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

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S1 – Difference Between the Calculation of the Balance of Opinion by INSEE and by the European Commission

The monthly household's survey CAMME published by INSEE and aggregated at the European level by the European Commission (EC) provides the traditional measure of their inflation expectations. However, data published nationally favor a qualitative measurement of inflation expectations (increase more rapidly, increase at the same rate, fall, etc.). The quantitative measure of expectations is only quarterly published and at European Union or Euro area level.

From the qualitative responses, INSEE and the European Commission both compute balance of opinions statistics, summarizing the answers on inflation expectations and perceptions. The two variables are a linear combination of the percentages of response to each of the qualitative modalities of the survey. However, the formula for calculating the balance of opinion is different between the European Commission and INSEE.

The European Commission uses the following formula:
$$\text{Balance} = PP + 0.5 \cdot P - 0.5 \cdot M - MM$$
where PP is the share of households responding "Increase more rapidly", P the share of households responding "Increase at the same rate", M the share of households anticipating stable prices and MM the share of households anticipating a fall in prices. The share of households anticipating "Increase at a slower rate" (E) is not used in the formula and is considered as neutral.

On average over the period 1985-2021, the average share of responses on inflation expectations for France are as follows: 12% of households anticipate that prices will increase more rapidly (PP), 39% at the same rate (P), 13% at a lower rate (E), 29% that prices will remain stable (M) and 1% that they will fall (MM), the remaining 6% do not respond to the question. These shares lead to an average balance statistics over the period of +15 points and the change in the balance can be interpreted as a deviation from this trend.

On the other hand, INSEE uses the following formula:
$$\text{Balance} = PP - E - M - MM$$

INSEE considers that only the response "increases more rapidly" (PP) as contributing positively to the balance, the moderate increase (P) is a neutral response and that the other three (slight increase, price stability and fall) enters negatively. Another difference with the EC method is that in the INSEE method, all the qualitative modalities contribute identically to the balance (i.e. with a coefficient of 1 vs. 0.5 for some modalities of answer in the EC method). The average balance of opinion for INSEE would be around −30 pp.

Given the differences in methods, there are differences in levels between the two series (Figure S1): the INSEE series is on average negative around −30 points while the EC series for France is positive around +15 points. However, this difference has no implication in terms of interpretation: these two series should be read in deviations from their long-term average (represented by the black line) and are qualitative by nature. These differences reflect average differences in the distribution of household responses to the different modalities.

However, variation over time can also differ between the two series more or less strongly, but the peaks of the two series are quite synchronized since the starting date. In addition, INSEE publishes the seasonally adjusted series, which generates a gap of a few points compared to the series in Figure S1.

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Figure S1 – **Inflation expectations: comparison between the "European Commission" method (left scale) and "INSEE" (right scale), Balance statistics in points - France**
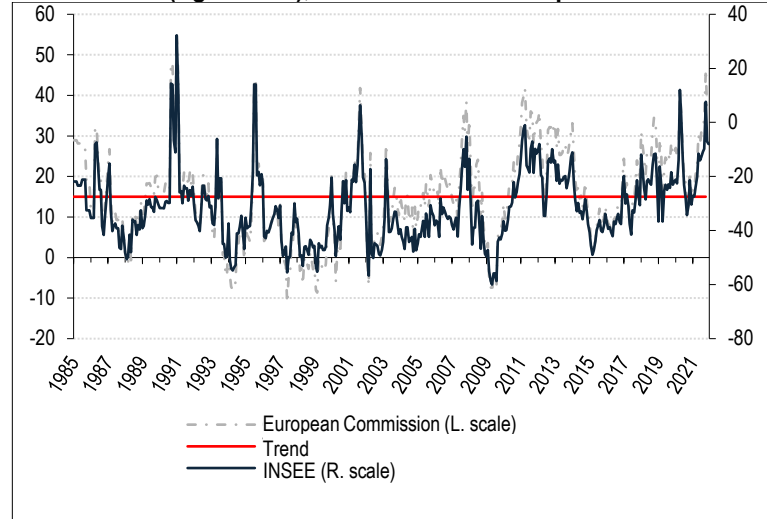
Source : INSEE, European Commisssion, CAMME survey

