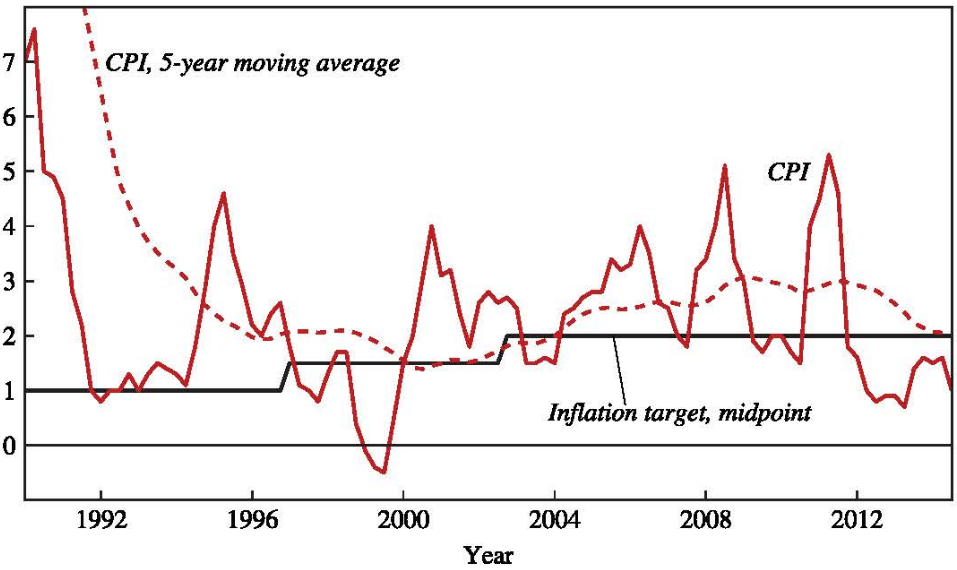
My figure 2 in addition shows the results of the RBNZ Survey of Expectations of the annual inflation rate 1 and 2 years ahead, respectively, with corresponding 5-year moving averages. We see that the inflation expectations are clearly influenced by the current inflation rate but vary less, and the 2-years-ahead inflation expectations are more stable than 1-year-ahead expectations.

In particular, the 5-year moving averages of inflation expectations are close to the 5-year moving averages of actual inflation. The respondents in the RBNZ survey seem to have, on average, fairly unbiased and therefore fairly realistic inflation expectations. The 5-year moving averages of the inflation expectations thus exceed the midpoint of the inflation target range as much as the 5-year moving average of the actual inflation rate does, rather than being anchored on the midpoint of the target range.

1. Information about the RBNZ's "M14 Survey of Expectations" can be found at http://www.rbnz.govt.nz/statistics/m14.

Figure 1. Inflation and Inflation Target, New Zealand, 1990–2014

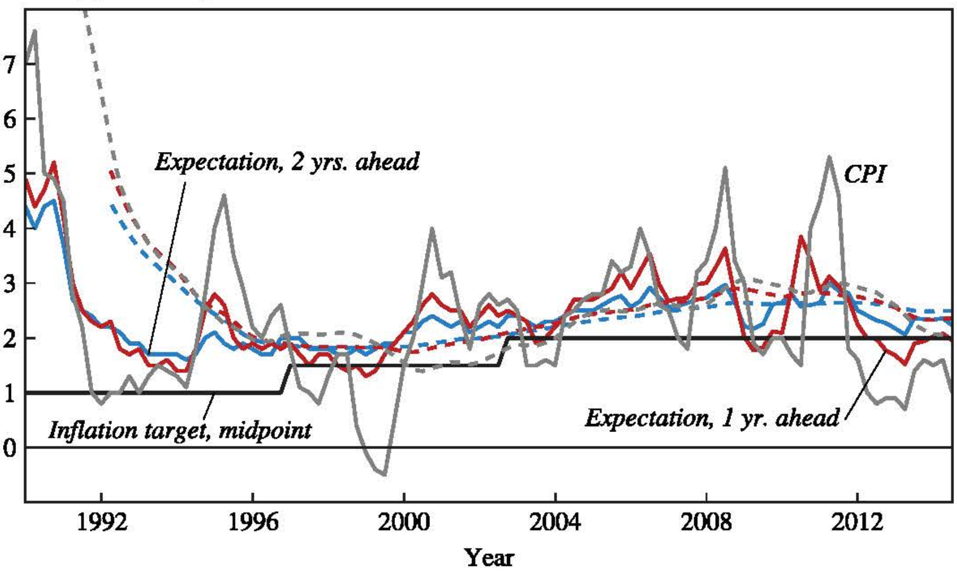
Percent, year-over-year



Source: Datastream.

