What People Believe About Monetary Finance and What We Can('t) Do About It: Evidence from a Large-Scale, Multi-Country Survey Experiment

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Acknowledgements

Abstract

We conduct an experiment within a large-scale household survey on public finance in France, the Netherlands and Italy. We elicit prior beliefs via open-ended questions and introduce a measure of macroeconomic policy literacy. An educational blog post from a central bank (CB) that opposes monetary-financed policies preceded by a short video on public finance can induce less support for monetary-financed proposals and more support for fiscal discipline and CB independence, no matter the respondent's level of literacy. However, prior beliefs matter, and contradictory information may be polarizing. Information affects the respondents' views by shifting their inflation and tax expectations associated to these policies.

Topics: Central bank research; Fiscal policy; Monetary policy
JEL codes: E70, E60, E62, E58, G53, H31, C83

Résumé

Nous menons une expérience dans le cadre d'une enquête à grande échelle sur les finances publiques auprès des ménages en France, aux Pays-Bas et en Italie. Nous faisons ressortir les opinions préalables au moyen de questions ouvertes et introduisons une mesure des connaissances en matière de politique macroéconomique. Nous constatons qu'un article de blogue éducatif d'une banque centrale qui s'oppose aux politiques de financement monétaire, précédé d'une courte vidéo sur les finances publiques, peut induire un soutien moindre pour les propositions de financement monétaire et un soutien plus fort pour la discipline budgétaire et l'indépendance des banques centrales, quel que soit le niveau des connaissances du répondant en matière de politique économique. Cependant, les opinions préalables ont leur importance, et l'information contradictoire peut être polarisante. L'information influence les opinions des répondants en modifiant leurs anticipations en matière d'inflation et d'impôt associées à ces politiques.

Sujets : Politique budgétaire; Politique monétaire; Recherches menées par les banques centrales
Codes JEL : E70, E60, E62, E58, G53, H31, C83

1 Introduction

This paper reports on an information-provision experiment using a large-scale, multi-country household survey about public finance options and the effect of central bank (CB, hereafter) communication on support for a range of associated policies, in particular monetary finance.

Below-target inflation following the Great Financial Crisis has spurred debates on the expanse of CBs' toolkit and has even brought to light groundbreaking policies such as monetary finance.[1] The strong complementarities in the policy mix response to the COVID-19 pandemic have further blurred the lines between governments' fiscal policies and CBs' independent mandates to conduct monetary policy. In this context, particularly in Europe, the narrative around 'helicopter money', the 'modern monetary theory' and the cancellation of the public debt held by CBs went viral and peaked in the wake of the COVID-19 pandemic, as evidenced by Figure 1 (we borrow this terminology from the study of narratives presented in Shiller 2019). Whether in the media or in the political space, the public has been repeatedly confronted with contradicting messages regarding the feasibility and desirability of monetary finance,[2] while most of the opposition seems to have originated from the policy institutions themselves.[3] However, conveying the message to the public is particularly chal-

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[1]Here, and in the sequel, the term 'monetary finance' designates fiscal expenses that result in an increase in the take-home nominal income of some private agents and are funded by the expansion of the monetary base, that is, the liabilities of the CB, as opposed to tax or debt-financed fiscal expenses. We borrow this definition from Reis and Tenreyro (2022). See, *inter alia*, Galí (2020a), Cochrane (2022, chap 14) for further academic accounts.

[2]Examples of positive voices in this narrative include the president of the influential German think-tank DIW Berlin (Fratzscher, 2016), the former Vice Chair of the Federal Reserve, Stanley Fischer (Elga et al., 2019), and the former European Central Bank (ECB) president Mario Draghi, who described helicopter money as a 'very interesting concept' (The Economist, 2016). See, *inter alia*, Galí (2020b), Yashiv (2020), Buiter (2020) and De Grauwe (2020) for opinion columns during the onset of the COVID-19 pandemic.

[3]See, in particular, Reuters (2016), Barthelemy and Penalver (2020) and Business Insider (2016). See also Issing (2016); Ghebrihiwet et al. (2021).
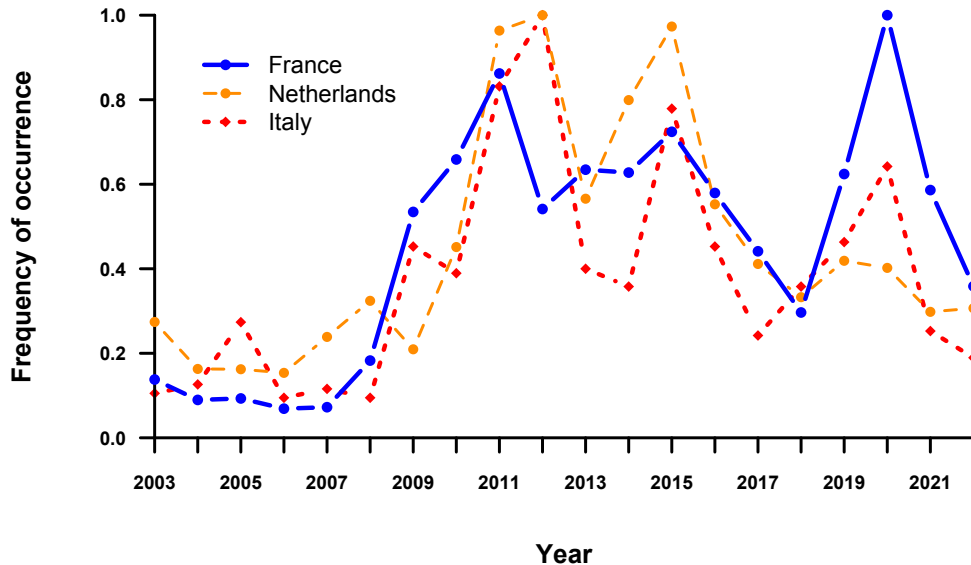
Notes: Authors' computations from the Nexis database. The key words used are 'monetary financing', 'modern monetary theory', 'debt monetization', 'helicopter money', 'printing press', 'money creation', 'canceling' and 'erasing public debts'. The data are taken from the main general-interest and financial newspapers in each country: for France, *Le Figaro*, *Libération*, *Le Monde*, *Les Echos* and *La Tribune*; for Italy, *Corriere della Sera*, *Il sole*, *Il messaggero* and *la Stampa*; for the Netherlands, *De Volkskrant*, *De Telegraaf*, *Algemeen Dagblad*, *NRC Handelsblad*, and *ESB*. The relative frequencies are computed by normalizing the number of occurrences with respect to the maximum amount reported over the entire period considered (2003 to 2022).

