Household Inflation Expectations in France: Lessons from a New Survey and the COVID-19 Crisis

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Abstract – This article documents several stylised facts about household inflation expectations in France based on data from a new survey by the European Central Bank, the Consumer Expectation Survey, conducted online among thousands of households between 2020 and 2021. The results are compared with those from the INSEE CAMME survey (a monthly consumer confidence survey), which has been carried out for many years. The conclusions drawn from the results obtained through these two surveys converge: the level of inflation anticipated by households is higher than actual or forecasted inflation. During the period 2020-2021, inflation expectations were positively correlated not only with current inflation, but also with the expected level of unemployment. During the COVID-19 crisis, only the first lockdown had a positive effect on expectations. However, the methodology of the two surveys differs, leading to discrepancies in the extent of the bias on current inflation, the dispersion of expected inflation or the intensity of correlations with actual inflation or with unemployment.

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Inflation expectations play a crucial role in the conduct of monetary policy. The inflation targeting strategy pursued by most central banks in the world presupposes anchoring inflation expectations to their target. This anchoring contributes in particular to stabilising the economy in the face of major shocks such as the 2008-2009 financial crisis or the COVID-19 crisis, as it makes it possible to avoid overreactions by economic actors in the face of temporary inflationary shocks. Keeping inflation expectations stable at around the target level then increases the effectiveness of the central bank when it varies the nominal interest rate. The anchoring of expectations is often assessed on the basis of market indicators or on the basis of forecasters' surveys. More recently, central bank communication has become more public-oriented (Haldane & McMahon, 2018) and monitoring household or company expectations has become increasingly important, resulting in the development of specific surveys (Bernanke, 2007; Cœuré, 2019; Banque de France, 2021).

Household inflation expectations play a role in their economic decisions. In theory, for a given nominal interest rate, expecting higher inflation has a negative effect on the real interest rate, which increases consumption and decreases saving. However, higher expected inflation also acts as a tax on nominal assets and can generate negative wealth and income effects, which reduces consumption. In practice, recent empirical work has investigated whether inflation expectations have a significant effect on household consumption and saving decisions (for a summary, see D'Acunto et al., 2022): Bachmann et al. (2015) and Burke & Ozdagli (2021) based on US data do not find a positive effect whereas Dräger & Nghiem (2021) in Germany, Ichiue & Nishiguchi (2015) in Japan and Andrade et al. (2021) for France show that there is a positive link between expectations and consumption. Vellekoop & Wierdeholt (2019), using Dutch data, find that households expecting high inflation tend to save less. The link between consumption and inflation expectations can be heterogeneous across households, depending on cognitive biases (D'Acunto et al., 2022) or financial constraints. Finally, recent literature has focused on demonstrating the existence of a causal link between expected inflation and consumption based on controlled experiments (Coibion et al., 2021).[1]

However, the way in which the inflation expectations channel works in practice is still poorly understood based on data available from households or companies (Candia et al., 2020).

In particular, empirical studies have shown that household expectations deviate significantly from the standard framework of full-information rational expectations: households are on average less informed than other economic actors, as evidenced by their generally high level of inflation expectations and the wide dispersion of their responses. Inflation, defined as the general increase in prices, is difficult for households to understand because it is a concept that aggregates price developments in a basket of goods and services. Empirical literature (e.g. Accardo et al., 2011) also shows that household perceptions of inflation can be influenced by relative price movements (gasoline and daily purchases). However, while relative price movements can also affect consumption choices at product level, it is the influence of inflation in the aggregate sense on consumption and saving choices (via its effect on the expected real rate) that is relevant from a macroeconomic point of view (Bachmann et al., 2015). The objective of household surveys is then to analyse what households perceive and understand of aggregate inflation.

In this article, we propose to document stylised facts relating to household inflation expectations in France based on two sources. A first source, which has been available for several decades, is the monthly consumer confidence survey called CAMME, produced by INSEE.[2] It is conducted within a harmonised European framework for the European Commission and monitors inflation perceptions and expectations both qualitatively and quantitatively. The second source is more recent, the Consumer Expectation Survey (CES), launched in early 2020 by the ECB[3] and conducted in practice by the IPSOS institute in six countries (including France); its structure is inspired by the survey launched in the 2010s by the New York Fed. It aims to enrich the diagnosis of household expectations by central banks in the euro area.

An initial contribution by this article is methodological and consists in describing what a new survey can contribute to the measurement of inflation expectations in France and to what extent the two surveys produce a common diagnosis despite having different characteristics.

A second contribution is to use the period from February 2020 to December 2021, which covers not only the months of lockdown associated with the COVID-19 crisis but also the period during which inflation rose in 2021, whereas the empirical literature generally focuses on the recent period of low inflation and moderate economic shocks. Inflation expectations were in fact initially correlated with observed inflation, particularly at the point where inflation started to rise again. Subsequently, expectations reacted to the first lockdown due to COVID-19, but saw very little reaction to the second and third lockdowns. In particular, the average response and the dispersion of responses regarding expected inflation have increased (Weber *et al.*, 2022, show similar results for the United States). Finally, correlations between expected changes in unemployment or activity and inflation are analysed to try to understand how households link macroeconomic variables to each other (Candia *et al.*, 2020).

The rest of the article is organised in the following manner. The first section presents the differences and common points of the methodology of the two surveys used here. The second section then describes the bias, dispersion and determinants of inflation expectations. Finally, the third section analyses the response of expectations to recent shocks: the COVID-19 crisis, the rise in uncertainty and the rise in inflation, as well as the link between inflation expectations and household perceptions on economic activity or unemployment.

1. Two Surveys to Measure Household Inflation Expectations

The measurement of household inflation expectations usually involves conducting regular surveys to collect their opinion. Indeed, there is no direct way to observe household expectations as can be done for other economic variables, such as household consumption or income. However, asking households about their inflation expectations is far from easy, as the concept of inflation itself is often misunderstood or unfamiliar. The phrasing of the questions and the design of the survey are thus an essential issue as they affect both the response rate and the dispersion of responses (Bruine de Bruin *et al.*, 2008). In this article, we rely on two surveys (CAMME and CES) that are presented in this section.

1.1. Questions on Household Expectations

One of the first household surveys was the one launched in the 1960s by the University of Michigan, which still serves as a reference

for monitoring household expectations in the United States (Thomas, 1999). The INSEE CAMME survey is similar in terms of both design and question phrasing. The Consumer Expectation Survey (CES) has been developed since early 2020 by the Eurosystem in order to enhance the measurement of inflation expectations with its own survey of euro area households; at present, it covers six euro area countries (Germany, France, Italy, Spain, the Netherlands and Belgium).[4] The methodology of this survey is largely based on the Survey of Consumer Expectations (SCE) launched in 2013 by the Federal Reserve Bank of New York (from which other central banks, such as the Bank of Canada, have already taken inspiration). CAMME has 38,370 individual responses for the period February 2020-December 2021 and the "pilot" version[5] of the CES contains 47,982 individual observations for France for the period April 2020-December 2021 (the design of the two surveys are described in more detail in the Box).

On the question of prices, the CAMME survey questions households about their perceptions and then their expectations using two questions, one qualitative and the second quantitative (Table 1-A). The quantitative question is not asked of households that answered "prices stayed about the same" or "prices will stay about the same" to the qualitative question and an expected inflation rate of 0% is attributed to them. The questions on inflation asked in this survey are the same in all EU countries and the European Commission uses these surveys to produce indicators to monitor household perceptions and expectations. Like INSEE, the European Commission publishes monthly balances of opinions based on the qualitative responses. Quarterly statistics are also published based on quantitative data for the period from 2004 to present for the euro area, while INSEE only publishes balances of opinion.[6] Online Appendix S1 presents the calculation of the aggregated indicators based on individual data (link to the Online Appendix at the end of the article).

