

CHANGES IN CONSUMER INFLATION EXPECTATIONS IN RESPONSE TO THE RECENT RISE IN PRICES AND THE WAR IN UKRAINE

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Inflation has soared globally since early 2021. This rise has fed through, to differing degrees, to economic agents' medium and long-term inflation expectations. For instance, financial market-based long-term inflation compensation has increased continuously during this period in both the euro area and the United States (see Chart 1). Professional forecasters' long-term inflation expectations have also risen (to 2% in the euro area and to 3% in the United States).

Leaving these measures to one side, this box focuses on recent changes in consumer inflation expectations. Monitoring these expectations is particularly important from the monetary policy conduct standpoint. Indeed, they influence employees' demands for wage increases and, the more such increases are passed through to the prices of companies' goods and services, future inflation developments as well. In addition, these expectations also affect household consumption and investment decisions, with the ensuing knock-on effect on aggregate economic activity and, ultimately, once again, inflation.

Charts 2 and 3 highlight that since mid-2021 consumer inflation expectations have risen noticeably both in the United States and in the euro area. The increase has been particularly sharp in the euro area since the start of Russia's invasion of Ukraine at the end of February.

Drawing on granular data from the European Central Bank's monthly Consumer Expectations Survey (CES) of more than 10,000 respondents who are representative of the population of the six largest euro area countries, it is possible to analyse how the exposure of different types of households to energy prices and the deterioration in the economic outlook induced by the war in Ukraine have recently influenced euro area consumer inflation expectations. In this regard, at a time when the increase in inflation in recent months has largely been due to the rise in energy prices, the households most exposed to such higher prices can be expected to have adjusted more sharply their future inflation expectations. Likewise, it could also be the

case that, as certain papers suggest,¹ the future inflation perceptions of the households with a more pessimistic economic outlook have risen more sharply, potentially compounding the adverse effects of the recent slowdown in activity on short and medium-term growth and hindering the task of economic policy.

Chart 4 depicts, by consumers' exposure to rising energy prices, the changes in euro area consumer inflation expectations three years ahead. To do so, households are divided on the basis of their percentage of spending, in October 2021, on transport and basic utilities – mainly electricity, gas and other fuels –, distinguishing between the most exposed 30% of households (i.e. with a greater share of spending on these items) and the remaining 70%. In this regard, it should be highlighted that, in general, the group of households most exposed to the higher energy prices have a lower level of income² and, in the current inflationary episode, appear to be experiencing higher average inflation.³

Up to mid-2021, both types of households had similar expectations for future inflation (see Chart 4). However, from 2021 Q3 onwards, the inflation outlook of the households most exposed to the increase in energy prices has risen more sharply. This trend became more pronounced following Russia's invasion of Ukraine. This group of households is also currently more uncertain about future inflation developments (see Chart 5).

As mentioned above, the deterioration in the economic outlook triggered by the outbreak of the war in Ukraine could have impacted – possibly unevenly – medium-term consumer inflation expectations. In this regard, Chart 6 depicts, for each month of the period July 2021-April 2022, the estimated relationship between each household's revised three-years-ahead inflation expectations and their revised economic outlook for the next 12 months. In contrast to what is observed in the rest of the period, precisely from March 2022, after the war broke out, there is a negative and statistically significant correlation between the variables analysed. In other words, between

1 See S. Tsiaplias (2021), "Consumer inflation expectations, income changes and economic downturns", *Journal of Applied Econometrics*, Vol. 36(6), pp. 784-807.

2 The level of inflation expectations largely depends on household characteristics. Specifically, lower-income households, older households and women tend to have higher inflation expectations. See K. Bańkowska et al. (2021), "ECB Consumer Expectations Survey: an overview and first evaluation", *ECB Occasional Paper Series*, No 287.

3 See Chapter 3 of the Banco de España *Annual Report 2021*.

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Russia launching its invasion of Ukraine and the end of the period analysed, the consumers who revised their medium-term inflation forecast upwards the most were, on average, those who became most pessimistic about the economic outlook.