S2 – Response to the Quantitative Question on Expected Inflation

The response rate to the quantitative question of the CAMME survey is relatively low (Table S2). It is difficult to know the reasons for this non-response, but inflation is an aggregate concept that is poorly understood by households and difficult to grasp. This problem can be greater in a period of low inflation when households pay relatively little attention to the prices. Figure S2 compares the average rate of non-response to the quantitative question and compares it to the share of households giving a multiple response of 5% (excluding 0) in order to determine whether the non-response reflects a "fundamental" uncertainty about the answer. The two series are weakly correlated, the non-response rate decreases when inflation is higher in 2021, which could reflect that households are more attentive to inflation or receive more information and therefore respond more easily to this question.

Table S2 – **Response rate**

	Response rate (%)
Male	41.3
18-34 years	50.4
35-54 years	49.6
55-70 years	49.7
71 and over	45.5
Primary	38.6
Secondary	34.4
Tertiary	43.8
Income below 1st quartile	47.7
Between 1st and 2nd quartile	40.3
Between 2nd and 3rd quartile	43.3
Income above 3rd quartile	48.4
Male	51.9

Source et Coverage : INSEE, CAMME survey, Metropolitan France, Households.

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Figure S2 – **Share of non-response and multiples of "five" (in %)**
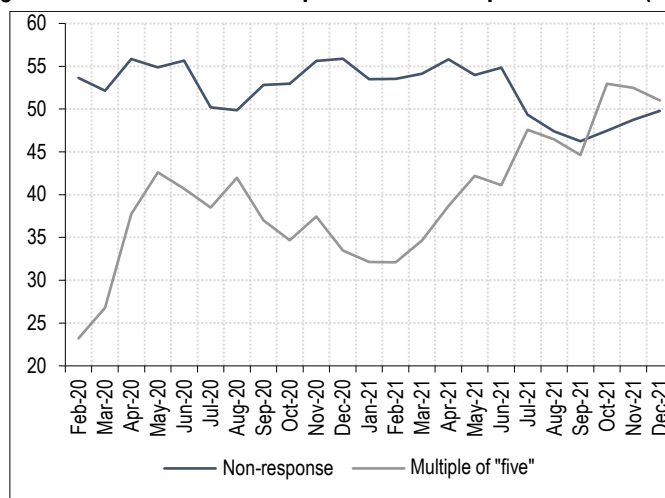
Note : The black line represents the share of households that did not give an answer to the quantitative question on the future prices developments (in %); the gray line represents the share of multiple responses of 5% (excluding 0) (in %).
Source and scope: INSEE, CAMME survey, Metropolitan France, Households.

S3 – "Probabilistic" Question on Expected Inflation

Now we would like you to think about how much prices in general in the country you currently live in are likely to change in 12 months from now. We realize that this question may take a little more effort. Below you see 8 possible ways in which prices could change. Please distribute 100 points among them, to indicate how likely you think it is that each price change will happen. The sum of the points you allocate should total to 100.

You can allocate points by typing a percentage in each box. (Note that your answers should sum to 100 – if your sum exceeds 100, you should first decrease the points again in one option before you can add points in another). Prices will increase by at least 8%
Prices will increase by at least 4%, but less than 8%
Prices will increase by at least 2%, but less than 4%
Prices will increase by less than 2%
Prices will fall by less than 2%
Prices will fall by at least 2%, but less than 4%
Prices will fall by at least 4%, but less than 8%
Prices will fall by at least 8%

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## S4 – Inflation Perceptions and Expectations: CES-CAMME Comparison (February 2020-December 2021)