In the CES, the questions on inflation (Table 1-B) follow a structure that is quite similar to that of

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4. In addition, the Bundesbank is conducting its own ongoing survey in Germany. Since the start of the pandemic, the Banca d'Italia has also launched a specific household survey: the Bank of Italy – Special Survey of Italian Households, https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/indag-straord-famiglie-italiane/index.html.
5. An initial evaluation of the data has been carried out (ECB, 2021). After the pilot phase, the ECB publishes aggregated indicators on inflation expectations for each participating country from August 2022.
6. https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys/download-business-and-consumer-survey-data/time-series.

the CAMME survey, which allows the results of the two surveys to be compared.

The two surveys have important similarities in the structure of the questionnaire (perceptions then expectations, qualitative then quantitative question) as well as in the phrasing of the questions. First of all, both questionnaires ask questions about prices in general and not about inflation. Indeed, there is a trade-off to be made between asking households about "prices", which is a fairly familiar concept for them, or "inflation", which is a less well-known concept but one that is more relevant for monetary policy. For example, the New York Fed's SCE questions households about inflation and so does the Bundesbank. Bruine de Bruin *et al.* (2012) showed in particular that asking questions using the term "prices in general" leads to higher and more dispersed expectations on average.[7] In the CAMME survey and the CES, the phrasing of the question referring to "prices" allows for comparison of the results and probably improves response rates. The second common point is that in both surveys, the quantitative question is not asked of households that respond that prices have not changed or will not change; a 0% answer is attributed to them. This attribution is explicit for respondents to the CES and it is done *a posteriori* in the CAMME survey (for a detailed discussion, see Andrade *et al.*, 2021).

1.2. Methodological Differences

There are, however, several differences in the exact phrasing of the questions. An initial difference is observed for the possible response options for qualitative questions: they express an intensity scale with two responses around 0 and are presented in an unordered manner in the CES, while in the CAMME survey they are ordered but are not symmetrical around "stable prices". The CES also gives respondents more guidance than the CAMME survey (e.g. "even very small differences interest us"), which can lead to variations in interpretation of the different response options. Finally, the response options for the qualitative questions in the CAMME survey may appear ambiguous, in so far as they refer sometimes to a future variation in price and sometimes to a future variation in price evolution.

Compared to the CAMME survey, the CES contains two additional questions on inflation. First of all, the CES asks households about their inflation expectations over the following three-year period, which is close to the period corresponding to the price stability objective of monetary policy. Next, it asks a probabilistic question making it possible to measure the

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7. See Savignac et al. *(2021) for similar results on French companies.*

Table 1 – **Questions on price developments in CAMME and CES**

A – CAMME
How do you think that consumer prices have developed over the last 12 months? They have…
1. Risen a lot / 2. Risen moderately / 3. Risen slightly / 4. Stayed about the same / 5. Fallen
By what percentage do you think prices have increased (or decreased) over the last 12 months? (Provide an answer as a %).
1. They have increased by... / 2. They have decreased by...
By comparison with the past 12 months, how do you expect that consumer prices will develop in the next 12 months? They will…
1. Increase more rapidly / 2. Increase at the same rate / 3. Increase at a slower rate / 4. Stay about the same / 5. Fall
By what percentage do you think prices will icrease (or decrease) over the next 12 months? (Provide an answer as a %)
1. They will increase by… / 2. They will decrease by...
B – CES
First, we would like to ask you about changes in the general level of prices for goods and services in France. Compared with 12 months ago, what do you think has happened to prices in general?
1. Prices went up a lot / 2. Prices went down a lot / 3. Prices went up a little / 4. Prices went down a little / 5. Prices stayed exactly the same (that is 0% change)
How much higher/ lower do you think prices in general are now compared with 12 months ago in France? Please give your best guess of the change in percentage terms. You can provide a number up to one decimal place.
The next few questions are about future changes in prices in general in France. Looking ahead to 12 months from now, what do you think will happen to prices in general? We are interested in even very small changes.
1. Prices will increase a lot / 2. Prices will decrease a lot / 3. Prices will increase a little / 4. Prices will decrease a little / 5. Prices will be exactly the same (that is 0% change)
How much higher / lower do you think prices in general will be 12 months from now in France? Please give your best guess of the change in percentage terms. You can provide a number up to one decimal place.

Notes: Quantitative questions are not asked to respondents who responded that prices have "stayed about the same" (CAMME) or have "stayed exactly the same" (CES), or that they "will stay about the same" (CAMME) or "will be exactly the same" (CES), and an expectation of 0% inflation is attributed to them.

The sample for the CAMME survey is randomly drawn from data based on the telephone directory and tax information. Conducted by telephone, it has been available since 2004 in its current form and it collects the opinion on their economic environment and personal situation of about 1,800 households per month. The interviewee is either the bill payer or their partner. Each household can be interviewed consecutively a maximum of three times; in the sample, the average number of responses per household is two. The questionnaire was supplemented during the COVID-19 pandemic in order to question households about the possible consequences of the health crisis on their income, but the usual questions, including those on prices, were not changed (Clerc *et al.*, 2021). The response rates for qualitative questions on inflation are very high (around 95%) but they are relatively low for quantitative questions (around 50%). A higher response rate is obtained among the population with a higher income and higher level of education, while the elderly and women are less likely to respond (see Online Appendix S2).

The sample for the CES is a combination of a random sample and a previously constituted IPSOS panel. This survey is collected online from around 10,000 households, including 2,000 in France, on a monthly basis. Households can be re-interviewed each month of the year, thus, participants responded to an average of six consecutive survey waves over the sample period. The samples are intended to be representative of the population by gender, age and level of education. Compared to a telephone or face-to-face survey, online collection, however, creates a selection effect among younger or better educated categories. Unlike the CAMME survey, answers are mandatory for qualitative and quantitative questions on inflation, which leads to response rates close to 100% for these questions.

Recruitment rates are low for this type of survey: 13% for the CAMME survey in 2017[a] and 4.3% for the random sample of the CES in 2020. For the latter, the order of magnitude is close to those generally observed for random telephone recruitment. Once participants are recruited, the rates of those returning to the survey range from 60% to 80%, depending on the survey waves. Participation in the CES panel is higher. Indeed, the retention strategies are effective and the survey has low attrition rates: of those surveyed in April 2020, 77% responded in July and 70% were still active in October 2020 (ECB, 2021).

The characteristics of the two surveys are compared in the table below:

	CAMME survey (INSEE)	CES (ECB)
Availability	Launch: 1958; latest redesign: 2004	Launch: 2020
Frequency	Monthly (before 2008, no interviews in August)	Monthly
Observations	~1,800 households per month	~2,000 households per month
Collection method	Rotating panel. Respondents are interviewed for 3 consecutive months	Rotating panel. Respondents are interviewed for up to 17 consecutive months
	Telephone	Internet
Sample	Random	Random and IPSOS panel
Other topics covered by the survey	Activity, unemployment, standard of living, consumption and savings, personal financial situation, platform module on well-being, housing or the COVID-19 crisis	Activity, unemployment, standard of living, consumption and savings, personal financial situation, specific questions on household financial behaviour, COVID-19 crisis

[a] *INSEE presentation for the CNIS (French National Council for Statistical Information), 31 May 2017.*

degree of uncertainty of households about their response. For this question, households must provide probabilities for the likelihood of inflation happening at predefined intervals (see Online Appendix S3). This question, the phrasing of which is more complex, can be used to approximate the underlying distribution of an individual's expectations and thus measure the moments where they are higher than 1 and, in particular, the standard error associated with the responses.

2. How Are Household Inflation Expectations Formed in France?

In this section, we describe the main stylised facts that the CAMME survey and the CES make it possible to establish in relation to household inflation expectations.

