Comment on "Inflation Expectations – a Policy Tool?" by Olivier Coibion, Yuriy Gorodnicheko, Saten Kumar and Mathieu Pedemonte

By Ricardo Reis[1]

Abstract

This comment makes three points. First, it provides an interpretation of the main findings of the research on survey inflation expectations by households and firms over the past two decades. Second, it discusses the question of how communication policy can affect inflation expectations. Third, it concludes with an analogy between communication about inflation and monetary policy, and communication about dieting and health policy.

1 Introduction

To say that inflation expectations matter for monetary policy is, I think, completely uncontroversial. All respectable central banks invest resources refining measures of inflation expectations in their economies, and then follow these quite closely to ascertain the state of the economy. Yet, when they refer to inflation expectations, many policymakers have in mind the expectations that are reflected in financial prices, or those from professional forecasters. After a speech by Mario Draghi, almost surely there is at least one news report on what happened to the inflation swap rate or the break-even inflation rate. The professional forecasters who follow closely the ECB read the speech carefully and reflect it in their answers to the next round of surveys.

Coibion, Gorodnichenko, Kumar and Pedemonte (2018) ask us to pay more attention instead to the surveys of expected inflation among firms and households. Over the last two decades or so, there has been much academic research on this new and exciting data, which is starting to find its way into the monetary policy process. Research has identified interesting patterns in these data, and this paper surveys what we have learned and what are the open questions raised by the latest work in this research agenda. In this discussion, I will first give my interpretation of the papers surveyed, then provide my answer to the question of whether expectations are a policy tool, and

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finally conclude with an analogy between communication about inflation and about caloric intake.[2]

2 Survey inflation expectations: what do we know?

From the literature surveyed by Coibion et al (2018), I take five conclusions.

2.1 Survey inflation expectations are consistent with widespread inattention

When people are asked for either what the current inflation rate is, or what it was in the recent past, or what they expect inflation to be, many answers are nonsensical. In surveys of US households, usually around one fifth of respondents expect inflation to be in the two digits, even though it has not been so in almost 40 years. In surveys of firm managers, a large number of respondents state that inflation is, or will be next year, more than 2% above what it is today or what is the announced inflation target. Many people are simply clueless about inflation. They pay essentially no attention to this variable that is the focus of so many economists.

At the same time, and this is a strong lesson from this literature, people are not stupid. They are quite far from it, in fact. While many are clueless, many others exhibit knowledge of the present and expectations about the future that are quite accurate. The noticeable feature of the data is not how informed or how ignorant some people are, but rather the remarkable range of disagreement. People disagree, by a lot, and about not just what will happen in the future, but also about what happened yesterday.

The extent of disagreement that we observe, and the way it changes over time, is consistent with the slow diffusion of information. People catch up to news with long and variable lags, differing in how quickly they do so. When there are large regime changes, most revise their expectations quickly, but following smaller changes in inflation or in monetary policy, the stickiness of information can be very deep. Past experiences can therefore linger, and shocks to the economic environment propagate directly to decisions over many successive months as a result of this information stickiness. In turn, what a person lives through can stay with her for a very long time and shape her future expectations.

Just because people's past experiences affect their present views about the future, they are not oblivious to the present. If you tell someone the current inflation rate, this has an immediate impact over what she expects inflation be over the next year. Moreover, people who live in an environment of high and volatile inflation update their expectations often and quickly to news.

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[2] Given the space limitations, I will constrain myself to the papers surveyed in Coibion et al (2018), and will not reference them individually, but refer the reader to their paper for the citations to the literature. The exception is when I explicitly refer to a study that is not discussed by them.

Two important sources of data are people's shopping experiences and the media. Even if people do not follow Bayes rule strictly, they update prior beliefs in response to news. Likewise, they respond to announcements of future changes, so they are not purely backward looking.

Finally, turning to policymakers and their institutions, many people do not know who the current president of the ECB is, or what are the ECB's mandate or targets. Central bankers should not get too anxious about this. Most people also cannot name a single judge in the European Court or state in which town or country the institution is based in. This is fine, and in some ways, it is as it should be. In a well-functioning economy, people with limited capacity to pay attention should focus in whatever they are productive and count on policymakers to deliver a stable macroeconomic framework, so that they don't need to pay attention to inflation or to monetary policy.

This widespread inattention and stickiness of information are certainly inconsistent with full-information rational expectations. But the facts listed above are also not consistent with models of firms and households that are fully rational but solely have incomplete information about current fundamentals. They are at odds with explanations for the sluggishness of expectations that rely solely on imperfect policy credibility. Finally, the clear forward-lookingness of expectations as well as the malleability of behavior in response to changes in regime rejects the view that people are backward looking or have random animal spirits.