Table S4

In %									
Intervals	[-100,-10[	[-10,-5[	[-5,-2[	[-2.0[	0	]0.2]	]2.5]	]5.10]	]10.100]
	CES								
Perceptions	0.53	0.93	1.84	3.33	26.27	16.51	25.68	12.85	12.05
Expectations	0.48	1.00	1.60	3.64	26.68	16.09	25.63	13.88	11.02
	CES survey corrected for the learning effect								
Perceptions	0.75	0.82	1.95	3.16	20.41	14.76	28.27	14.37	15.52
Expectations	0.62	1.07	2.00	3.73	20.71	14.30	26.76	16.16	14.66
	CAMME								
Perceptions	0.08	0.03	0.18	0.13	17.13	5.63	22.17	20.82	33.82
Expectations	0.22	0.23	0.47	0.24	24.78	5.53	21.67	19.70	27.15

Reading Note: In the CAMME survey, on average over the period, 24.8% of respondents expect zero inflation.
Source and scope: INSEE, CAMME survey (Feb. 2020-Dec. 2021), ECB, CES (April 2020-Dec. 2021), Metropolitan France, Households.

S5 – Learning-Through Survey Effect over the Period 2004-2014

Figure S5 – **Change in expected inflation by wave of responses to the CAMME survey**
(In percentage points)
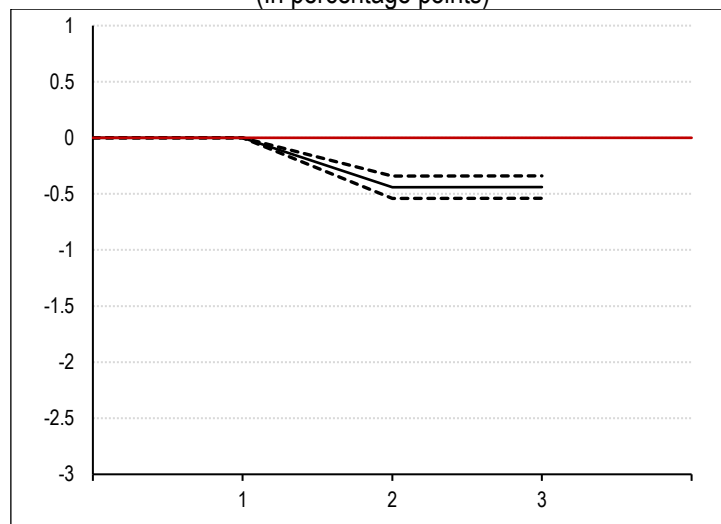
S6 – Individuals Determinants of Perceived Inflation

