Understanding of Inflation

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In a seminal paper, Shiller (1997) tried to "*understand, using public survey methods, why people are so concerned and dismayed by inflation, the increase in the price level, and decline in value of money.*" In the following 24 years of price quiescence, our understanding of people's perceptions and reasoning about inflation has made little progress[1]. Likewise, the small average price increases experienced over the same period by most households have probably not been a major concern. However, after the Covid-19 pandemic, inflation made its return as a salient policy issue around the world. Confronted with sharp price increases, people have been worrying once again about a worsening of living standards and the instability of the macroeconomic environment. It is noteworthy that, despite being generally poorly understood, inflation seems to be pervasive in people's minds. Figure 1 shows how "inflation" became much more searched on Google compared to other buzzwords such as "immigration" or "climate" from the beginning of the pandemic, underlying the salience of the issue.

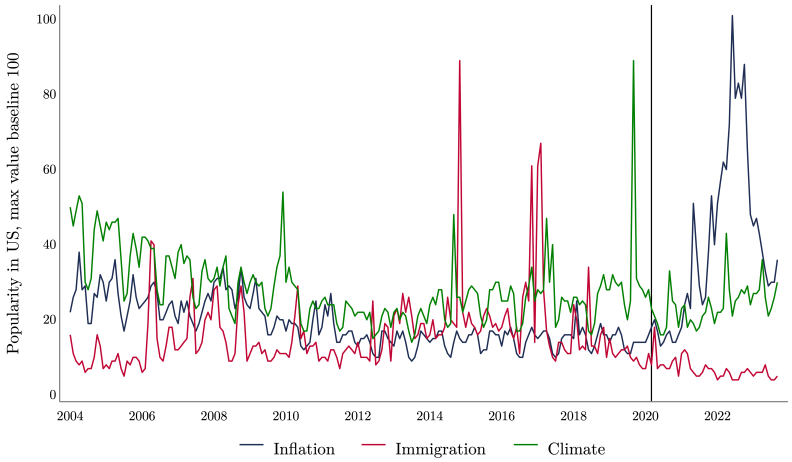


Figure 1: Google trends in the US

Notes. US Google searches in the News section between January 2004 and September 2023, black line at March 2020.

Motivated by the recent resurgence of inflation as a pervasive issue in people's lives, this project sheds light on how the general public perceives and reasons about inflation. We design and run new large-scale surveys in the US to answer three questions: *i)* How do people reason about the causes of inflation? *ii)* What are the perceived personal, efficiency, distributional, and political impacts of significant price increases? *iii)* What are people's preferred policies to achieve price stability?

Economists tend to be skeptical of surveys, and we often prefer a revealed preference approach. Nevertheless, our traditional approach faces many challenges when trying to uncover the reasoning underlying people's policy preferences. Surveys allow us to measure and analyze people's thinking more directly, which is exactly what is needed to answer our research questions.

It is useful to start from a more thorough description of our research objectives. First, we study whether people understand and how they reason about the causes of inflation. We study which economic phenomena

[1] Although the literature on inflation expectations may look as an exception to this claim, the focus of this project is different. We are interested in people's reasoning about the causes, effects, and policy implications of inflationary phenomena rather than in their predictions of the future evolution of prices

people think of as inflationary, and we trace out their full reasoning about the propagation of the effects of these phenomena in the economy (e.g., we go from an oil shock to its effects on unemployment). This allows us to appraise whether people think about the causes of inflation in simplistic terms, or rather as a complex interplay of different forces in equilibrium. In turn, this will be informative on the types of narratives that people use to rationalize inflationary phenomena. Overall, eliciting people's perceptions about the causes of inflation and their functioning is fundamental for two reasons: first, it will allow us to correlate the reasoning about the causes of inflation with different perceptions of the effects of inflation, and also with different policy preferences. Second, this will inform the type of models we can write when it comes to people's understanding of inflationary shocks.
Second, we study the perceived effects of inflation under a variety of perspectives. First of all, we are interested in whether people understand that inflation is a distributional phenomenon and who they perceive to be hit the hardest. In turn, this boils down to testing whether people understand that all parts of the budget constraint are impacted by inflation. We also elicit the perceived efficiency and political consequences of inflation to shed new light on the fundamental question asked by Shiller (1997): why do people dislike inflation? Which are the most salient costs in people's minds? In this sense, we also plan to explain why some costs might be more salient than others based on individual characteristics.
Finally, we study people's policy views on inflation. We relate their policy preferences with both their understanding of inflation and their perceptions about its consequences. Eliciting both their preferences and understanding in terms of policy, in the words of Shiller (1997), "*may help government policymakers better understand the reasons that they should (or should not) be very concerned with controlling inflation, and may help the policymakers better understand issues concerning exchange rate policies.*"