Figure 1: Relative frequency of concepts related to monetary finance in the main French, Dutch and Italian newspapers

lenging for CBs given the perceived complexity of the topic and the possibly limited levels of macroeconomic literacy in the population.[4]

Among experts, the loss of control of inflation and the ensuing unanchoring of expectations are commonly associated risks of monetary finance. Yet within specific contexts, such as the COVID-19 pandemic governmental rescue packages, it has also been argued

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[4]Higher financial literacy and deeper knowledge of the monetary policy framework have been associated with lower inflation forecast errors, more anchored expectations and greater trust in CBs; see Bruine de Bruin et al. (2010); Burke and Manz (2014); Van der Cruijsen et al. (2015); Hayo and Neumeier (2021); Brouwer and de Haan (2022).

that agents would perceive a monetary-financed fiscal stimulus as an increase in disposable income, which would entail a larger fiscal multiplier than a traditional debt-financed stimulus, which would be offset by standard Ricardian equivalence arguments (Galí, 2020b; Benigno and Nisticò, 2020). On the political economy front, it has been argued that even a one-time monetary-financed initiative may risk opening Pandora's box by fueling political opportunism and developing the unrealistic perception among the public that government resource constraint is irrelevant (Barthelemy and Penalver, 2020). Such an initiative could present a risk to sound governance and undermine support for budget discipline, tax collection and CB independence.

Where does the public stand in this debate? What do people know about macroeconomic policies and trade-offs in public finance in general? What do they believe about the specific advantages and risks associated with debt issuance versus monetary finance? Do people relate these advantages and risks to a rationale for fiscal consolidation programs or independent CB mandates? Importantly, how does information provision, in particular CB communication, affect public opinion? Does the effect of information depend on people's overall knowledge about public policies, prior views, or the source or combination of pieces of the information? How do people react to contradictory narratives?

This paper is the first to investigate these questions and does so by using a unique dataset from a large-scale, multi-country household survey that we conducted in France, Italy and the Netherlands between November 2021 and March 2022, therefore before the persistent surge in inflation in these countries.[5] More than 8,500 respondents participated in the survey.

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[5]We provide additional discussion on the timing of the survey with respect to the dynamics of inflation and inflation perception in Section 2.1 and Appendix A.

We design a measure of people's 'macroeconomic policy literacy',[6] elicit their opinions on public finance options, in particular *via* a set of open-ended questions, and systematically vary the information provided with a randomized controlled trial (RCT).

The main information treatment involves CB communication in the form of an actual post from an educational blog of the Bank of France. The post argues that '*there is nothing magic in central bank money.*' Despite its educational focus, the topic may still appear fairly complex to lay people. We therefore further experiment with providing an introductory video about public finance to a subset of respondents to help them formulate their thoughts in the open-ended questions and provide context for the CB communication. We then assess whether such an introduction reinforces the potential effects of CB communication. Finally, we test whether the effect of this CB educational communication on opinions (if any) is robust to the addition of an opinion column by a prominent European economist arguing for the opposite view that monetary finance could be used on an exceptional basis. These textual information pieces have not been elaborated for the purpose of this study but instead originate from the field to emulate the tone of the public debate on monetary financing in the experiment. The treatments are designed to shift the expectations associated with the various funding options of fiscal policies and help us observe whether such shifts cause changes in the support for these policies. Our survey design allows us to do so by controlling for policy literacy, prior beliefs and a wide range of socio-economic variables.

We bring three main findings. First, regarding policy literacy, we find an average score of 40% and substantial socio-economic disparities. We report distinct determinants of this score

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[6]We may define 'macroeconomic policy literacy' as the ability to understand the main mechanisms of macroeconomic policies and correctly interpret information pertaining to them. Given our research questions, we focus on monetary and fiscal policies. In the sequel, we refer simply to 'policy literacy'.

and, in particular, find a salient gender gap, where men score an average 10% higher than women. We further find cross-country differences that are not reflected in standard measures of financial literacy and numeracy, which speaks to the added value of our innovative policy literacy metric. Looking at the link between people's policy literacy and their views on public finance options, we find that more knowledgeable respondents tend to support fiscal discipline and CB independence more, monetary-financed proposals less and perceive inflation as the major risk if these proposals were to be implemented. Future tax increases, on the other hand, are not often spontaneously mentioned as a potential risk, neither of debt issuance nor monetary finance, no matter the level of policy literacy.

Second, no matter the level of respondents' policy literacy, the CB educational communication provided in the survey, particularly when preceded by the introductory video clip on public finance, can significantly shift their opinions towards less support for monetary-financed proposals, a higher perception of their inflation-related risk and more support for fiscal discipline and CB independence. These treatment effects tend to persist in a follow-up obfuscated survey conducted several weeks later. They also tend to be stronger among people who already had negative views on monetary finance than among people who did not express any prior view or expressed a positive one. Along this line, exposure to opposite views tend to produce polarization rather than a convergence of opinions: people generally respond more favorably to the information that aligns with their pre-treatment beliefs, in particular when it comes to monetary finance and CB independence. The effect of the CB communication about the irrelevance of a monetary finance option on the preference for fiscal discipline suggests that CBs can strengthen the rationale for fiscal discipline by offering a counter-narrative to the 'magic money' narrative.