2.1. Household Inflation Expectations Are Higher than Actual Inflation

Table 2 presents descriptive statistics of household responses to quantitative questions on perceptions and expectations in both surveys. Between February 2020 and December 2021, average household inflation expectations were 3.2% according to the CES and 6.5% according to the CAMME survey, while inflation averaged 0.5% in 2020 and 2.1% in 2021 and inflation forecasts made in 2020 for 2021 or in 2021 for 2022 were below 2%. The median values of the distribution of expectations are lower, 2% for the CES and 4% for the CAMME survey, suggesting a significant dispersion of responses. The standard error of responses in the CES is 6.7%, compared to 9.9% in the CAMME survey. These values are high in comparison with those

Table 2 – Household inflation perceptions and expectations

	CES			CAMME	
	Perceptions	Expectations one year ahead	Expectations three years ahead	Perceptions	Expectations one year ahead
Average	3.25	3.21	3.09	8.13	6.54
Median	2.00	2.00	1.50	5.00	4.00
Standard error	6.74	6.66	6.99	10.64	9.86
Observations	46,953	47,979	46,953	21,172	18,278
Trimmed					
Average	2.92	2.88	2.70	7.31	5.76
Median	2.00	2.00	1.50	5.00	4.00
Standard error	4.19	4.10	4.05	8.02	6.77
Observations	45,356	46,359	45,480	20,763	17,749
Corrected for the learning effect					
Average	4.05	4.01	3.66	-	-
Median	2.00	2.00	2.00	-	-
Standard error	7.84	7.71	7.97	-	-
Observations	18,905	19,029	18,905	-	-

Notes: The statistics are calculated based on the responses to the quantitative questions of both surveys (the lower response rate for CAMME explains the relatively low number of observations compared to the total sample); the statistics are weighted by the survey weights. Zero responses are included for households that respond that prices are stable. In the central panel, truncation involves eliminating values below the 2nd and above the 98th percentiles of the distribution of responses. Correcting for the learning effect consists of only taking into consideration the first three responses per household.
Reading Note: The median inflation expectations three years ahead are 2.0% once the learning effects have been corrected.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

from professional forecasters, for whom the standard error of the distribution of inflation forecasts is often less than 1, or the values for firm managers (for a comparison between households and companies, see Savignac *et al.*, 2021). Part of this dispersion can be explained by the occurrence of high levels of household responses regarding their expectations. The second part of Table 2 shows the same statistics but excludes from the calculation the extreme responses, defined here as those below the 2nd percentile and those above the 98th percentile, i.e. responses within the range [0%, 30%] and [−5%, 20%]. The averages decrease but remain high, the medians are virtually unchanged and the dispersion tightens.

The CES provides longer-term information, over a three-year period: the median inflation expectation is 1.5% and the average is 3.1%, which is slightly lower than the average over a one-year period. The responses to this question make it possible, in particular, to shed light on the temporary or sustainable nature of the inflationary pressures observed in Europe or the United States from mid-2021 onwards (Reis, 2021).

One explanation for the high level of expectations is that households perceive current inflation to be higher than that measured by the Consumer Price Index (CPI) and extrapolate this perception on their expectations. In particular, Jonung

(1981) documented the marked effect of inflation perceptions on expectations. The CES and the CAMME survey show a strong correlation between perceptions and expectations (Figure I): households that perceive inflation to be high have higher inflation expectations. However, the slope of the linear regression is less than 1 (close to 0.65 for both surveys for expectations over a one-year period and slightly lower (0.4) for expectations over a three-year period in the CES). Perceived inflation is higher than actual inflation over the period 2020-2021: average perceptions are 3.3% and 8.1% respectively for the CES and the CAMME survey, while inflation averages 1% over the period. This discrepancy between perceived inflation and measured inflation is a well-established stylised fact. In particular, Accardo *et al.* (2011) document that this discrepancy can be explained by an over-weighting by households of their daily spending (see also D'Acunto *et al.*, 2020 or Cavallo *et al.*, 2017), a greater focus on price increases than on price decreases (D'Acunto *et al.*, 2020) or the fact that households can take into account information (media, rumours, social media, etc.) beyond their own shopping experience (Ehrmann *et al.*, 2017).

The CES provides a significantly lower average inflation expectation than the CAMME survey (3.2% vs 6.5%). This discrepancy may be linked to differences in the phrasing or the way in which questions are posed. In particular, it

Figure I – **Correlation between perceived and expected inflation (as a %)**
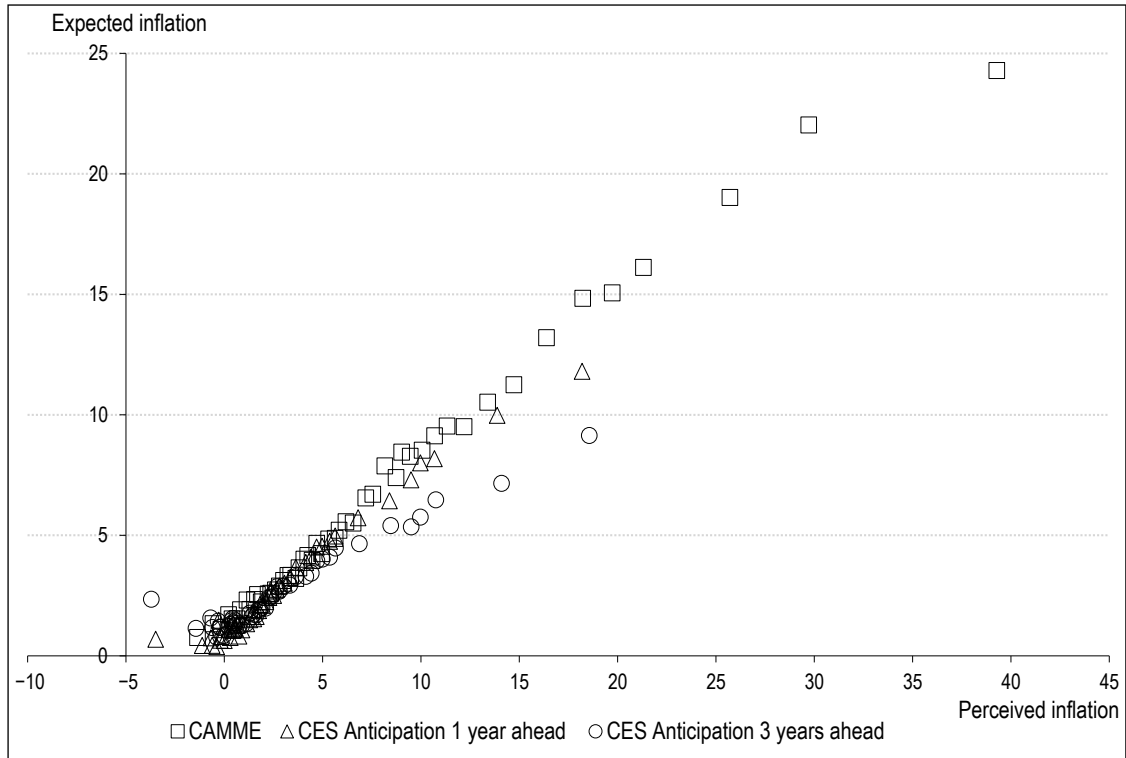
Notes: A "grouped" point cloud condenses the information by forming classes from the X-axis data and calculating the average of the Y-axis in these classes. The calculations are based on all quantitative responses to questions on perceived and expected inflation in one year (CAMME and CES) and in three years (CES).
Reading Note: Households that perceive current inflation to be 15% expect inflation to be close to 10% over the next 12 months in the CES.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