Figure 2. Inflation, Inflation Expectations, and Inflation Target, New Zealand, 1990–2014[a]

Percent, year-over-year



Sources: Datastream, RBNZ Survey of Expectations.
a. For each series, the dotted line represents a 5-year moving average.

It would have been desirable to have some comparison of the authors' surveys and the RBNZ surveys and a discussion of why they give such different impressions.

In Sweden, where the central bank, the Riksbank, announced in 1993 that an inflation target of 2 percent for the annual CPI inflation rate would apply from 1995 onward, there are several surveys of inflation expectations. One survey is the so-called Prospera Survey, commissioned by the Riksbank and conducted by TNS Sifo Prospera, which surveys the expectations of the annual CPI inflation rate 1, 2, and 5 years ahead among a panel of labor market organizations (trade unions and employers' associations), purchase managers, and money-market participants.[2] It began in 1995, has been done quarterly from 1996, and has been done monthly for money-market participants from 2009.

My figure 3 shows Sweden's annual CPI inflation rate, its 5-year moving average, and its average from 1995 up to each date. One can see that the CPI inflation rate has on average fallen substantially below the inflation target; in particular, the average inflation rate during the period 1995–2014 is only 1.2 percent, a full 0.8 percentage point below the target. The figure also shows the Prospera inflation expectations 1 and 2 years ahead and their corresponding 5-year moving averages.[3]

One can see that the inflation expectations are influenced by the current inflation rate and that the 2-years-ahead expectations are more stable than the 1-year-ahead ones. However, in contrast to the RBNZ Survey of Expectations, the moving averages are close to the inflation target rather than the moving average of actual inflation. Thus, the Prospera inflation expectations seem relatively strongly anchored on the inflation target, in spite of actual inflation falling substantially below the target.

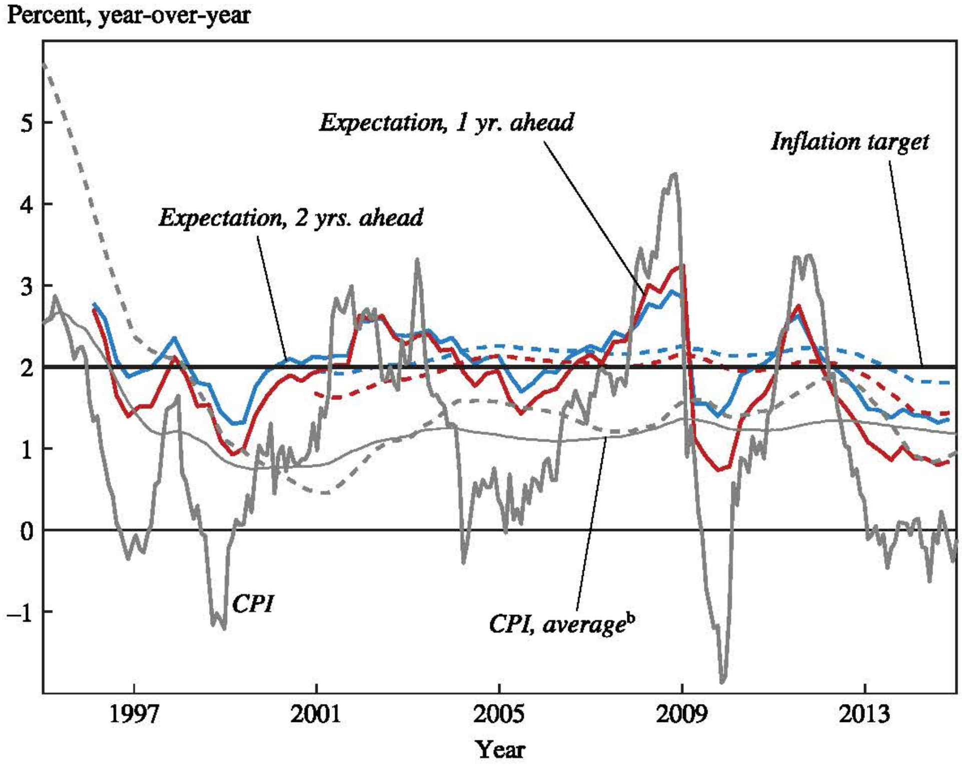
In Sweden there are two other relevant surveys, the Business Tendency Survey and the Consumer Tendency Survey, both conducted by the National Institute of Economic Research (NIER), a public authority under the Swedish Ministry of Finance.[4] The Business Tendency Survey

2. Information about the TNS Sifo Prospera's "Inflation Expectations" survey can be found at http://www.prospera.se/inflation-expectations.