Table S6 – **Determinants of price perceptions**

		(1) Perceived inflation	(2) ≥ 5%	(3) Between 0 and 5%	(4) Equal to 0	(5) Negative
A – CES						
Gender (ref. Man)	Woman	0.74***	5.45***	−2.77***	−0.75*	−1.87***
		(0.06)	(0.40)	(0.45)	(0.41)	(0.23)
	35-54 years	0.37***	2.49***	6.22***	−6.89***	−1.80***
		(0.08)	(0.48)	(0.55)	(0.52)	(0.32)
Age (ref . 18-34 years)	55-70 years	0.59***	4.41***	13.36***	−12.36***	−5.35***
		(0.09)	(0.55)	(0.62)	(0.56)	(0.32)
	71 and over	0.35***	1.99**	13.90***	−7.84***	−7.20***
		(0.12)	(0.94)	(1.07)	(0.95)	(0.38)
	Secondary	−0.13	−3.33***	10.87***	−1.84**	−6.05***
Education (ref. Primary)		(0.14)	(0.79)	(0.79)	(0.81)	(0.58)
	Tertiary	−0.21	−5.10***	18.43***	−5.51***	−8.07***
		(0.13)	(0.72)	(0.71)	(0.74)	(0.55)
	Between 1st and	−1.16***	−5.67***	2.21***	0.07	3.38***
		(0.11)	(0.63)	(0.68)	(0.62)	(0.33)
Income (ref. lower than 1st quartile)	Between 2nd and	−1.28***	−8.55***	7.15***	−2.37***	3.86***
		(0.10)	(0.58)	(0.62)	(0.56)	(0.30)
	Income above 3rd	−1.48***	−9.91***	11.53***	−2.66***	0.67**
		(0.11)	(0.66)	(0.72)	(0.66)	(0.33)
	Constant	4.44***				
		(0.24)				
	Learning effect	Yes	Yes	Yes	Yes	Yes
	Time	Yes	Yes	Yes	Yes	Yes
	N	46,953	46,953	46,953	46,953	46,953
B – CAMME						
Gender (ref. Man)	Woman	1.94***	8.66***	−7.76***	−0.69	−0.31***
		(0.14)	(0.69)	(0.64)	(0.53)	(0.08)
	35-54 years	−0.46*	−0.44	4.56***	−3.65***	−0.33*
		(0.25)	(1.05)	(0.90)	(0.84)	(0.17)
Age (ref . 18-34 years)	55-70 years	−1.94***	−8.60***	13.12***	−4.16***	−0.39**
		(0.25)	(1.08)	(0.95)	(0.87)	(0.18)
	71 and over	−3.35***	−15.07***	16.21***	−0.65	−0.34*
		(0.26)	(1.19)	(1.09)	(0.98)	(0.19)
	Secondary	−0.02	−1.50	2.02	−0.75	−0.09
Education (ref. Primary)		(0.45)	(1.73)	(1.60)	(1.21)	(0.24)
	Tertiary	−2.60***	−10.35***	4.95***	4.85***	0.05
		(0.43)	(1.70)	(1.56)	(1.20)	(0.23)
	Between 1st and	−1.81***	−4.92***	4.26***	0.84	−0.17
		(0.23)	(0.98)	(0.88)	(0.72)	(0.15)
Income (ref. lower than 1st quartile)	Between 2nd and	−2.14***	−6.21***	4.68***	1.65**	−0.22
		(0.23)	(0.96)	(0.87)	(0.71)	(0.14)
	Income above 3rd	−3.97***	−17.06***	11.06***	5.92***	−0.11
		(0.21)	(0.97)	(0.90)	(0.75)	(0.14)
	Constant	9.99***				
		(0.58)				
	Learning effect	Yes	Yes	Yes	Yes	Yes
	Time	Yes	Yes	Yes	Yes	Yes
	N	21,139	21,139	21,139	21,139	21,139

Note: Column (1) ordinary least squares. Columns (2) to (5): marginal effects in % estimated by the Logit model. Robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p <0.01. The control variables not reported are sex, age, level of education and income. The dependent variable in (2) to (5) is the indicator variable of inflation expectations greater than or equal to 5%.
Source and scope: INSEE, CAMME survey (Feb. 2020-Dec. 2021), ECB, CES (April 2020-Dec. 2021), Metropolitan France, Households.

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S7 – Effects of Lockdowns on Inflation Expectations

Table S7-1 – **Qualitative responses**

A – CES

	(1) Huge increase	(2) Increase	(3) Unchanged	(4) Decrease	(5) Sharp drop
1st lockdown	9.23***	−4.45***	−4.59***	1.64***	−1.83***
	(0.98)	(1.09)	(0.91)	(0.49)	(0.42)
2nd lockdown	−0.26	0.29	−0.28	−0.57	0.71
	(0.78)	(1.06)	(0.96)	(0.40)	(0.54)
3rd lockdown	−2.38***	1.85	0.55	0.01	−0.02
	(0.92)	(1.27)	(1.17)	(0.47)	(0.62)
Learning effect	Yes	Yes	Yes	Yes	Yes
N	47,982	47,982	47,982	47,982	47,982