is more difficult to check that households do not access external information when they respond to the CES online, while the response is undoubtedly more spontaneous in the CAMME survey. Another source of difference, the implications of which can be assessed quantitatively, is related to the fact that the CES surveys the same household several months in a row, which can lead to so-called learning effects (i.e. individuals change their answers simply due to being surveyed multiple times). This effect was recently highlighted in the New York Fed's survey (Kim & Binder, 2020). The underlying assumption is that households voluntarily inform themselves about price developments after being surveyed during the first wave, are more attentive to short-term information or correct manifestly incorrect answers without any additional information. In order to assess these learning effects, we estimate the equation (1) in which the survey waves s specific to each household allow us to measure the average effect of the repetition of the surveys on the responses. The first survey wave corresponds to the date of recruitment of a household into the survey panels. The final survey corresponds to the third wave for the CAMME survey and the 17th wave for the CES. The coefficients of the variable correspond to

each survey wave τ_s, measuring the effect of respondent learning.[8] We add control variables that take into account the characteristics of the individuals and a temporal effect γ_t to the model. The estimated model can be written as follows:

$$y_{its} = \sum_{s=1}^{S} \beta_s \tau_s + \alpha_i X_i + \gamma_t + \varepsilon_{it} \qquad (1)$$

where the dependent variable y_{is} is the inflation expectation of a respondent i, for the survey wave s. X_i is a vector of socio-demographic characteristics of an individual i (gender, age, level of education and income) and ε_{it} is a term of error.

The learning effect of respondents is estimated for each survey wave (Figure II). In the CES, expectations become lower the more the same household is surveyed. The learning effect is significant as early as the third month, at which point it is estimated to be −0.5 pp and then −1.5 pp after a year. In contrast, the learning

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8. We have a variable identifying the household in the CES while for the CAMME survey this identifier is reconstructed based on the many observable characteristics of the household, which can lead to a measurement error regarding this variable.

Figure II – **Respondents' learning effect (in percentage points)**
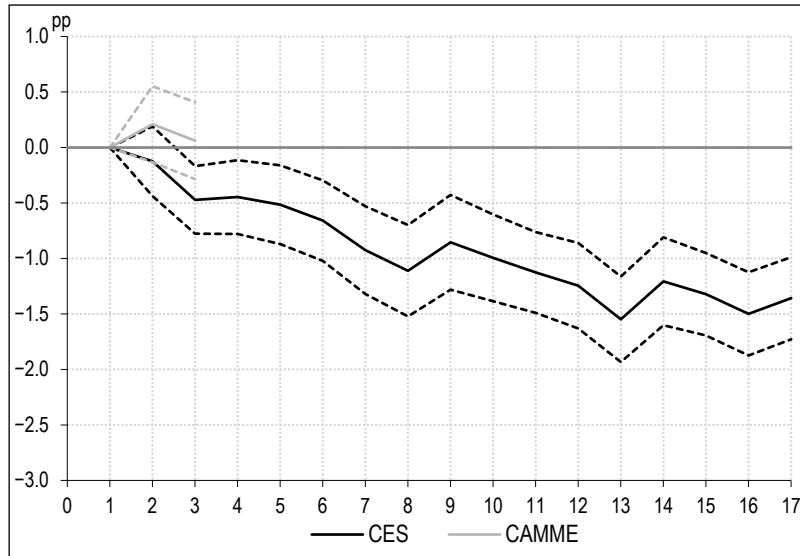
Notes: Solid lines give the estimated effect (cf. Equation 1) in percentage points (pp) of each of the re-interviewing waves; the dashed lines give the 95% confidence interval of the estimates. All the answers to the questions on quantitative expected inflation over a one-year period are used.
Reading Note: In the CES, the inflation expectation of households surveyed for the third time is on average about 0.5 pp lower than that observed for households responding for the first time.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

effect is not significant in the CAMME survey during the two waves of re-surveying.[9]

If we restrict all responses to the CES to those collected in the first three waves only, we find that the average inflation expectation is 4% (cf. Table 2). Thus, learning effects could explain up to 1 point of the discrepancy between the average expected inflation values obtained on each survey.

2.2. The Dispersion of Responses Is High

The standard errors of the distribution suggest that in both surveys inflation expectations are highly dispersed. In both surveys, despite inflation being close to 0% in 2020, the distribution of responses is asymmetric around 0 and the proportion of households expecting a fall in prices is very low: 1% of households in the

CAMME survey and 7.6% in the CES (Table 3). The discrepancy between the two surveys is partly due to the phrasing of the questions. Indeed, the CAMME survey offers three possibilities for price increases, while it uses only one option for price decreases. This asymmetry could bias responses against decreases. However, the proportion of decreases with the CES is within a high range compared to the surveys available. For example, Gorodnichenko & Sergeyev (2021) show that even during the deflation of the 2000s in Japan, less than 5% of households expected negative inflation.

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9. In Online Appendix S5, we reproduce the analysis for the period 2004-2014 (Andrade et al., 2021) where a "household" identifier is available. We observe a significant learning effect of a similar scale to that observed for the CES.

Table 3 – **Responses to the qualitative question on expectations over a one-year period**

CES		CAMME	
Prices will...	% of respondents	Prices will...	% of respondents
… decrease a lot	4.2	… fall	1.0
… decrease a little	3.4		
… stay exactly the same	28.2	… stay about the same	24.7
… increase a little	45.5	… increase at a slower rate	11.5
		… increase at the same pace	42.0
… increase a lot	18.7	… increase more rapidly	20.8
Total	100.0	Total	100.0

Notes: The calculations use the responses to the qualitative questions of both surveys, the proportions (in %) are weighted with the weights available in both surveys.
Reading Note: In the CAMME survey, 1% of household anticipate that prices will fall.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

Next, a significant proportion of households say they expect price stability: 24.7% in the CAMME survey and 28.2% in the CES. In the latter, the proportion is lower (20.7%) if we limit ourselves to the first three waves, in which the learning effects are low. This may reflect the fact that households do not think that prices can fall, which creates an accumulation point around 0 (Gorodnichenko & Sergeyev, 2021). This may also come from rounding effects in household responses that poorly perceive differences in inflation levels, or even in scale, especially when inflation is low (Andrade *et al.*, 2021).

In order to analyse the heterogeneity of quantitative expectations, Figure III presents the distribution of responses relating to perceived inflation and expected inflation in both surveys. The comparative distributions confirm that the two surveys share several common points in their responses (asymmetry and peak at zero). However, in the CES, the proportion of households expecting moderate inflation, between 0 and 2%, is higher than in the CAMME survey. The phrasing of the question in the CES, indicating that even small differences are of interest to the ECB, could help explain this difference. In total, in both surveys, a large proportion of household responses are between 0 and 2%, i.e. almost one third of the CAMME survey responses and about 40% of the CES responses (see Online Appendix S4 for details).

Next, a large proportion of the responses are integers: 73% in the CES and almost 95% in the CAMME survey.[10] Among the rounded responses, multiples of 5 are associated with peaks in the distribution. Thus, more than 10%

of households perceive or expect inflation to be exactly equal to "5%". In addition, responses giving multiples of 5% are relatively rare. These multiples of 5, chosen by default by households that, in principle, have no response to the question, are interpreted in the literature as an indicator of uncertainty (see *infra*). Finally, the proportion of households with expectations above 10% is higher in the CAMME survey, even though learning effects play a special role for these values. In total, 14.7% of households expect inflation above 10% when surveyed in the first three months, while less than 11% do so for all waves in the survey. This result suggests that "extreme" values correspond to values for which households are less sure of their response and the greater focus on inflation seems to weaken their perception in subsequent waves.

2.3. Determinants of the Dispersion of Responses

In order to better understand the origin of the dispersion of responses, we link expected inflation to different observable household characteristics. In Table 4, we present the effect of the observable characteristics of respondents (gender, age, level of education and income) on the dispersion of expectations and the marginal effect of these characteristics on the probability of responding "more than 5%", "between 0 and 5%", "0% exactly", or "less than 0%".