2.2 Survey inflation expectations can be measured, with effort

We have been measuring household inflation expectations for decades across countries, using different surveying techniques, and across different circumstances. More recently, researchers have started doing the same for firms' managers. It is not easy to conduct these surveys, both in terms of trying to get subjects to participate, and in terms on making sure that the order or wording of questions does not bias their responses. But, we can do it, and know how to get consistent and reliable answers.

To measure people's uncertainty about the future is also hard, but it can be done reliably by using questions about distributions of different outcomes. It is especially important to be careful about the width of the bins in these questions, and to allow for a wide range of possible outcomes. Just as importantly, the literature has convincingly shown that disagreement is not uncertainty. They are conceptually different, and when we can measure both in the survey data, their correlation is at best weak. A bad and obsolete habit in economic research was to measure the cross-sectional dispersion in surveys of expectations and use it as a proxy for uncertainty about the future. No serious researcher can mix up disagreement and uncertainty today.

One finding from designing the surveys is that the way inflation is worded, whether in terms of the change in the absolute level of prices, the change in the consumer price index, or a core version of it, this does not seem to matter for the answer. Survey respondents give consistent and similar answers when asked about different measures of inflation. This can be discouraging for the many economists (myself included) who obsess at the differences between these measures. But it can be

encouraging from the perspective of the surveys in showing that people are quite coherent in their assessment of the changes in the relative value of the unit of account.

More generally, the way questions are designed matters, especially as people have well known psychological biases that must be taken into account in the survey. The way in which sampling is performed can also have a large influence on the results. But again, there has been great progress doing this to get accurate answers. One important difference to keep in mind is that people are sophisticated enough to give quite different answers when asked about their future individual circumstances as opposed to future aggregate outcomes.

Altogether, the conclusion is that measuring expectations is possible and worthwhile. It takes effort to do it, and it is probably best done by institutions with large and consistent resources rather than by individual researchers. Experience suggests that the surveys deliver consistent and coherent answers.

2.3 Survey expectations are correlated with anticipated decisions

Both in the time series and in the cross section, households that expect higher inflation also express a higher willingness to spend. This is consistent with higher expected inflation implying, for a fixed nominal interest rate, a lower real interest rate, and thus a lower return and desire to save. Whether this is the explanation, or some other one, the fact remains that several studies have found this association in the data.

More recent work has found that firms that expect higher inflation sometimes plan to raise the prices of their goods and sometimes plan to raise the wages they pay. Likewise, higher inflation expectations sometimes come with plans to cut investment or hire fewer workers. These facts are less solid, insofar as there are still few studies on the topic, and the answers change in different samples. Perhaps this is to be expected since the theory linking inflation expectations to pricing or hiring says that the predicted effect depends on the nature of the shock, what else is being held fixed, and the behaviour of competitors.

This research strongly suggests that survey expectations of inflation are not just noise, nor are they just inconsequential opinions. Rather, survey inflation expectations are informative for the choices that people make.

2.4 Policy announcements affect survey expectations with delays and at low frequencies

Given the widespread inattention, at best, routine policy announcements can only affect the few people that happen to be paying attention at that time. Given the stickiness of information, any effect of these announcements will occur gradually over time, so it can only be detected at lower frequencies. Given the correlation between speeches and actions, as most speeches either announce or explain actions, disentangling the effects of each separately is hard. Finally, given the reverse causality

that arises because some changes in policies are responses to changes in expectations, identification is tricky. All combined, cleanly identifying the effect of policy announcements on survey expectations is a daunting empirical challenge.

Coibion et al (2018) look at time-series plots of expected inflation around a few famous events of policy announcements. In some of them, like the announcements of the start of quantitative easing, it is hard to distinguish what was in the announcement versus the actual policy that was then implemented. In others, like the famous "whatever it takes" Draghi speech, reverse causality is likely present. Of the events considered by the authors, the one that is more suited to study the impact of a policy announcement on expectations is, in my view, the announcement by the Federal Reserve in January of 2012 that it was adopting a 2% inflation target. Arguably, this came with no material change in policy, as the Fed had implicitly been targeting 2% inflation for decades, and it was announced at this date after a prolonged internal debate but not in reaction to recent changes in expectations.