The structure of our survey mirrors our three-fold research question. After collecting data on standard individual characteristics and full asset positions, we focus on eliciting the respondents' understanding of inflation. Specifically, we study their comprehension of the definition of inflation itself, their inflation expectations, and the perceived causes of price increases. Each of these dimensions is crucial to our analysis in different ways. In terms of definition, we study whether respondents are correctly able to distinguish between expressions such as "an increase in prices" versus "an increase in inflation," and other similar aspects related to the definition of inflation. We also study their understanding of price indices, letting them construct their own price index based on their reported consumption baskets and appraising how much they feel represented by official statistical figures. In addition, we elicit the respondents' inflation expectations to study whether different types of reasoning are correlated with different types of expectations. The most important part of this section concerns the respondents' understanding of the causes of inflation. First, we elicit the perceived causes of both a *generic* inflationary episode and the pandemic-related one. Then, we present respondents with a well-identified shock in the literature (say, a monetary policy or a government spending shock) and ask them what they think will happen to the agents in different markets (e.g., households, firms, and workers), as well as to aggregate quantities (e.g., prices, wages, and employment). In this way we are able to test whether their understanding of more simple dynamics (what happens in each market) is consistent with their more general understanding of the economy. The purpose of this first part of the survey is then three-fold: *i)* we revisit and update well known puzzles in the literature such as money illusion and the inflation fallacy, *ii)* we expand and update stylized facts related to the understanding of inflation and the economy in general, and *iii)* we test, combing these answers with background demographic, cognitive, and economic information, whether people who are more objectively exposed to inflation have a different understanding of its inherent dynamics compared to those who are less exposed.

Once we know how people understand inflation, we turn to the perceived consequences of price increases. Those who are more exposed to inflation, or feel they are more exposed, could hold beliefs about its consequences that are systematically different from those who are less exposed. In turn, this can shape both their perceived personal impacts and their policy views. In the same way, it is also possible that people who have a better understanding of inflation could hold different beliefs about its effects. In either case, it is crucial to elicit a wide range of beliefs about both the consequences and the responses to inflation. We do this at different levels. We start by asking to each respondent how much different economic and demographic groups are affected (e.g., savers versus borrowers, workers versus the unemployed, etc.). Then we turn to inflation's

impact on macroeconomic variables such as growth, investment, and exchange rates. Third, we ask about political and social stability. Then, we focus on the perceived *personal* impacts of inflation, both in general and in the pandemic period, and their behavioral responses to it. Combined with the detailed understanding elicited before, this section will provide a complete overview of both the perceived consequences of inflation and what shapes such perceptions. Finally, we can study *how* and *why* people react in a certain way to inflationary shocks in their daily lives (e.g., spend less, spend more for fear of future price increases, reduce cash holdings, etc).

In the final part of the survey, we turn to the policy views of the respondents when it comes to taming inflation. Inflation policy is different from many other policy areas, the first difference being that not all policy instruments to keep inflation under control are in the hands of the government. Differently from immigration or trade, and similarly to unemployment, inflation is also widely perceived to be a valence issue: to a reasonable extent, anyone wants less of it. Similarly to unemployment, inflation is also highly endogenous to the economic system, and hence it is difficult to grasp its dynamics even to a little extent. Yet, eliciting people's policy views on the matter is crucial for governments and academics alike and it only makes sense when combined with an in-depth investigation of *what shapes* these views. Do people understand the trade-offs implied by different policy bundles? Does their understanding of the consequences of inflation shape their policy views? Specifically, we ask respondents about which institution is in charge of price stability, which one should be in charge of it, and whether their are aware of any relationship between inflation and unemployment. This will also allow us to revisit an important policy debate started by Rogoff (1985). Finally, we ask questions to identify *i)* which tools to combat inflation respondents know about and *ii)* which tools to combat inflation respondents think should be used and why, specifically asking about the consequences of using a particular policy instrument.