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10. *Precision to within one decimal place is asked of respondents to the CES, while with the CAMME survey this is one possibility. The discrepancy between surveys may also result from differences in the way in which they are collected. Responses reported on a screen may be more accurate than those reported by telephone without visual inspection.*

Figure III – **Distribution of inflation perceptions and expectations (% of respondents)**
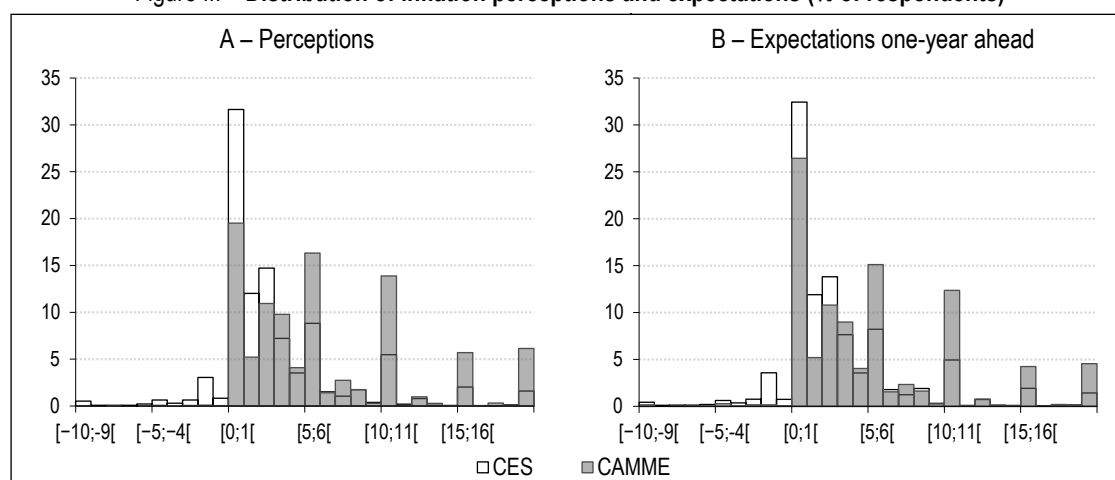
Notes: The graphs represent the proportion of households in % of the responses grouped by 1% interval; the proportions are weighted by the weights available in the surveys.
Reading Note: About 5% of respondents to the CES estimate that inflation in the past 12 months is between 10% and 11%.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

Table 4 – **Determinants of household inflation expectations**

		(1) Expected inflation		(2) Higher than or equal to 5		(3) Between 0 and 5		(4) Equal to 0		(5) Negative	
A – CES											
Sex (*Ref.* Male)	Female	0.76***	(0.06)	5.23***	(0.00)	−3.06***	(0.00)	0.61	(0.00)	−2.67***	(0.00)
Age (*Ref.* Aged 18-34)	35-54	0.37***	(0.08)	2.55***	(0.00)	6.88***	(0.01)	−7.19***	(0.01)	−2.16***	(0.00)
	55-70	0.65***	(0.09)	5.21***	(0.01)	14.32***	(0.01)	−12.56***	(0.01)	−6.85***	(0.00)
	71+	0.49***	(0.11)	4.43***	(0.01)	17.35***	(0.01)	−11.23***	(0.01)	−9.13***	(0.00)
Level of education (*Ref.* Primary)	Secondary	0.20	(0.14)	−0.47	(0.01)	11.69***	(0.01)	−3.04***	(0.01)	−8.90***	(0.01)
	Higher	0.14	(0.13)	−1.41**	(0.01)	20.40***	(0.01)	−9.42***	(0.01)	−10.12***	(0.01)
Income (*Ref.* Below the 1st quartile)	Between the 1st and 2nd quartiles	−0.95***	(0.11)	−4.53***	(0.01)	2.44***	(0.01)	−0.39	(0.01)	2.50***	(0.00)
	Between the 2nd and 3rd quartiles	−1.18***	(0.10)	−7.30***	(0.01)	7.39***	(0.01)	−2.89***	(0.01)	2.98***	(0.00)
	Above the 3rd quartile	−1.23***	(0.11)	−8.96***	(0.01)	13.86***	(0.01)	−5.71***	(0.01)	0.36	(0.00)
	Constant	4.70***	(0.27)								
	Learning effect	Yes		Yes		Yes		Yes		Yes	
	Temporal effect	Yes		Yes		Yes		Yes		Yes	
	N	47,979		47,979		47,979		47,979		47,979	
B – CAMME											
Sex (*Ref.* Male)	Female	1.41***	(0.15)	6.18***	(0.01)	−6.22***	(0.01)	0.99	(0.01)	−0.91***	(0.14)
Age (*Ref.* Aged 18-34)	35-54	−0.34	(0.26)	0.69	(0.01)	3.90***	(0.01)	−3.99***	(0.01)	−0.47	(0.29)
	55-70	−1.53***	(0.26)	−6.24***	(0.01)	11.00***	(0.01)	−3.84***	(0.01)	−0.88***	(0.28)
	71+	−2.82***	(0.27)	−12.27***	(0.01)	11.52***	(0.01)	1.79	(0.01)	−0.96***	(0.30)
Level of education (*Ref.* Primary)	Secondary	−0.16	(0.49)	0.20	(0.02)	2.38	(0.02)	−2.50	(0.02)	−0.09	(0.41)
	Higher	−1.97***	(0.47)	−6.76***	(0.02)	6.20***	(0.02)	0.50	(0.02)	0.11	(0.42)
Income (*Ref.* Below the 1st quartile)	Between the 1st and 2nd quartiles	−1.15***	(0.23)	−2.55**	(0.01)	5.44***	(0.01)	−2.46***	(0.01)	−0.30	(0.24)
	Between the 2nd and 3rd quartiles	−1.46***	(0.23)	−3.30***	(0.01)	7.36***	(0.01)	−3.78***	(0.01)	−0.24	(0.23)
	Above the 3rd quartile	−2.83***	(0.21)	−11.47***	(0.01)	13.47***	(0.01)	−1.87**	(0.01)	−0.18	(0.23)
	Constant	7.84***	(0.61)								
	Learning effect	Yes		Yes		Yes		Yes		Yes	
	Temporal effect	Yes		Yes		Yes		Yes		Yes	
	N	18,252		18,252		18,252		18,252		18,252	

Notes: Ordinary least squares in column (1), marginal effects estimated using the Logit model in columns (2) to (5). Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01. The variable explained in (2) is the variable indicative of inflation expectations higher than or equal to 5%. Same for columns (3) to (5).
Reading Note: Other things equal, the fact that the respondent is a woman entails an increase in the expected inflation of 1.4 pp compared to the average of the reference category.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

Inflation expectations appear higher for women than for men: the effect is almost twice as strong in the CAMME survey as in the CES (+1.4 vs +0.8 pp). In particular, this difference is related to the fact that women more frequently expect inflation above 5% but fewer price decreases. D'Acunto *et al.* (2020) show that this result can be explained by a differentiated experience of purchasing between men and women. The effects of age are ambiguous: in the CES, older households report price decreases or stable prices less frequently and more frequently respond between 0 and 5%, which has a positive effect on their expectations; in the CAMME survey, older households also report increases of between 0 and 5% more frequently, but they report increases of more than 5% much less often, which has a rather negative effect on average expectations. Holding a higher level of education is associated with lower inflation expectations: the effect of the level of education is more pronounced in the CAMME survey (−2 pp) than in the CES (non-significant). In the CES, a high level of education is associated with many more responses between 0 and 5% (+20 pp) and with many fewer negative or zero responses, whereas in the CAMME survey, it is associated with fewer responses higher than 5% but more responses between 0 and 5% (+6 pp). Finally, income level has a negative effect on the

average and the dispersion of inflation expectations in both surveys: households with higher income less often respond zero or above 5% and more often respond between 0 and 5%.