Chart 1 plots the five-year breakeven inflation rate from financial markets and the one-year ahead median expected inflation from the Michigan survey of households around this date. Importantly, and differently from Coibion et al (2018), the plot uses the same frequency for the two measures of expectations over a 24-month period. Staring at this picture, it is hard to detect any difference between the response of these two different measures of expectations to the announcement. Furthermore, if one tries to abstract from the vertical line marking the date of the announcement, it would be hard to guess when the announcement took place, regardless of the measure of expectations that one focuses on. At high frequencies, it is just very hard to know whether policy announcements have an effect on expectations.

At the same time, Chart 2, reproduced from Mankiw, Reis and Wolfers (2004), looks at a much more significant change in policy regime, the significant disinflation pursed by chairman Paul Volcker. The figure plots the distribution of inflation expectations from the Michigan survey starting in 1979 and ending in 1982. At both the start and the end, the distributions take a familiar bell shape, dislocated to the left in the latter period relative to the former one, matching the large decline in inflation. In between though, one sees the slow dissemination of information as the distribution slowly moves, becoming bimodal in between. In turn, research that has compared countries that adopted inflation targets with others concludes that, in the former, survey expected inflation has a lower range of disagreement, and reverts past forecast error more quickly, consistent with expectations being better anchored.[3]

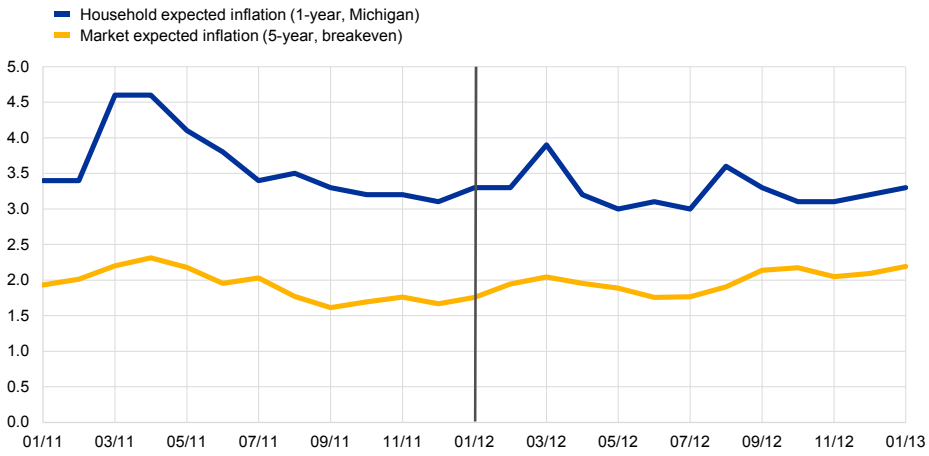
[3] See Capistran and Ramos-Francia (2009) or Crowe (2010).

Chart 1

Inflation expectations around the announcement of the US 2% inflation target

Market and survey inflation expectations before and after the January 2012 announcement of a 2% inflation target

(y-axis: inflation; x-axis: date)



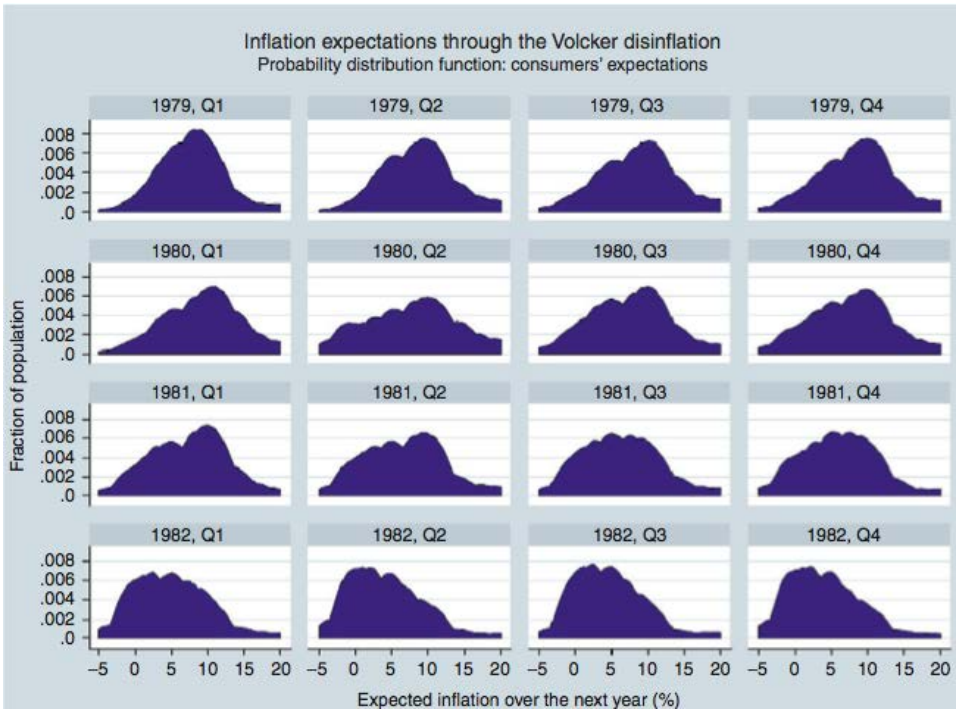
Source: FRED, Saint Louis Fed.