Third, we uncover the expectation channel that underlies these treatment effects. We show how the information provided in the survey affects the respondents' opinions about policy options by shifting their inflation and tax expectations associated with monetary-financed or debt-financed proposals. In particular, we find that higher inflation expectations strongly and significantly result in lower support for monetary finance and both higher expected inflation and taxes result in more support for fiscal discipline. In macroeconomic models, expectations are the essential transmission channels of these policies, and our survey sheds light on these mechanisms. The related literature – surveyed hereafter – has extensively discussed, on the one hand, the effects of information on expectations and, on the other hand, the role of preferences in opinion formation regarding economic policies. We add to the literature by shedding light on the effects of information on expectations and, in turn, on public support for public finance policies.

The rest of the paper is organized as follows. After discussing the related literature, Section 2 introduces the experimental design of our survey and gives an overview of it. Section 3 analyzes the policy literacy, beliefs and opinions of the respondents, and Section 4 discusses the effects of the information provision treatments on the respondents' views. Section 5 concludes.

Related literature Our work builds on a growing body of literature exploiting surveys to study people's understanding and beliefs about economic questions, in particular within the context of information-provision experiments in RCTs; see Haaland et al. (2023) for a methodological account. An important strand of this literature focuses on the study of expectation dynamics, and in particular the effect of CB communication on inflation

expectations; see D'Acunto et al. (2022b) and the references herein and Blinder et al. (2023) for a comprehensive survey of the literature on CB communication in general. The evidence collected emphasizes that simple communication – such as the provision of the inflation target – has a greater impact on agents' expectations and their ensuing financial and economic decisions than more exhaustive, technical or detailed forms of communication; see, *inter alia*, D'Acunto et al. (2020) on a survey of Finnish households, Coibion et al. (2022c) on a US household survey; Coibion et al. (2018, 2019) on surveys of New Zealander and Italian firms, repectively; and Binder and Rodrigue (2018) for a focus on long-run inflation expectations of US households.[7] Furthermore, Coibion et al. (2022c) show that the source of the information matters, insofar as newspaper pieces appear to be discounted by most households compared to pieces of information originating directly from a CB. Within the context of the Bank of England's inflation reports, adding a simplified summary to the Bank's statements (Haldane and McMahon, 2018) and simplifying the language and relating its messages to people's daily lives (Bholat et al., 2019) have been found to enhance the public's understanding of and trust in the CB. Ehrmann et al. (2013) also underline the need for the CB to be judged credible by households for them to be willing to integrate its information. Coibion et al. (2020a) report that information-provision experiments about future interest rates in a survey of US households can jointly affect their inflation expectations and their expectations of other macroeconomic variables. Ehrmann et al. (2023) conduct an RCT within the ECB's Consumer Expectations Survey and find that the effects of information treatments about the ECB strategy on the credibility of the inflation target depends on the level of financial literacy of the respondents. In particular, they find that providing explanations for the

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[7]There also exists a strand of experimental literature studying the expectation channel of macroeconomic policies in the laboratory; see Hommes (2021) for a survey. This literature has also emphasized the importance of simple and relatable information in influencing subjects' macroeconomic forecasts; see, e.g., Mokhtarzadeh and Petersen (2021); Kryvtsov and Petersen (2021).

rationale of the medium-run target enhances its credibility among low-literate people but the effects are stronger among the most literate group.

Besides expectations and CB communication, several contributions look into households' understanding of the transmission mechanisms of shocks and macroeconomic policies. Carvalho and Nechio (2014) show that only some households in the Michigan survey form expectations that are consistent with a Taylor rule, and this depends on education and income levels. Using a survey of Dutch households, Coibion et al. (2022a) show that they tend to have a supply-side view, where higher inflation expectations are associated with more pessimistic outlooks and negatively affect spending. Andre et al. (2022a) survey a panel of US households and measure the narratives that they associate with the 2021–2022 inflation surge. Hayo and Neumeier (2017) find noticeable deviation from the Ricardian equivalence in the attitudes of German households. Roth and Wohlfart (2020) examine how beliefs about the likelihood of a recession affect households' expectations and their economic decisions. Andre et al. (2022b) compare the effects of various shocks on unemployment and inflation forecasts of experts and households and find a greater discrepancy between the two groups when it comes to inflation forecasts than unemployment forecasts. Educational achievements and age also appear to influence the accuracy of the households' forecasts, while D'Acunto et al. (2022a) emphasize the role of cognitive abilities and Coibion et al. (2020c) and Kamdar and Ray (2022), the influence of political affiliation in shaping individuals' beliefs and economic decision-making in the US population. D'Acunto et al. (2021) study the role of the identity of the messengers and find that more diverse policy committees may be better at reaching underrepresented groups. Furthermore, several studies have also found policy announcements to have little impact on households' expectations and spending plans, whether these announcements concern the Fed regime change towards average-inflation targeting in

August 2020 (Coibion et al., 2020b) or monetary and fiscal policy responses to COVID-19 (Coibion et al., 2022b).

Our work is also related to recent studies on beliefs about economic questions and support for policies. Roth et al. (2022) show how beliefs about the debt-to-GDP ratio and the perceived sustainability of the US public debt affect people's support for government spending cuts. Stantcheva (2021) reports that people's support for taxation reflects preferences for redistribution and fairness rather than efficiency concerns; see also Kuziemko et al. (2015) on the link between perceived income inequality and support for tax policies. Other information-provision experiments within household surveys that focus on support for policies include Alesina et al. (2018) on perceived social mobility opportunities and support for redistribution, Tella and Rodrik (2020) on trade protection policies and Settele (2022) on government interventions against the gender-wage gap.

Our 'macroeconomic-literacy score' is related to the survey literature that aims to measure people's factual knowledge about macroeconomic questions (see Blinder et al. 2023 for a survey). An early contribution by Blinder and Krueger (2004) reports on a phone survey of households with nine questions on key economic figures from the US economy. They find that most respondents score well, with the most frequent errors being about the size of the US budget deficit. By contrast, focusing on questions related to the monetary-policy framework, Hayo and Neuenkirch (2014), Van der Cruijsen et al. (2015), Bottone et al. (2021) and Hayo and Neumeier (2021) find overall large shortcomings by surveying factual knowledge of households in Germany, the Netherlands, Italy and New Zealand, respectively. For instance, Bottone et al. (2021) find that most Italian households believe that the ECB is primarily concerned with economic growth rather than price stability.