B – CAMME

	(1) Faster	(2) At the same pace	(3) Less fast	(4) Stationary	(5) Decrease
1st lockdown	22.09***	−14.10***	−4.01***	−5.58***	0.85***
	(0.91)	(0.90)	(0.54)	(0.81)	(0.27)
2nd lockdown	1.21*	−5.01***	−1.07*	4.60***	−0.21
	(0.72)	(0.94)	(0.60)	(0.89)	(0.20)
3rd lockdown	−1.42	−4.77***	0.61	5.04***	−0.18
	(1.02)	(1.26)	(0.84)	(1.14)	(0.18)
Learning effect	Yes	Yes	Yes	Yes	Yes
N	38,265	38,265	38,265	38,265	38,265

Note: Ordinary least squares. Robust standard errors in parentheses. The demographic controls are gender, age, and education level.
* p < 0.10, ** p < 0.05, *** p <0.01. The reference year is 2020.
Source and scope: INSEE, CAMME survey (Feb. 2020-Dec. 2021), ECB, CES (April 2020-Dec. 2021), Metropolitan France, Households.

Table S7-2 – **Quantitative responses**

A – CES

	(1) Perceived inflation	(2) Sup. or equal to 5	(3) Between 0 and 5	(4) Equal to zero	(5) Negative
1st lockdown	−0.04	−1.01	3.60***	−1.51	−1.11**
	(0.18)	(0.88)	(1.10)	(0.99)	(0.53)
2nd lockdown	−0.44***	−2.52***	−1.49	3.93***	−0.16
	(0.16)	(0.97)	(1.17)	(1.07)	(0.64)
3rd lockdown	0.09	−1.07	−2.01	2.04*	0.79
	(0.18)	(1.14)	(1.25)	(1.13)	(0.73)
Learning effect	Yes	Yes	Yes	Yes	Yes
N	46,953	46,953	46,953	46,953	46,953

B – CAMME

	(1)	(2)	(3)	(4)	(5)
1st lockdown	−1.39***	−8.22***	0.15	7.52***	−0.11
	(0.24)	(1.33)	(1.20)	(1.09)	(0.13)
2nd lockdown	−0.81***	−5.23***	−5.70***	10.10***	0.26
	(0.25)	(1.33)	(1.11)	(1.14)	(0.21)
3rd lockdown	−1.13***	−8.79***	−1.79	11.55***	−0.08
	(0.35)	(1.75)	(1.61)	(1.65)	(0.21)
Learning effect	Yes	Yes	Yes	Yes	Yes
N	21,139	21,139	21,139	21,139	21,139

Note: Column (1) ordinary least squares. Columns (2) to (5) Marginal effects estimated by the Logit model. Robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p <0.01. Control variables not reported are sex, age, level of education, income and year. The dependent variable in (2) to (5) is the indicator variable of inflation expectations greater than or equal to 5%. All other things being equal, during the first lockdown, the average inflation expectation increases by 1 point in the CAMME survey
Source and scope: INSEE, CAMME survey (Feb. 2020-Dec. 2021), ECB, CES (April 2020-Dec. 2021), Metropolitan France, Households.

S8 – Expected Inflation and the Real Economy

Question CES

What do you think will be the unemployment rate 12 months from now in the country you currently live in? Please give your best guess in percentage terms.

Question CAMME

How do you expect the number of people unemployed in this country will change over the next 12 months?
- Increase sharply
- Increase slightly
- Remain the same
- Fall slightly
- Fall sharply
- Don't Know