3. In my previous work (Svensson 2011, 2015b), I discuss the reasons for and consequences of the systematic undershooting of the inflation target; Svensson (2015a) includes a comparison of the monetary policies of the RBNZ and the Riksbank.

4. Information about the NIER's "Economic Tendency Survey" can be found at http://konj.se/english/publications/economic-tendency-survey.html.

Figure 3. Inflation, Inflation Expectations, and Inflation Target, Sweden, 1995–2014[a]

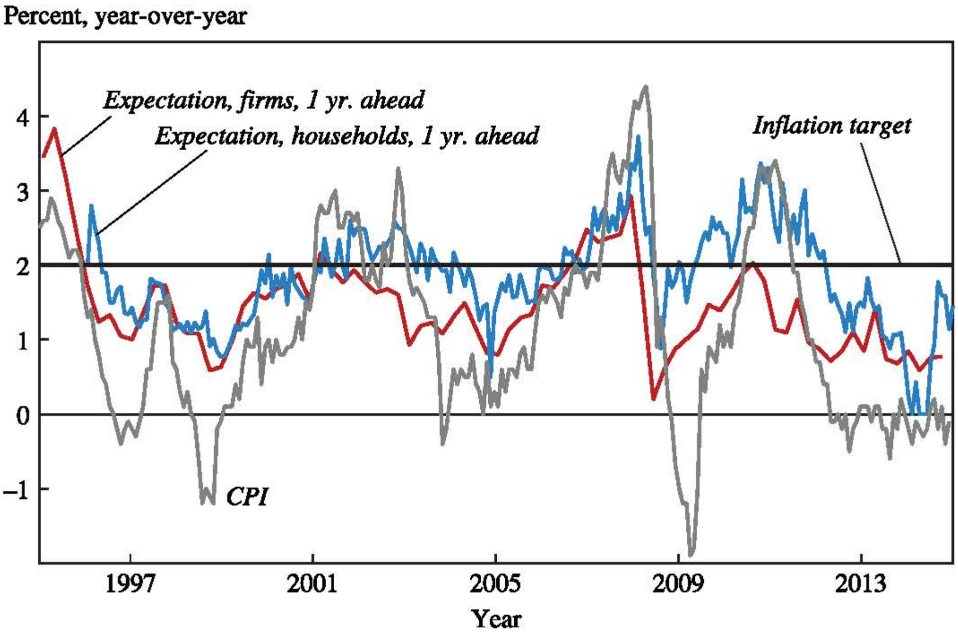


Sources: Statistics Sweden, TNS Sifo Prospera.
a. For each series, the dotted line represents a 5-year moving average.
b. Cumulative average of the CPI from 1995 onward.

is a large survey of firms in a set of relevant industries, with a sample of 6,500 firms, making up about 75 percent of employment in the total population of firms with activities in the relevant industries (including 100 percent of firms with 100 or more employees). The response rate is between 50 and 70 percent, depending on the industry. The survey is quarterly and started in 1987. The Consumer Tendency Survey uses a sample of about 1,500 households, is monthly, and started in 2002. Both surveys ask a number of different questions, including the respondent's expectation of the annual CPI inflation rate 1 year ahead.

My figure 4 shows the actual CPI inflation rate and the NIER surveys of firms' and households' expectations of inflation 1 year ahead. One can see that households' inflation expectations are on average close to the inflation target and above actual inflation. In contrast, firms' inflation expectations are on average below the target and close to average actual inflation. Thus, both Prospera and households' inflation expectations are more anchored on

Figure 4. Inflation, Inflation Expectations, and Inflation Target, Sweden, 1995–2015



Sources: Statistics Sweden, National Institute of Economic Research.

the inflation target and consequently biased and not rational. Firms' inflation expectations are not anchored on the inflation target but are more unbiased and rational.[5]

For the United States, the authors refer to the Michigan Survey of Consumers and the New York Fed Survey of Consumer Expectations. They argue that they find all the same patterns in inflation expectations as they