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Our paper stands out from this literature in several important dimensions. To the best of our knowledge, this is the first survey of people's perceptions of public finance options and monetary finance. Additionally, we emphasize textual analysis of open-ended answers, which allows for a less contrived and richer exploration of beliefs than the more common multiple-choice questions. We also provide new evidence about how these beliefs relate to inflation and tax expectations and affect opposition to monetary finance, support for CB independence and preferences for fiscal discipline. Furthermore, we explore a unique RCT design that uses an educational blog post from a CB as a main treatment variable, mixes an entertaining introductory video on public finance with textual content and, crucially, exposes respondents to contradictory messages in order to emulate the tone of the public debate in the survey experiment.

2 The survey

We first detail how the data is collected, then how the different information provision treatments are elaborated and, finally, we give a descriptive overview of the dataset.

2.1 The data collection

We run a survey of households in France, the Netherlands and Italy. We chose these countries to reflect the diversity of Western European economies. The survey was conducted by Kantar, a major multinational marketing research company.

The survey consisted of two waves: a main wave (Wave 1) and a recontact wave (Wave 2). A pilot for the first wave involving 100 respondents per country was first launched on November 23, 2021. The main wave of the survey was then conducted from January 14, 2022, to February 17, 2022, hence, before the start of the war in Ukraine and, importantly, before the recent and persistent surge in inflation.[8] A total of 8,601 respondents took part in the main wave of the survey: 2,200 respondents in the Netherlands, 2,201 in Italy and 4,200 in France. The larger sample size in France was used in anticipation of the second wave, which consists of a recontact form to analyze the persistence of the treatment effects. The second wave was conducted in France about a month later, from March 4 to 21, 2022, and involved two thirds of the respondents of the first wave (2,809 respondents in total).[9]

The survey was conducted online using the Kantar Profiles proprietary panels and was device-agnostic, i.e., respondents could complete it using a PC, tablet or smart phone.[10] We elaborated the questionnaire in English, which we report in Appendix D. As native speakers, and hopefully trained macroeconomists, we translated the questions into Dutch and French, and two graduate students in macroeconomics whose mother tongue was Italian, translated it into Italian.

We took precautions when designing and implementing the survey to maximize the qual-

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[8]Survey data from the ECB-CES in Fig. 1 in App. A show that the break towards higher inflation perception in the three countries studied takes place later in 2022. In particular, the inflation perception of the households did not greatly differ between July 2020 and January 2022: the median perception between these two dates differs by less than 0.5% in France and Italy and this difference is even statistically insignificant in France, which provides the majority of our sample. Considering one-step-ahead expectations from the same survey leads to an identical pattern. Moreover, the yearly inflation rates in 2021 in France, the Netherlands and Italy were 1.6% (source: INSEE), 2.7% (source: CBS) and 1.8% (source: Istat), respectively. In December 2021 and January 2022 the annualized year-over-year inflation rate in France was still 2.8 and 2.9%, 5.7 and 6.4% in the Netherlands and 3.9 and 4.8% in Italy, respectively, according to the same sources.

[9]For budgetary and practical reasons, only France could be used for the recontact wave.

[10]Evidence from the pilot shows that the device used does not correlate with the time the respondents spent on the text content of the survey.

ity of the data: we stressed the academic background of the study and anonymity of the data collected; used categorical answer keys for financial variables to maximize the response rate while allowing for a 'rather-not-disclose' option; obfuscated the Wave-2 questionnaire to hide its connection with the one of Wave 1; elicited feedback from the respondents about clarity and difficulty in the pilot and varied the format of the answers to keep participants engaged while measuring their attention level.

2.2 The experimental design

Figure 2 displays the general structure of the survey experiment. Upon starting the survey, respondents were randomly assigned to one treatment arm, and no respondent could take part to the survey more than once.

In all treatments, the respondents were first presented with usual socio-demographic and household-finance related questions and were asked about their habits and general opinions, including their macroeconomic expectations. The respondents then took a quiz consisting of five multiple-choice questions, three concerning monetary policy and two concerning fiscal policy. Participants could also choose the 'I don't know' option. This quiz aims to *ex-ante* measure the level of knowledge of the respondents regarding macroeconomic policies. We informed the respondents that this section of the survey was designed like a quiz with wrong and right answers.[11]

After completing the quiz, the respondents were given different information depending

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[11]Precisely, we state that '*We are interested in learning whether economic information finds its way to the general public. These are questions for which there are right or wrong answers but they are not designed to catch you out.*'

| Control | CB | Video+CB | Video | Video+CB +Media |

Socio-demographic and household-finance-related questions

Elicitation of preferences, views and macroeconomic expectations

Measurement of knowledge via a quiz on monetary and fiscal policies

Educational video on public finances (Video+CB) · Educational video on public finances (Video) · Educational video on public finances (Video+CB+Media)

Elicitation of pre-CB-information views on debt and monetary financing

CB text against monetary financing · CB text against monetary financing · CB text against monetary financing

Economist's text for monetary financing

Elicitation of post-treatment views (posteriors) on contextual inflation and tax expectations, macro policies and CB independence

Notes: Respondents were randomly assigned to one of the five treatment arms with equal probability upon starting the survey. 1,720 respondents per treatment (1,721 for Tr. `Video+CB+Media`). In this last treatment, the order of display of the CB communication and the economist's opinion piece was randomized, with an equal probability for each respondent to see one or the other first.

Figure 2: Structure of the survey experiment

on the treatment to which each respondent had been assigned. The key treatment variable was the provision of a CB communication piece arguing against monetary-financed fiscal policies. We used a blog post published online on May 20, 2020, on the *Bloc-notes Eco* blog, the blog of the Bank of France dedicated to the publication of educational content concerning the Bank's research studies and expertise. In their words, the blog '*targets an audience of students, professionals, journalists and scholars.*' We used this information source to convey a negative view of monetary finance. We did not name the Bank of France but referred to

a CB of a euro-area country. The entire text can be found in Appendix D. It explains the mechanics of money creation and CBs' balance sheets and why money cannot be created without any counterparts or costs. Note that there is no reference to the ECB's independent mandate.