Chart 2

Distribution of US household survey inflation expectations during the Volcker disinflation

Probability density function of respondents of Michigan survey

(y-axis: frequency; x-axis: inflation rate)



Source: Mankiw Reis and Wolfers (2004).

Guided by these findings, my prior is that policy announcements and regimes do matter for survey expected inflation, but that this happens at low frequencies that event studies with short windows cannot detect.

2.5 Can better communication break inattention?

Studies have found that if I reveal to a survey respondent what past inflation was, or what the inflation target is, then they update their expected inflation for the future. This should not be too surprising, especially given the well-known tendency of survey respondents to try to impress, or at least be responsive, to the interviewer. If I ask you what you expect the population of Portugal to be in 2020, you might say 11 million. If I tell you the population in the latest measures was 10.265 million, then if you are like most people, you will likely revise your forecast down.

Second, some studies have also found that once one tells survey respondents what inflation was, then further giving them monetary policy statements or news reports has little effect on survey expected inflation. This is, of course, consistent with the fact that current or target inflation is a quite good predictor of future inflation in a statistical sense, and with the observation that people with limited attention do not need a very accurate forecast of inflation.

Third, giving people information seems to affect their survey expected inflation for about 6 months. Likely, you will forget quite soon what the actual population of Portugal is. You have more important information to carry in your limited memory, and Portugal's population is not terribly important for you.

From these three research findings, Coibion et al (2018) conclude that monetary policy communication should: target the message to the scenario, communicate through simple messages, and repeat messages often, respectively. Maybe. All of these are sensible recommendations. But I don't think that the evidence provides more than weak support for these policy conclusions. Right now, I just do not know, although how to shape communication is one of the more active and exciting current research areas, and I expect that in a few years, research may be able to make some concrete recommendations.[4]

3 Are household or firms' survey inflation expectations a policy tool?

A pedantic answer to this question is: of course not. Expectations are not a policy tool, but rather an endogenous outcome since policymakers do not set or choose them. A similarly easy but not enlightening answer is to say that of course any central banker who has an inflation target of 2% will be seriously concerned if she observes households and firms expecting inflation to rise to 5, 10 and then 20% in successive

[4] Haldane and McMahon (2018) and Ehrmann and Talmi (2018) are two examples of active work in this area.

years, and will likely change policy in response to this. A more accurate answer that follows from these two observations is that survey expected inflation can be an intermediate target for monetary policy.

A more concrete, and in my view more useful, way of approaching this topic is to ask the question of whether one particular actual policy tool c, say speeches or other forms of communication by policymakers, can have an effect on survey expected inflation π^e, independently of other policies that should be controlled for p, and where the ultimate target is actual inflation π. That is, the ultimate target is in the left-hand side of this equation:

$$\frac{\partial \pi}{\partial c} = \frac{\partial \pi}{\partial \pi^e} \times \frac{\partial \pi^e}{\partial c}\Big|_p$$

The research question is to estimate the fraction on the far right: the effect of communication on survey expected inflation, controlling for other policies. (Modern macroeconomic models, that focus on the joint determination of outcomes and expectations, are chiefly about pinning down the value of the first fraction on the right-hand side.) As I discussed above, based on the existing evidence, and acknowledging that the state of knowledge is not sufficiently advanced to permit strong conclusions, communication seems to have a slow and delayed, but significant, effect on survey inflation expectations after controlling for policies. That is, the fraction is not zero. Pinning down its precise value is a great challenge for researchers.

After the fraction is credibly and reliably estimated, a new layer of questions emerges. Communication might affect expected inflation because it reveals information about future policies. If setting interest rates today matters, it is likely that telling people what interest rates will be in the near future should matter as well. Communication might affect expected inflation because it tells the survey respondents what inflation is today, or because it provides information on economic fundamentals. Central banks have large staffs that study economic conditions in great depth and likely produce information that is relevant for people forming expectations. Finally, communication might affect expected inflation independently of policy or information. In this case, communication is about steering “animal spirits”, making people believe what might be convenient for policy. Which of these three channels from communication to expected inflation is the more relevant or, if all, what is their relative weight?