5. As I discussed in earlier work (Svensson 2015b), there are at least three observations that together indicate that inflation expectations in line with the target are more important than the NIER firms' inflation expectations in affecting wage setting in Sweden: (i) statements from the Swedish Trade Union Confederation and the Industrial Trade Unions, (ii) the fact that the TNS Sifo Prospera Survey reports inflation expectations of labor market organizations (both for employees and employers) similar to the expectations of all interviewees reported in my figure 2 (and thus close to the inflation target), and (iii) the importance of central wage negotiations over wage drift for wage setting after the introduction of the Industrial Cooperation and Negotiation Agreement in 1997. As I further discussed in Svensson (2015b), when nominal wages are negotiated and set under the expectation of an inflation rate equal to the 2 percent target, in spite of the average inflation rate falling significantly below 2 percent, the result is higher real wages than anticipated. This in turn leads to higher average unemployment than if inflation had on average been equal to the target. The average excess unemployment rate is estimated to be as large as 0.8 percentage point during 1997–2011, with a 95 percent confidence interval from 0.55 to 1.5 percentage points.

previously documented for managers of firms (as well as households) in New Zealand and conclude that expectations in the United States, therefore, appear just as unanchored as they do in New Zealand.

However, Michael Bryan, Brent Meyer, and Nicholas Parker (2015a) report results from the Federal Reserve Bank of Atlanta's Business Inflation Expectations Survey, a large monthly survey of businesses compiled by the Federal Reserve Bank of Atlanta since October 2011. Among other things, they document that, in the aggregate, firms' inflation expectations are very similar to the predictions of professional forecasters for national inflation statistics, despite a somewhat greater heterogeneity of expectations that they attribute to the idiosyncratic cost structure firms face. Bryan, Meyer, and Parker (2015a) also show that firms' inflation expectations bear little in common with the "prices in general" expectations reported by households. They additionally show that, during their 3-year sample, firms' inflation expectations appear to be unbiased predictors of their year-ahead observed (perceived) inflation. In a blog post shortly after Kumar, Afrouzi, Coibion, and Gorodnichenko presented their paper at Brookings, Bryan, Meyer, and Parker (2015b) suggest that their own research indicates that the authors' results are due to poorly phrased questions and that there is strong evidence that their respondents either did not understand the questions about "prices in general" or were misinterpreting them, as compared to questions about "inflation."

In summary, other surveys in New Zealand, Sweden, and the United States indicate better anchoring of inflation expectations on the inflation target or on average actual inflation. The reasons for these discrepancies are not well understood, and the precise formulation of survey questions appears to matter. The authors' strong conclusions from a one-off survey, including any policy conclusions, therefore seem premature.

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GENERAL DISCUSSION William Brainard opened the discussion by remarking that he enjoyed the paper by Saten Kumar, Hassan Afrouzi, Olivier Coibion, and Yuriy Gorodnichenko in part because it confirmed much of what he had been persuaded of by earlier work. He mentioned Truman Bewley, who sampled more than 500 firms and found that none of them indicated ever paying attention to the Federal Reserve's targeting in determining their own pricing. Brainard had heard the same in talking with businessmen. However, it did strike him as surprising that this paper included a significant number of financial services firms, which he had always thought paid great attention to what was going to happen to the bond prices and the stock market and, one would assume, therefore listened to what the Federal Reserve was announcing. Did the authors find that knowledge of the Reserve Bank of New Zealand behavior was stronger at least in that financial services subsample?

Brainard also wondered whether the authors' survey also asked firms about their price setting and inflation expectations specifically regarding the cost of the materials that they buy. After all, most of the firms that set actual prices that later show up in the CPI are producing only a tiny part of it, and many others produce intermediate products that are not averaged into the CPI at all. Overall, though, it was not surprising to him that many people do not think about the connections between their personal shopping experience, their own firm's pricing, and a third thing that they are not directly involved in, which is the bundle of goods that make up the CPI.

Ben Friedman said he liked the paper for the same reasons discussant Alan Blinder outlined. He thought it was a refreshing antidote to the usual narcissism of people in the economics profession who do not recognize that everybody else finds reading Federal Open Market Committee statements much less interesting than reading the sports pages or crime thrillers. He thought the key question, which discussant Lars Svensson also raised, was this: What is the policy implication? The paper did not say much about that, yet in the United States it is clearly very important, following the paper's own argument.