Even though the text is real-world educational content, one may argue that it is long – in particular within the context of a survey – and still fairly technical, at least at first glance. Therefore, the information treatment first presented a three-sentence summary of the blog post that stresses the discussed risks associated with monetary finance and highlights its main message that the '*there is nothing magic in central bank money*' (see Box 2.2). The respondents had to spend at least 10 seconds on this summary before being able to scroll down through the full text to access the 'Next' button at the end of the text and proceed with the survey. This procedure was designed to keep the cognitive load reasonable and direct attention to the information while giving the respondents the option of reading the full text.

Columns one and two of Figure 2 describe the `control` group and Treatment `CB`, respectively: the control group, where no information was displayed, serves as a benchmark, while in Tr. `CB`, the CB communication opposing monetary-financed initiatives was displayed to the respondents between the elicitation of their prior and posterior views on debt issuance and monetary finance. More precisely, the posterior questions, common across all respondents, surveyed opinions on fiscal consolidation, CB independence, exceptional and systematic monetary financing of government expenses as well as expectations of taxes and inflation in thought experiments where debt or money creation would be chosen to fund public expenditures.

> Box 2.2 – Information provision treatment: Central bank's communication (see Barthelemy and Penalver 2020 for the full text)
>
> Before answering the last part of the survey, you will be randomly assigned to read a piece of information from a set with different views on economic policies. We now invite you to read the article below. It is a piece from a central bank from the euro area. It states that **"there is nothing magic in central bank money"**. It was written at the beginning of the pandemic (in the first semester of 2020). We invite you to skim through it yourself but an external expert has also summarized it for your convenience:
>
> "The article argues that if the European Central Bank were to create money to fund government expenses, this would be illegal and it could entail **very high social and economic costs** in the future. Looking at historical experience, creating money to fund government expenses has often led to a **loss of confidence in the currency** and a **loss of control over the general level of the prices** in the economy. A situation where prices start increasing rapidly refers to **inflation** or even hyperinflation."

Despite the simplified summary, the topic of the CB communication piece is arguably not trivial once we step out of our expert shoes and acknowledge the point of view of lay people.[12] To address this concern, we provided an introductory educational video about public finance to some respondents.[13]

We designed this video to convey educational content in an entertaining way, using jazzy music in the background, while abstracting from any macroeconomic jargon and ideological connotations. Such a stylized presentation aimed to provide context to the trade-offs associated with each public funding option and maximize survey engagement on this complex matter. The engagement of respondents is crucial in the context of our survey because we

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[12]Before the actual data collection, we tried out the survey questions on many non-expert respondents in our entourage and a fair share of them considered the topic of government funding options, debt issuance and monetary finance quite technical.

[13]The video in the three languages along with an English version (not used in the survey) can be found in the replication package.

rely on open-ended answers to assess people's prior beliefs about monetary finance and debt issuance. The video successively presents, in lay and apolitical terms, the different options for financing a public expense, namely, raising taxes, issuing debt or expanding the monetary base, and states that each option has downsides and upsides. The video concludes by stating that because the risks associated with monetary financing are usually considered high, CBs like the ECB are independent from governments. The risks and advantages are not spelled out. In particular, there is no mention of any inflationary bias. We wrote the text of the video and translated it into Italian, French and Dutch. All videos are subtitled and we outsourced the direction and production to the team of *La Cité de l'Eco*, an educational museum of economics in Paris that has a close relationship with the Bank of France.

The third column of Figure 2 summarizes the treatment called `Video+CB` where both supports – the video and the CB communication – are displayed. Because the video aims to provide context, respondents watched it first. This design choice allows us to investigate whether the lack of context (in Tr. `CB`) affects the elicitation of people's views in the open-ended questions, and their understandings of and reactions to CB communication. We also explored a fourth treatment, namely Tr. `Video` in the fourth column of Fig. 2, where respondents only watch the video and do not receive any further information.

We designed a final treatment – Tr. `Video+CB+Media`; see Col. 5 of Figure 2 – to test whether the CB message, if effective in shifting views against an apparently 'easy and free financing option', can stand up to opposing views in the public debate. In this treatment, we add an opinion column from Prof. Paul de Grauwe, who holds the John Paulson Chair in European Political Economy at the London School of Economics and Political Science. The opinion piece presented to the respondents argues for a one-time monetary-financed fiscal

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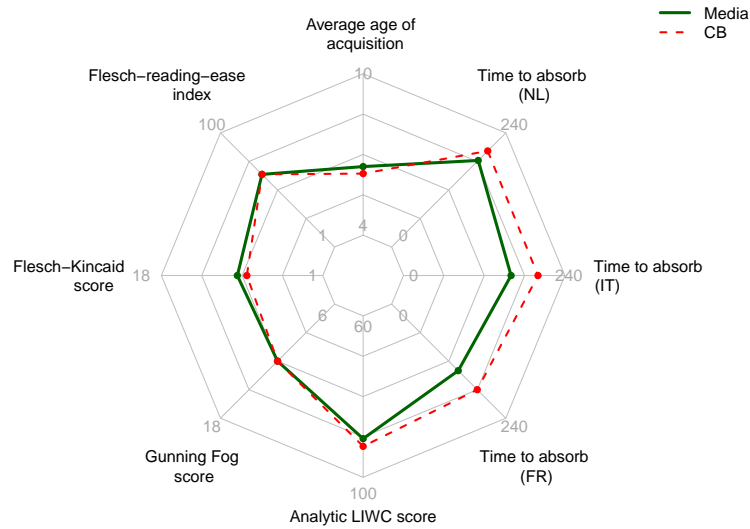
Notes: The average age of acquisition of the words in each text is obtained using the classification from Kuperman et al. (2012). The Flesch Reading Ease, Flesch-Kincaid and Gunning Fog indexes measure the ease with which a text can be read and understood by an average reader based on the number of words, syllables and sentences. A higher Flesch Reading Ease score implies higher readability, where a score between 70 to 80 is equivalent to school grade level 8 and is usually seen as well-adapted to the general public. The Flesch-Kincaid score and the Gunning Fog score return the required grade level (in the US education system) necessary to read the text. The Analytic LIWC (Linguistic Inquiry and Word Count) score measures the reliance of a text on analytic thinking and logical reasoning, where a higher score corresponds to higher analytical content. The 'time to absorb' is the time that an online prompter (oratlas) takes to read the text out loud (articulating each word properly) in seconds in each language.