Figure S8 – **Expected inflation and real economy – CES survey**
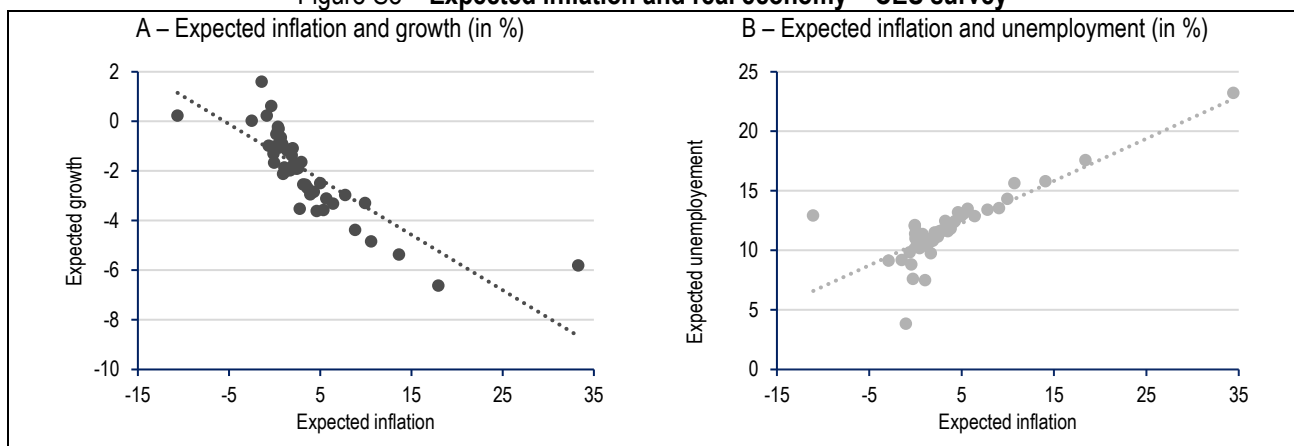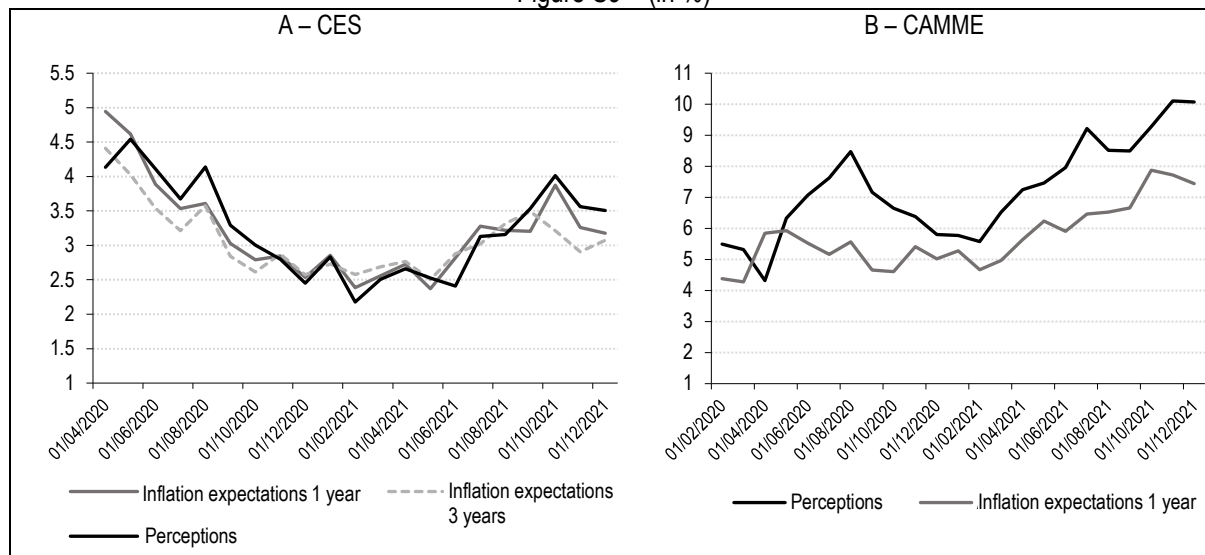

Note: A Binned scatterplot groups the x-axis variable into equal-sized bins, computes the mean of the x-axis and y-axis variables within each bin.
Source and scope: INSEE, CAMME survey (Feb. 2020-Dec. 2021), ECB, CES (April 2020-Dec. 2021), Metropolitan France, Households.

S9 – Changes in Price Perceptions and Expectations

Figure S9 – (in %)

Note: Means are computed from individual quantitative responses. The statistics are weighted with the survey weights.
Source and scope: INSEE, CAMME survey (Feb. 2020-Dec. 2021), ECB, CES (April 2020-Dec. 2021), Metropolitan France, Households.