In sum, this box highlights that the recent rise in euro area consumer inflation expectations is in part influenced by households' exposure to the increase in energy prices and by their pessimism about future economic developments.

Chart 1
INFLATION SWAPS MARKET-BASED MEASURES OF INFLATION EXPECTATIONS (a)

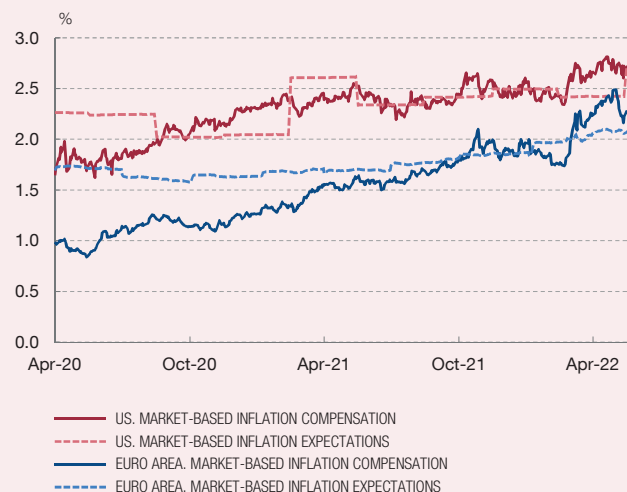


Chart 2
US CONSUMER INFLATION EXPECTATIONS (MEDIAN)

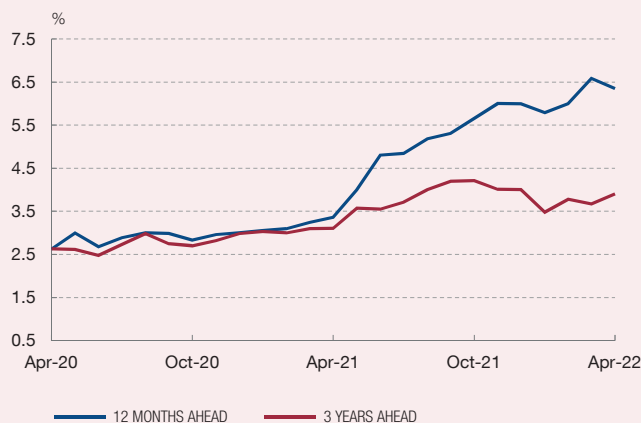


Chart 3
EURO AREA CONSUMER INFLATION EXPECTATIONS

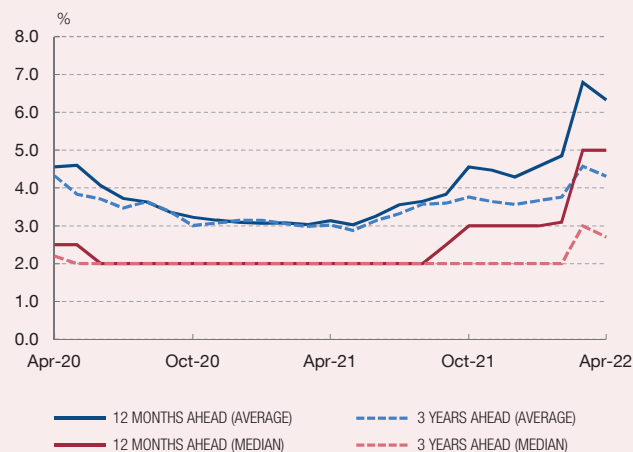
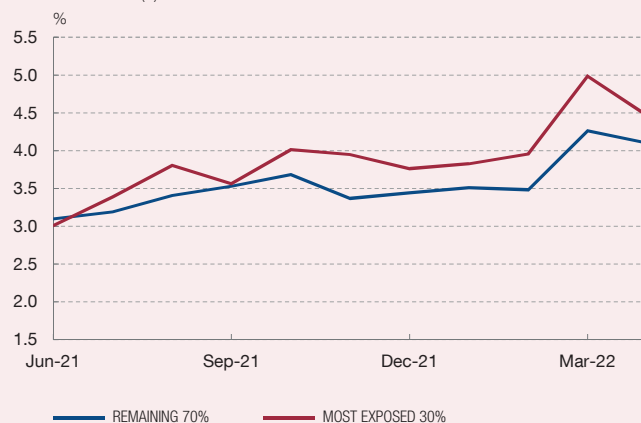