Figure 3: Comparison of the complexity of the two textual pieces of information

stimulus in the wake of the COVID-19 pandemic (De Grauwe, 2020). The author argues that the long-run trend in Europe has been deflationary, which leaves room for monetary finance, also described as thinking 'outside the box.' This piece was chosen because the author is a prominent economist in Europe and often contributes to the economic debate in English, Dutch and French newspapers with a general readership. Therefore, in Tr. `Video+CB+Media`, the CB communication has both a facilitating component (the introductory video) and one that offers an opposing view (De Grauwe's piece). This treatment explores the relative effect

of each on the ability of the CB to influence public opinion and assesses whether contradicting messages tend to generate uncertainty and confusion or a polarization of ideas. This treatment has a strong empirical relevance because in the real world, people are frequently confronted with contradicting messages.

The order in which respondents saw the two texts was randomized, and the procedures used for the CB communication were implemented for De Grauwe's piece as well. The summary of the text is reproduced in Box 2.2, and the respondents had the option of reading the entire text, which can be found in Appendix D. As illustrated in Figure 3, the two texts have a similar level of readership according to several standard metrics of textual complexity.

A recontact wave was conducted in France three weeks after the completion of the first wave in the form of a unique shorter questionnaire. To mask its connection with the first wave, the questionnaire was obfuscated: the first questions relate to the proximity of essential services and EU-funded local projects, before turning to questions about the EU institutional framework and support for CB independence, monetary-financed initiatives, fiscal consoli-

dation policies and worries about taxes and inflation in cases of various public-spending options.

The experimental design is essentially exploratory. Therefore, we do not formulate firm hypotheses. In short, the treatments involving the CB blog post aim to test whether textual educational content from a CB alters people's opinions of public finance by manipulating their inflation expectations associated with monetary financing. The video may help people structure their opinions and help the CB affect these opinions. The last treatment explores people's reactions in the presence of contradictory information. The extensive socio-demographic questionnaire and the five-question quiz allow us to control for a wide range of factors when estimating the effect of the treatments, as well as to investigate heterogeneity considerations, in particular, with respect to people's knowledge of macroeconomic matters. An exhaustive list of the control variables is given in Appendix B.

2.3   Data overview

Our data are representative of the general population of the three countries in terms of gender, age, region of residence and, as much as possible given the sample size required, education levels and income (see Table 9 in Appendix B.1). More specifically, our data are representative in terms of education level in the Netherlands, and the French and Italian respondents have a slightly higher education level than the general population in these two countries. The middle-income earners are well represented in each country, but our sample involves fewer high-income earners than the general population.[14] In Table 9, we also show

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[14]Low-education and high-income quotas are a common challenge of online panels.

that our sample is fairly representative in terms of unemployment and involves fewer one-person households than the general population, resulting in an average household size slightly larger. Most importantly, the distribution of any of these characteristics does not significantly differ across the five treatments (see last column of Table 9).

The median completion time is about 14 minutes, with a 20-minute average, ranging from 17 minutes in the `Control` group to more than 21 in the `Video+CB+Media` treatment and close to 19 minutes in the three other treatments.[15] Given that the video lasts for one minute and 20 seconds, the time spent by respondents on the information treatments is substantial. In particular, respondents spent on average 59 seconds on the CB educational blog post versus 41 seconds on the opinion piece, which is consistent with the reported difference in times required to absorb the two pieces (see again Figure 3). An equal and small share of respondents acknowledged not paying attention to the information provided (only 7% for each of the texts), and more than two-thirds of the respondents found the content of the texts clear (68% for the CB text and 69% for the media piece). Additionally, the vast majority of respondents (86%) did not find the survey biased, and the rest were divided equally between finding a left- or a right-wing bias. About one out of eight participants found the survey too technical, ranging from 9% in the `Video` treatment to 13.5% in the `Control` group, which shows that the information provided in the different treatments was accessible for most participants and the educational content successfully mitigated the perceived technicality.

In the next section, we provide a roadmap of respondents' policy literacy, expectations and beliefs.

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[15]In the recontact wave, the median completion time was 3:30 minutes, with an average of 5.30 minutes.

3 Macroeconomic policy literacy and opinions

3.1 What do people know?

Five of the questions in the survey were designed to measure objective knowledge about macroeconomic policies, three pertain to monetary policy in the euro area and two to fiscal policy and public finances. These questions correspond to Questions 27 to 31 in Appendix D. The resulting metric for our analysis is a policy literacy score ranging from 0 (in the absence of any correct answers) to 5 (if all questions are correctly answered), along with two sub-scores, one for monetary policy (with a maximum of 3 points) and one for fiscal policy (with a maximum of 2 points).

Figure 4 displays the distribution of these scores. We can make two observations. First, scores are rather low: respondents only correctly answered an average of two questions out of five, and fewer than 5% obtained the maximum score (see Figure 4a). This, despite respondents devoting considerable effort to these questions; on average, respondents spent a minimum of 17 seconds (for the first and the fourth questions) and a maximum of 29 seconds (for the second question) on each quiz question. Reducing the sample to respondents who spent more than 10 seconds per macroeconomic-literacy question does not significantly improve the average score (see Figure 4d).

Second, comparing Figures 4b and 4c shows that respondents seem to be more knowledgeable about fiscal policy than about monetary policy: about a quarter of the respondents correctly answered at least two out of the three monetary-policy questions, while more than 40% obtained a score of 2/2 on the fiscal-policy questions. Of course, given the number

of answer keys and questions in each sub-score, it may be easier to obtain the maximum fiscal-policy score than the maximum monetary-policy score. Nevertheless, the significantly greater fiscal-policy knowledge persists when performing comparisons of each pair of scores for the five questions and of each monetary-policy question against the fiscal-policy score as a whole (the p-values of the corresponding rank-sum tests are always < 0.001).