The evidence from financial markets around announcements about forward guidance and quantitative easing suggests that communication affects inflation expectations through the first two channels, that is by revealing information about future policy and current fundamentals. The evidence from professional forecasters is not as decisive, but also supportive, while the effect on survey expectations by households and firms is an open question. That communication will reveal intentions about future policy or knowledge of current fundamentals seems desirable and inevitable.

I am more sceptical (but open minded) about the third channel, partly because it has dangerous consequences. One peculiar version of the question “are inflation expectations a policy tool?” through the third channel is to ask: if the central bank just announced that its inflation target is now 5%, rather than 2% as before, would

expected inflation quickly jump by 3%? My reading of the evidence from hyperinflation is that the answer is no. When inflation is running into the many digits, it is quite frequent for policymakers to announce that they want to drastically lower it, and this has no effect in expectations or actions. Only when the communication is accompanied by fundamental changes in policy, does inflation fall. Hyperinflations also teach the danger of telling politicians that if they just make speeches, but no painful choices, they can have a large effect on economic outcomes. While there are some circumstances where there are multiple equilibria for inflation, between which a communication-induced sunspot can select, these are likely rare. Believing they are present more often leads to useless propaganda that undermines the credibility of the central bank.

Finally, there are two other related issues that are part of this overall question. The first of these is the time horizon of the expectations. It matters whether we think that speeches can affect the expected change in prices between now and one year from now, versus 10 years from now. In terms of the notation, this can be denoted as what is T in π_{t+T}. Second, taking as given that actual inflation has a persistent component and a transitory component, so $\pi_t = \pi_t^P + \pi_t^T$, and taking the latter as reflecting both measurement error and factors that policy can do little about, then the real question is to estimate:

$$\left.\frac{\partial \pi_{t+T}^{P}}{\partial c_t}\right|_{p}$$

Households' inflation expectations seem to respond quite strongly to gasoline prices. Both gas price changes, and the response of expectations to them, tend to be short lived. Therefore, even though gas price changes might explain a great deal of the variation in survey expected inflation, policymakers must be careful to extract the signal from the noise, which may require ignoring this component of the variation.

As discussed earlier, the stickiness of information implies that using communication for fine tuning is difficult. Moving expectations at high frequencies is hard. At the same time, inattention makes the maintenance of a stable unit of account easier because this takes place at lower frequencies. The decade between 2008 and 2018 saw an enormous success in the anchoring of inflation expectations. In spite of a series of large shocks, policy experimentation, and significant short-lived changes in inflation, inflation expectations stayed remarkably constant.[5] In a policy regime where the serial correlation of quarterly inflation was close to zero, it is optimal for an inattentive agent to keep expectations of inflation 1 and 5 years ahead constant. In turn, this makes the job of policymakers easier in responding to shocks.

4 Inattention about inflation, in perspective

How many calories I ate over the past three months is more important to me than what inflation was during this period. Thanks in part to good monetary policy, inflation in the

[5] See Miles et al (2017) for a discussion.

last quarter has been moderate and not too far from the announced inflation target, so that whatever spending or effort decisions I made, depended little on the exact value of inflation. Calorie ingestion instead has a direct effect on my well-being, as well as on the diet and exercise choices that I made and will make. For many of the readers of this piece, the same probably applies.

Now, if I went and surveyed people on how many calories they ingested in the past three months, my guess is that I would find that many are clueless. Their inattention would apply both to the past as well as to their forecasts of the near future and it would manifest itself in forecasts of both individual and aggregate consumption. People would disagree about these calories expectations, and a wide majority would have trouble stating the medical guidelines for what a healthy diet should be in terms of calories consumed as a function of individual characteristics.

This does not stop us, as a society, from enforcing strict and costly food labelling rules on calories per serving, nor of conducting widespread and expensive campaigns for public health focussed on caloric intake. These are likely useful and important in anchoring choices and even if new public campaigns have a small immediate impact, so that using them to fine tune calorie consumption across seasons of the year would likely fail, we expect that they serve an important role at lower frequencies in guiding people to healthier choices in spite of their inattention.

Central bankers should therefore not be discouraged from learning that the research on survey inflation expectations reveals a great deal of inattention, sticky information, measurement difficulties, and limited success of communication policies. Comparing these to the caloric benchmarks, research seems to be on the right track, and investing more to understand these patterns better seems worthwhile and important. Policy must, as always, be modest about what it can achieve, without losing track of its important role in affecting outcomes.

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