Chart 4
AVERAGE INFLATION EXPECTATIONS THREE YEARS AHEAD, BY TYPE OF HOUSEHOLD (b)



SOURCES: CES (ECB), Survey of Professional Forecasters (ECB and Federal Reserve Bank of Philadelphia), Bloomberg and own calculations.

- a Five-year, five-year forward inflation compensation, daily data to 27 May 2022. The compensation for inflation priced into inflation swaps is, for each horizon, broken down into the sum of the inflation expectations and the risk premium by term, using a model that estimates the term structure of inflation using daily data on inflation swaps at several time horizons (for the euro area or for the United States), monthly HICP data for the euro area (CPI for the United States) and quarterly data on one, two and five-year inflation expectations from the Survey of Professional Forecasters conducted by the ECB (Federal Reserve Bank of Philadelphia in the United States). See R. Gimeno and E. Ortega (2022), "Modelling inflation expectations: the value of mixing information and frequencies", *Working Papers*, Banco de España, forthcoming.
- b The most exposed households are those whose percentage of consumer spending on transport and basic utilities is in the upper 30% of the distribution. The findings are similar using country-specific thresholds and other percentages.

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Chart 5
PROBABILITY DISTRIBUTION OF CONSUMER INFLATION EXPECTATIONS THREE YEARS AHEAD, BY EXPOSURE (a)

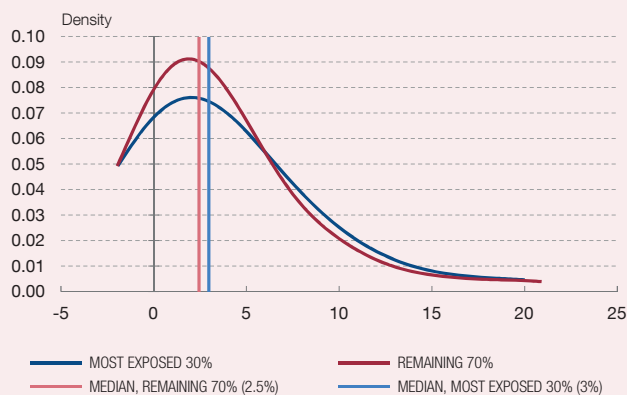
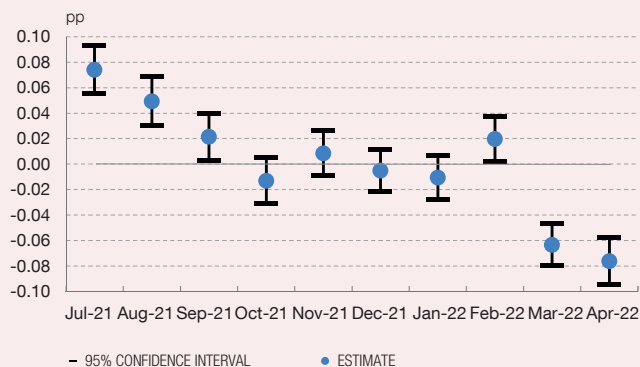


Chart 6
RELATIONSHIP BETWEEN REVISED INFLATION AND GROWTH EXPECTATIONS (b)



SOURCES: CES (ECB), Survey of Professional Forecasters (ECB and Federal Reserve Bank of Philadelphia), Bloomberg and own calculations.

- a The most exposed households are those whose percentage of consumer spending on transport and basic utilities is in the upper 30% of the distribution. The findings are similar using country-specific thresholds and other percentages.
- b The chart shows the coefficient of a regression on the change in consumer inflation expectations three years ahead and the growth expectations for the following twelve months.