This significant difference in knowledge remains in the effortful sub-sample only (compare Figures 4e and 4f). It is also in line with the higher number of intelligible answers collected in the open-ended questions about debt issuance than about monetary finance (see Section 3.2.1). Less understanding of monetary policy than of fiscal policy may appear surprising in light of the considerable transparency efforts of CBs, of which the ECB is no exception. We offer several conjectures to explain such a difference. The fiscal-policy instruments directly impact households' finances *via* taxes and government transfers, while the returns on savings or the cost of borrowing may play a less salient role in most households' income. Fiscal policy may also benefit from a wider media coverage than monetary policy, in particular within the context of the national political debate, while CB communication is often targeted at professionals and financial markets participants. Monetary policy is, in fact, frequently perceived as too complex by the public, and therefore does not trigger political mobilization or partisanship (Bearce, 2003). This may be particularly true in the euro area, where monetary policy has been delegated to a supra-national entity.

Panel A -- Full sample

(a) Total score   (b) Monetary-policy score   (c) Fiscal-policy score
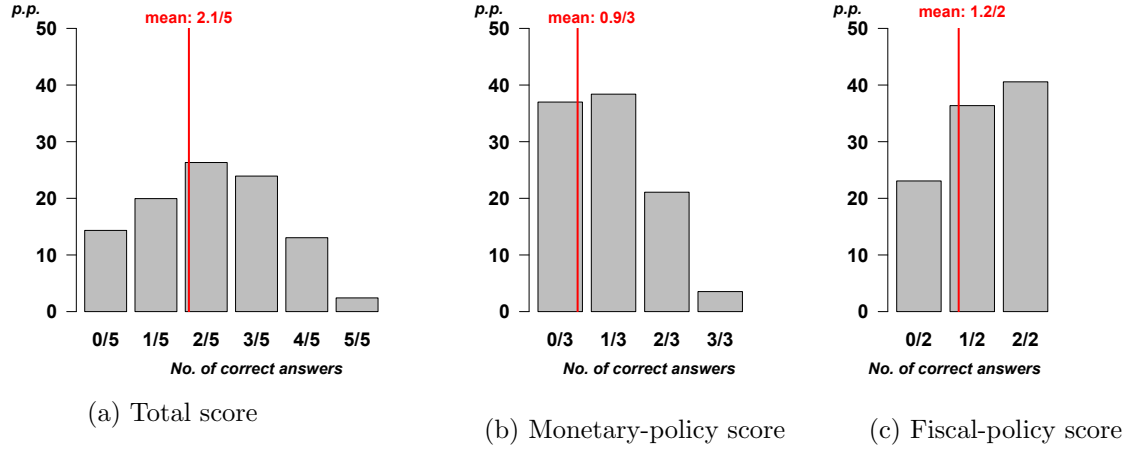
Panel B -- Effortful respondents only
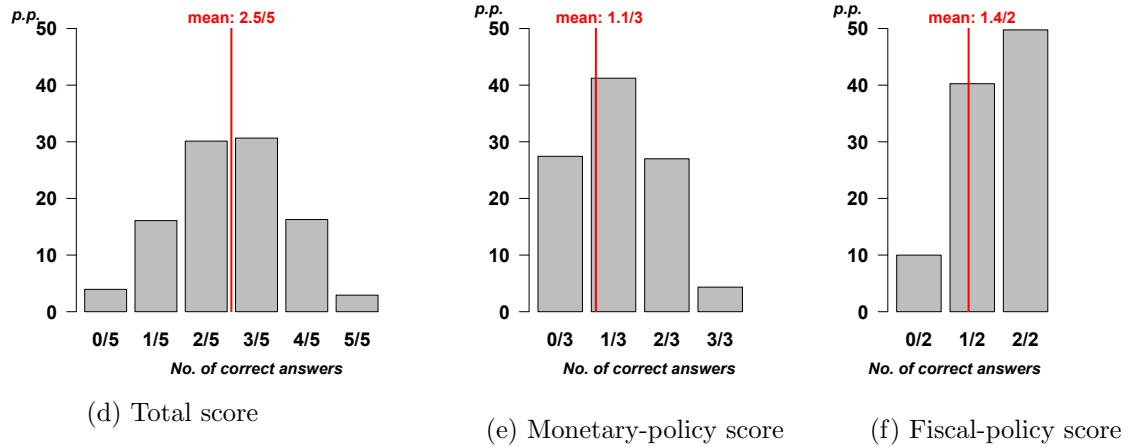
(d) Total score   (e) Monetary-policy score   (f) Fiscal-policy score

Figure 4: Distribution of the policy literacy scores

Turning to the determinants of this policy literacy, Table 1 reports on the relationships between socio-demographic and financial variables and policy literacy scores.[16] Gender has a striking effect on the average scores, with men performing significantly better than women. This is true whether considering the total score (Cols. I to III), the sample of effortful respondents only, as defined in Figure 4 (Col. IV), the monetary-policy questions only (Col. V) or the fiscal-policy questions only (Col. VI). Even after controlling for a wide range of socio-economic factors, the average gender knowledge gap is close to 0.3/5, or 6 points out of 100 (see Cols. III and IV). Computing the share of correct answers makes the results even more striking: fewer than 10% of women answered at least 4 questions correctly and only 0.9% of them scored 5 out of 5 versus 21.4% and 4% of the male respondents, respectively. On average, men outscored females by more than 0.5 out of 5 points, from an average of 1.83 to 2.36.

Such a gender gap is several times larger than what has been reported in the financial literacy score (De Beckker et al., 2019) but in line with the data of Van Rooij et al. (2011) on the understanding of basic economic and financial concepts, using the Dutch National Bank (DNB) household survey.[17] Also using a Dutch household survey, Van der Cruijsen et al. (2015) find that female respondents are less likely than men to answer correctly a series of true/false statements on ECB objectives and policy.