As noted above, the dispersion of expectations largely reflects the dispersion of inflation perceptions between households. The effects of household characteristics documented for expectations are broadly in line with those obtained for perceptions (see Online Appendix S6). The results of Accardo *et al.* (2011) also show that gender, age or income have similar effects on quantitative perceptions of inflation in the CAMME survey as we obtained for expectations. Moreover, if the response in relation to inflation perception is added to the regressions, the effect of observable characteristics on expected inflation is greatly diminished.

3. How Do Household Expectations Vary Over the Period 2020-2021?

The years 2020 and 2021 were marked by several shocks that impacted the French economy. First of all, the COVID-19 epidemic led to three periods of lockdown of varying degrees of strictness, inducing a slowdown in production and a simultaneous drop in demand with potentially ambiguous effects on inflation. Then, during 2021, the gradual recovery in activity generated a surge in inflation linked to supply difficulties, stronger demand and rising energy prices. In this section, we document how inflation expectations have responded to these shocks and what lessons can be learned about the formation of household expectations.

3.1. Inflation Expectations Are Correlated With Actual Inflation and Perceived Inflation

Based on the individual responses to both surveys, we recalculate the balances of opinion using the European Commission method (see Online Appendix S1) and the average of the quantitative responses, for each month of the period. Figure IV shows the comparison of these aggregated variables with the development of the Harmonised Index of Consumer Prices (HICP) (IV-A) and shows the average of the quantitative responses by date (IV-B).
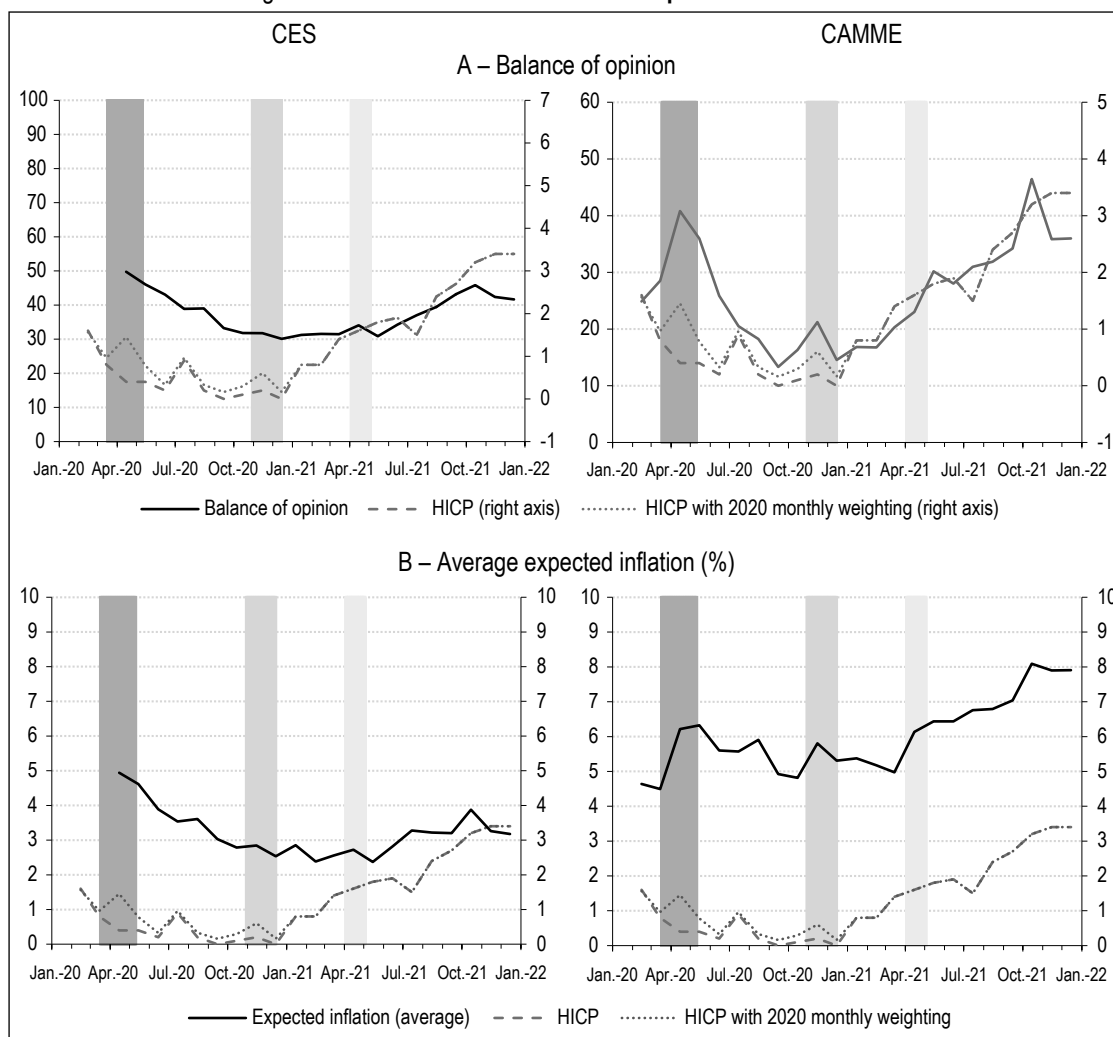
The aggregation of responses to qualitative and quantitative questions from the CAMME survey is globally correlated with current inflation (Figure IV): average inflation expectations and perceptions were stable in 2020 and then rose in 2021. However, the first lockdown in the spring of 2020 generated a temporary disconnect between what households expect and actual inflation. Indeed, during this first lockdown, which was also the strictest (see *infra*), the sudden and major change to the basket of consumer goods disrupted the measurement of inflation (Casteletti-Font *et al.*, 2021). Inflation is generally calculated as the price evolution associated with a fixed basket of goods, which is updated annually and cannot take into account major changes in the structure of the basket during the year. An alternative price index taking into account the distortion of the consumer basket shows that the usual measure of inflation had underestimated the inflation experienced by households by around 1 pp during the first lockdown (Casteletti-Font *et al.*, 2021), which could explain partly the disconnect between INSEE inflation and expected inflation. A measurement of inflation that takes into account the distortion of the basket indicates a rise in both inflation at the time of the first lockdown and in the inflation expected by households (see *infra* for the effect of lockdowns on inflation expectations). Finally, in line with the cross-sectional results presented earlier (see Section 2), the temporal correlation between perceived and expected inflation is strong over the period (see Online Appendix S9).[11]

The evolution of the balance of opinion and the average expectation measured based on the data from the CES gives a different picture (Figure IV). In particular, the correlation between these variables and actual inflation is lower than that obtained with the CAMME survey. During 2020, there was a gradual decrease in expected inflation. The learning effects (quantified in Section 2) have contributed to lower expected inflation as the number of survey waves increases for households that joined at the start the survey. Then, during 2021, expected inflation increases but less significantly than in the CAMME survey and the average expected inflation is even lower than the actual level of inflation at the end of the period. In total, in the CES, expected inflation reacts less strongly to changes in inflation, or with a delay, compared to what is observed in the CAMME survey. The lesser dispersion of responses between households and the smaller gap with actual inflation are associated with a lower sensitivity of expected inflation to actual inflation. Finally, perceived inflation and expected inflation over a three-year period are closely correlated with expected inflation over a one-year period (see Online Appendix S9).

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11. It can be noted, however, that while the first lockdown is associated with a drop in perceived inflation, perceived inflation then remained higher for several months after the first lockdown.