Related Literature Our work contributes to several strands of the literature. First, we connect to the literature on attitudes towards inflation or policies to combat price increases. These studies have mainly used survey methods. Shiller (1997) provided a first seminal contribution. Subsequent work tried to characterize inflation aversion (Scheve, 2004; Easterly and Fischer, 2001; Howarth and Rommerskirchen, 2016; Aklin et al., 2022; van Lelyveld, 1999; Di Tella et al., 2001; Hofstetter and Rosas, 2021; Ruprah and Luengas, 2011; Hübner and Klemm, 2015; Coles and Chen, 1990; Jayadev, 2008; Scheve, 2003), fairness concerns for firms' pricing behavior (Rotemberg, 2005, 2011), or the public's understanding of central banks' policies (Hoffmann et al., 2022; Hayo, 1998; Coibion et al., 2023; Binder, 2020; Lamla and Vinogradov, 2019). We directly contribute to this strand of the literature in two ways. First, we run new large-scale, state-of-the art surveys (Stantcheva, 2022) that allow us to collect a huge wealth of data while minimizing the cognitive burden on respondents and low-quality answers. Second, we collect a much richer dataset, which allows us to study a number of unexplored aspects of people's perceptions, attitudes, and understanding of the mechanisms behind inflation. For instance, we will be able to characterize the relation between people's understanding of inflation, its perceived effects, inflation expectations, and their views on different policies to keep inflation under control.

This work is also related to the various branches of the literature on inflation expectations, and in particular to *i)* the anatomy of expectations (Angelico and Giacomo, 2019; Cavallo et al., 2017; D'Acunto et al., 2019; D'Acunto et al., 2021; Bruine de Bruin et al., 2011), *ii)* the narratives and formation of inflation expectations (Coibion et al., 2018; Coibion and Gorodnichenko, 2015; Coibion et al., 2018; Goldfayn-Frank and Wohlfart, 2020; Kuchler and Zafar, 2015; Malmendier and Nagel, 2015), and *iii)* the relation between expectations and actual behavior (Roth and Wohlfart, 2020; Armona et al., 2018; Bachmann et al., 2015; Coibion et al., 2023, 2022, 2019, 2021). Weber et al. (2022) provide an extensive review of this literature. Compared to these works, we will be able to study how inflation expectations are shaped by the understanding of how the economy works, potentially shedding new light on the genesis of inflation expectations. On a similar note, this paper is related to the work of Andre et al. (2021a), Andre et al. (2021b), Andre et al. (2022). Compared to these works, we aim at providing a complete characterization of households' understanding of inflation, from its causes to its distributional effects, and from its definition to people's preferred anti-inflationary policies.

Third, we build on the rapidly growing literature on the distributional effects of inflation (Argente and

Lee, 2020; Beck and Jaravel, 2020; Borusyak and Jaravel, 2021; Cardoso et al., 2022; Cavallo, 2020; Cravino et al., 2020; Doepke and Schneider, 2006; Jaravel, 2021, 2018; Jaravel and O'Connell, 2020; Kaplan and Schulhofer-Wohl, 2017; Del Canto Monge et al., 2022). We try to understand the extent to which these extensively documented distributional impacts are salient in people's minds. In particular, we study which are the determinants of whether one wins or loses after inflationary shocks.

Finally, we build on the theoretical and empirical literature on the costs of inflation. Broadly speaking, the literature has focused on the following costs of inflation: *i)* transaction frictions (Alvarez et al., 2019; Bailey, 1956; Cao et al., 2021; Ireland, 2009; Kurlat, 2019; Lucas, 2000), *ii)* fairness concerns (Eyster et al., 2020; Rotemberg, 2005), *iii)* uncertainty (Brandt and Wang, 2003; Chiu and Molico, 2011; Dibooglu and Kenc, 2009), *iv)* ZLB risk (Blanco, 2021; Coibion et al., 2012), *v)* political economy costs (Crowe, 2004), and *vi)* inefficient price dispersion (Galí, 2015; Nakamura et al., 2018). By carefully designing our survey questions, we are able to investigate the extent to which these costs are salient in people's minds.

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