Figure IV – **HICP Inflation and inflation expectations 2020–2021**

CES — CAMME

A – Balance of opinion

Balance of opinion — — HICP (right axis) ········· HICP with 2020 monthly weighting (right axis)

B – Average expected inflation (%)

Expected inflation (average) — — HICP ········· HICP with 2020 monthly weighting

Notes: The balance of opinion of each qualitative question is obtained by calculating the difference between the number of positive responses and the number of negative responses. Differences in the level of balances of opinion between the surveys cannot be interpreted given the differences in the phrasing of the questions. Expected inflation averages are obtained from individual quantitative responses. The statistics are weighted by the weights available in the surveys. Greyed out areas represent periods of lockdown related to COVID-19. The HICP is the Harmonised Index of Consumer Prices (allowing comparisons of inflation rates between the countries of the Economic and Monetary Union), HICP inflation is calculated as the annual shift of this index.
Reading Note: The balance of opinion of households expecting an increase in prices is 40 in April 2020 in CAMME. Average expected inflation is 5% in April 2020 in CES.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

3.2. The COVID-19 Crisis

The COVID-19 crisis was a major shock during the period 2020-2021 but it also divided experts with regard to its nature: supply shock linked to the closures of "non-essential" sectors or demand shock linked to the slowdown in consumption, associated for some households with lower incomes or greater uncertainty. We will now examine how household inflation expectations responded to this shock.

We will link inflation expectations to the different lockdown periods by controlling the effects of socio-demographic characteristics and learning effects (Table 5). There were three lockdown periods established in 2020 and 2021.

The first lockdown, from 17 March to 11 May 2020, was very strict: "non-essential" shops and companies, places for socialising and retail shops (except pharmacies and food shops) and schools were closed and travel was restricted to the maximum extent possible. The second, from 30 October to 15 December 2020, was a little less strict: schools remained open and activity was able to continue in many sectors (construction, factories, agricultural sector and some public services) but travel was largely restricted. Finally, during the third lockdown, from 3 April to 3 May 2021, schools and non-essential businesses and places for socialising closed, remote working was relaxed and conditions for travel were restricted.

Table 5 – **Effects of lockdowns on household inflation expectations**

	(1) Expected inflation		(2) Higher than or equal to 5		(3) Between 0 and 5		(4) Equal to 0		(5) Negative	
A – CES										
1st lockdown	0.99***	(0.21)	6.98***	(1.09)	−1.44	(1.19)	−7.40***	(0.71)	0.01	(0.68)
2nd lockdown	−0.10	(0.19)	−0.44	(1.00)	−1.07	(1.14)	1.35	(0.83)	−0.23	(0.66)
3rd lockdown	0.30	(0.19)	0.47	(1.26)	−1.90	(1.35)	1.44	(0.98)	−0.18	(0.79)
Uncertainty	0.33***	(0.02)	2.60***	(0.09)	−0.72***	(0.11)	−1.81***	(0.11)	−0.59***	(0.08)
Learning effect	Yes		Yes		Yes		Yes		Yes	
N	40,820		40,820		40,820		40,820		40,820	
B – CAMME										
1st lockdown	1.00***	(0.26)	7.68***	(1.43)	−5.35***	(1.21)	−2.76**	(1.14)	0.70**	(0.32)
2nd lockdown	0.36	(0.25)	1.75	(1.44)	−5.10***		4.14***	(1.26)	−0.60***	(0.18)
3rd lockdown	−1.02***	(0.34)	−6.33***	(1.83)	−0.08	(1.77)	7.05***	(1.84)	0.14	(0.56)
Learning effect	Yes		Yes		Yes		Yes		Yes	
N	18,252		18,252		18,252		18,252		18,252	

Notes: Ordinary least squares in column (1), marginal effects estimated using the Logit model in columns (2) to (5). Robust standard errors in brackets. * $p<0.10$, ** $p<0.05$, *** $p<0.01$. The (unreported) control variables are gender, age, level of education, income and year. The variable explained in (2) is the variable indicative of inflation expectations higher than or equal to 5%. Same for columns (3) to (5).
Reading Note: Other things equal, during the first lockdown, the average inflation expectation increased by 1 pp in the CAMME survey.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

In both surveys, the first lockdown is associated with an increase in expected inflation of around 1 pp, while the second and third lockdowns have no concordant effects: no significant effect in the CES, a non-significant effect for the second lockdown and a negative effect for the third in the CAMME survey.

While average inflation expectations have risen sharply, disagreement between households is also at a higher level than during the pre-crisis period. The results presented in Table 5 indicate that the proportion of responses above 5% increased by 7 to 8 pp during the first lockdown, while the proportion of responses below or equal to 5% decreased by equivalent or greater proportions. Finally, in the CAMME survey, the proportion of price decreases increased significantly compared to its usual average (+0.7 pp vs 1% on average). In total, these two movements (more frequent high expectations and slightly more frequent low expectations) contributed to greatly increasing the dispersion of the distribution of expectations during the first lockdown.[12] These results suggest that the first lockdown greatly increased disagreement between households and indicate a strong heterogeneity in the signal perceived. This heterogeneity could be linked to the dispersion of price changes by product at this time, particularly increases in the prices of fresh products and lower petrol prices (Gautier *et al.*, 2020). A similar increase in disagreement between households has been observed in the United States since the onset of the pandemic (Armantier *et al.*, 2021; Weber *et al.,* 2022). In comparison, the effect of lockdowns on perceptions is close to 0 in the CES and negative for all three lockdowns in the CAMME survey, with a higher proportion of "stable price" responses (see Online Appendix S9).

3.3. Uncertainty and Aggregated Expectations

The scale and nature of the COVID-19 crisis has led to an unprecedented increase in uncertainty: uncertainty indicators from financial market data or surveys reached or exceeded their highest historical level in March and April 2020 (Altig *et al.*, 2020). How was this reflected in household inflation expectations? Two types of indicators are generally used to measure the degree of uncertainty in inflation expectations.

The new generation of surveys, of the CES type, makes it possible to measure uncertainty using "probabilistic" questions relating to predefined intervals (Bruine de Bruin *et al.*, 2011). In this context, individual uncertainty is the standard error of the modal values of each interval completed. Uncertainty measures a level of vagueness surrounding the expectation of a respondent. This variable is then aggregated to produce an uncertainty indicator for all households.

12. Results shown in Online Appendix S6 confirms this finding based on the qualitative data of the survey. During the first lockdown, the proportion of households reporting a sharp increase in prices rose sharply (+22 pp for the CES and +9 pp for the CAMME survey) which was not observed during the subsequent lockdowns.

A second type of indicator is constructed from responses that are multiples of 5% for the quantitative estimate of expected inflation from the surveys; however, this variable is an indirect and approximate measurement of uncertainty. Binder (2017) shows, in the case of the University of Michigan's Survey of Consumers, that these round figures correspond to the responses of uncertain households.[13] Reiche & Meyler (2022), in the case of the euro area, or Binder (2017), in the United States, see a significant increase in the proportion of uncertain respondents at the time of the 2008-2009 financial crisis. The CES produces both types of indicator and appears to indicate that they are closely correlated over time (Figure V). If individual uncertainty is introduced as a determinant of the likelihood of expecting inflation above 5%, the effect is positive and significant (Table 5-A).

The measurement of uncertainty regarding inflation in the CES and in the CAMME survey give different signals over the period 2020-2021. In the CAMME survey, the uncertainty approximated by the proportion of responses that are multiples of 5 increased sharply during the first lockdown, reaching more than 40%, while actual inflation was low and gradually decreased. For comparison, Andrade *et al.* (2021) obtain an average proportion of multiples of 5 of about 25% over the period 2004-2018 and a maximum of close to 40% in 2008-2009, when inflation was around 3 to 4% in France. Starting in 2021,

this proportion again rose steadily, reaching a historic high (50%), but in a context of higher inflation. The increase in the proportion of multiples of 5 mechanically supported the dynamics of aggregated expectations.

In the CES, the proportion of responses that are multiples of 5 is lower than in the CAMME survey, which is also linked with the lowest dispersion of responses described above. Both measurements indicate that uncertainty is at its maximum during the first lockdown and then decreases during 2020. However, learning effects contribute strongly to this decrease. Then, both indicators increase from 2021, but only slightly. A higher level of individual uncertainty is associated with a higher level of expected inflation (cf. Table 5-A) and this requires a higher probability of expecting inflation above 5% and a lower probability of reporting a low rise or price stability.

3.4. The Link Between Economic Activity, Unemployment and Expected Inflation

Based on the two surveys, we describe how households perceived the relationship between price and activity over the period 2020-2021,

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13. *A multiple of five does not systematically indicate uncertain response behaviour. For example, in the 1990s, when inflation was close to 5%, an expectation of 5% could be a certain estimate. Binder (2017) proposes a statistical method identifying the proportion of certain households and the proportion of uncertain households.*

Figure V – **Changes in household uncertainty (%)**
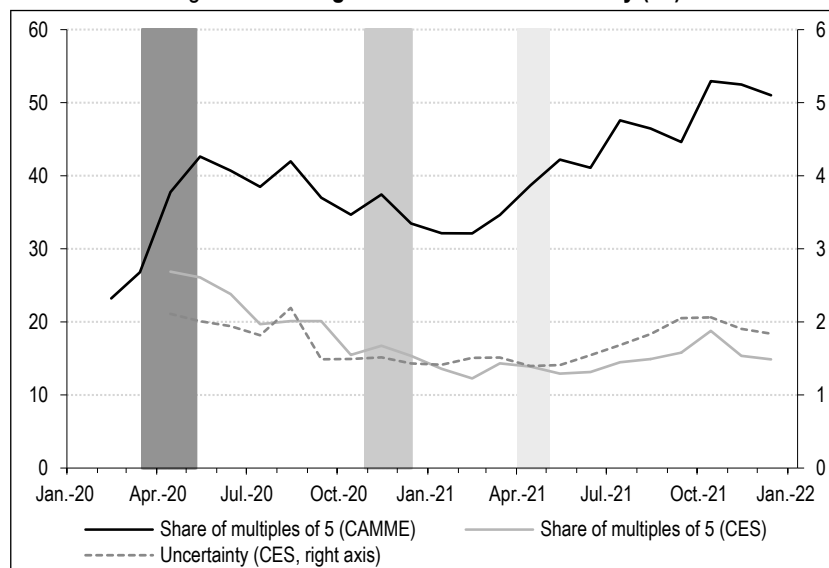
Notes: Individual uncertainty is equal to the standard error of the distribution of individual responses to the probabilistic question (see Online Appendix S3), the aggregate indicator is the date-weighted average of this measurement. The proportion of multiples of 5 (as a %) is calculated as the ratio of the number of quantitative responses (excluding 0) that are multiples of 5% out of the total number of responses. The proportions are weighted.
Reading Note: Almost 40% of households may be considered uncertain in the CAMME survey in April 2020.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

Table 6 – **Household expected inflation and the actual economy**

		(1) Expected inflation		(2) Higher than or equal to 5		(3) Between 0 and 5		(4) Equal to 0		(5) Negative	
CES											
Expected growth		−0.10***	(0.01)	−0.57***	(0.00)	0.01	(0.00)	0.77***	(0.00)	−0.01	(0.00)
Expected unemployment		0.17***	(0.01)	0.65***	(0.00)	−0.26***	(0.00)	−0.26***	(0.00)	−0.69***	(0.00)
Learning effect		Yes		Yes		Yes		Yes		Yes	
Temporal effect		Yes		Yes		Yes		Yes		Yes	
N		47,979		47,979		47,979		47,979		47,979	
CAMME											
	Increase	−2.77***	(0.18)	−16.85***	(0.01)	6.73***	(0.01)	9.21***	(0.01)	0.84***	(0.23)
Expected growth	Stability	−2.19***	(0.17)	−11.81***	(0.01)	2.13**	(0.01)	9.64***	(0.01)	−0.11	(0.17)
	Decrease	*Ref.*		*Ref.*		*Ref.*		*Ref.*		*Ref.*	
	Increase	1.50***	(0.21)	6.92***	(0.01)	−0.43	(0.01)	−6.06***	(0.01)	−0.72***	(0.27)
Expected unemployment	Stability	−0.12	(0.20)	0.10	(0.01)	−0.93	(0.01)	1.08	(0.01)	−0.37	(0.31)
	Decrease	*Ref.*		*Ref.*		*Ref.*		*Ref.*		*Ref.*	
Learning effect		Yes		Yes		Yes		Yes		Yes	
Temporal effect		Yes		Yes		Yes		Yes		Yes	
N		17,741		17,741		17,741		17,741		17,741	

Notes: Cf. Table 5.
Reading Note: One additional pp of unemployment is associated on average with 0.17 pp of inflation in the CES.
Sources and Coverage: INSEE, CAMME survey (Feb. 2020-Dec. 2021) and ECB, CES (April 2020-Dec. 2021). Metropolitan France, ordinary households.

when experts' opinions differed on the nature of shocks affecting the economy. In both surveys, the results of regressions at individual level show that lower expected activity or higher unemployment are associated with higher inflation (Table 6). In the CES, a 1 pp decrease in the growth expected by households leads to a 0.1 pp increase in their inflation expectations, while an additional point for unemployment is associated on average with an additional 0.17 pp for inflation. Similar results are obtained from the qualitative expected unemployment and activity variables from the CAMME survey. Looking at the effects of expected growth or unemployment along the distribution of expectations, the negative correlation between growth and inflation is particularly strong for high expectations (see Online Appendix S8). In other words, households have a stagflationist view of the economy in which shocks to supply are dominant. This characterisation is important because households that expect higher inflation could reduce their spending rather than increasing it (Candia *et al.*, 2020).

Interpreting the pandemic as a supply shock leads households to expect higher inflation. Thus, during the first lockdown, the expectation of loss of activity by households is 4 pp in the CES, which corresponds to 0.4 pp of additional expected inflation. Similarly, the proportion of households that believe that the economic situation will deteriorate rose from a third to more than 80% between February and April 2020 in the CAMME survey, which would correspond to an increase in inflation of around one pp (i.e. +50 pp for the proportion of households expecting a decrease in activity, multiplied by a marginal effect close to 2, see Table 6-B). Overall, the deterioration of the general outlook for the economic environment contributed, in both surveys, to increasing inflation expectations, which would be consistent with the effect of a supply shock.

* *
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In this article, we document several stylised facts relating to expected inflation in France over the period 2020-2021 using two household surveys. First, average expected inflation is higher than inflation measured by statistical institutes or predicted by economic forecasters. Household inflation expectations are then characterised by a high dispersion, which largely reflects an initial dispersion of perceptions of price developments. The two surveys used in this study, however, give a rather different signal on the extent of bias and dispersion of expectations, which could be explained by the method of collection or the phrasing of the questions.

The analysis of the period 2020-2021 provides several pieces of information on the formation of expectations: they are closely correlated with

actual inflation; only the first lockdown had a significant and positive effect on expectations, linked with the health measures put in place and the increase in uncertainty. In addition, households associate high inflation more with high unemployment, suggesting that households have a stagflationist view of the economy.

The increases in the prices of raw materials seen in early 2022 continue to keep inflation at a high level in France and Europe. One of the important issues for monetary policy is to understand how increases in the prices of raw materials will affect the inflation expectations of economic actors, since they will then affect aggregate demand, wage bargaining and thus the persistence of inflation. □

Link to the Online Appendix: https://www.insee.fr/en/statistiques/fichier/6530556/ES534-35_Gautier-Montornes_Online-Appendix.pdf

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