Yet, evidence of a gender economic-knowledge gap is mixed. Blinder and Krueger (2004) test the factual knowledge of participants using a US household survey about key economic

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[16]These variables are used throughout the paper as controls and are described in Appendix B.1. After checking for the absence of multicollinearity (see Table B.2), a factor analysis does not yield to a substantial decrease in the size of the dataset. For as many as eight factors, the associated $\chi^2(7)$-statistic is 18.54 with an associated p-value < 0.001.

[17]Women also disproportionately answered 'I don't know' and this tendency is more striking in our survey (more than 10 p.p. in each question) than what has been found in De Beckker et al. (2019).

figures and find no significant gender difference. One may argue that there are differences between recalling numbers, as their study requires, and sound economy analysis, as in our questions. Nevertheless, in our data, the strong gender gap persists when considering the two knowledge questions embedded in Wave 2 that pertain to the numerical objectives of fiscal and monetary policy in the European Monetary Union (EMU); see Questions 9 and 10 in Appendix D.2 and Table 12 in Appendix C.5. This evidence suggests that the gender policy-literacy gap is particularly pronounced when it comes to macroeconomic policies, no matter whether we elicit knowledge about general mechanisms, such as the interest-rate adjustment, or exact numerical information, such as the inflation target.

Turning to the other socio-economic characteristics, older and more educated individuals, higher-income earners, people inclined to financial planning and people who declare a high level of subjective knowledge also tend to obtain higher scores. Non-working people and members of larger households tend to obtain lower scores, although these effects are not large and do not hold among effortful respondents only (Col. IV) or when disentangling fiscal and monetary-policy-related questions (Cols. V and VI).

In line with previous results on household surveys in Germany and New Zealand (Hayo and Neuenkirch, 2014; Hayo and Neumeier, 2021), greater factual knowledge pertaining to monetary policy is associated with more trust in the CB (Col. V). In our survey, this correlation does not extend to factual knowledge about fiscal policy (Col. VI). Political engagement has also been linked to greater knowledge in finance (Blinder and Krueger, 2004; Van der Cruijsen et al., 2015), as in our data as well.[18]

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[18]Throughout our analysis, we introduce political opinions with dummy variables for 'declaring right-wing views' and 'declaring left-wing views'. About half of the respondents declared a neutral political orientation (i.e., answer '3') or chose not to answer. See Table 2 in Appendix B.1.

	Total score: Monetary and fiscal policies			Effortful only	Monetary policy score	Fiscal policy score
	All respondents				All respondents	
	(I)	(II)	(III)	(IV)	(V)	(VI)

<div align="center">Dependent variable: Macroeconomic literacy score</div>

	(I)	(II)	(III)	(IV)	(V)	(VI)
	Demographic variables					
Female	−8.74***	−6.50***	−5.85***	−5.33***	−6.12***	−5.45***
	(0.54)	(0.53)	(0.53)	(1.04)	(0.60)	(0.81)
Age	0.45***	0.39***	0.34***	0.18***	0.22***	0.52***
	(0.02)	(0.02)	(0.02)	(0.04)	(0.02)	(0.03)
Education	7.63***	5.72***	5.12***	4.58***	4.26***	6.39***
	(0.40)	(0.40)	(0.40)	(0.79)	(0.45)	(0.61)
Household size	−0.02	−0.38*	−0.82***	−0.61	−0.59**	−1.16***
	(0.23)	(0.22)	(0.23)	(0.47)	(0.25)	(0.35)
Working	2.91***	2.60***	1.07*	0.51	0.45	2.00**
	(0.58)	(0.56)	(0.57)	(1.10)	(0.64)	(0.87)
France	2.28***	2.40***	1.50**	3.41**	3.65***	−1.72*
	(0.63)	(0.62)	(0.64)	(1.36)	(0.71)	(0.97)
Italy	4.33***	3.00***	3.22***	3.26**	8.80***	−5.16***
	(0.67)	(0.66)	(0.68)	(1.40)	(0.75)	(1.03)
	Habits and opinion variables					
Left-wing view		7.50***	6.71***	1.51	5.24***	8.91***
		(0.67)	(0.67)	(1.25)	(0.75)	(1.02)
Right-wing view		4.80***	3.66***	1.46	2.82***	4.90***
		(0.62)	(0.62)	(1.23)	(0.69)	(0.94)
Trusting the ECB		4.25***	3.82***	2.71**	4.13***	3.36***
		(0.67)	(0.67)	(1.30)	(0.75)	(1.02)
Financial planner		3.60***	3.29***	−1.05	1.52***	5.95***
		(0.35)	(0.35)	(0.74)	(0.39)	(0.53)
Financial newspaper readers		1.47***	1.21***	0.73	1.59***	0.63*
		(0.25)	(0.25)	(0.49)	(0.28)	(0.38)
Subjective knowledge		6.88***	6.60***	4.06***	5.58***	8.12***
		(0.64)	(0.64)	(1.24)	(0.72)	(0.97)

<div align="center">Continued on next page</div>

| | Total score: Monetary and fiscal policies | | | | Monetary policy score | Fiscal policy score |
| | All respondents | | | Effortful only | All respondents | |
	(I)	(II)	(III)	(IV)	(V)	(VI)
	Financial variables					
Low income			1.43	−0.25	0.13	3.39**
			(1.09)	(2.21)	(1.22)	(1.66)
Medium income			6.10***	3.88*	4.77***	8.09***
			(1.05)	(2.13)	(1.17)	(1.60)
High income			8.41***	5.42**	6.27***	11.61***
			(1.13)	(2.32)	(1.27)	(1.72)
Negative net wealth			−2.06*	−7.57***	−4.16***	1.09
			(1.20)	(2.38)	(1.34)	(1.82)
Low net wealth			0.11	−5.55***	−1.33	2.28
			(1.08)	(2.14)	(1.21)	(1.64)
Medium net wealth			1.18	−2.33	0.01	2.93*
			(1.13)	(2.24)	(1.26)	(1.72)
Missing net wealth			−3.26***	−6.89***	−4.04***	−2.10
			(1.14)	(2.28)	(1.27)	(1.72)
COVID-19 financial loss			3.09***	1.03	1.21**	5.90***
			(0.54)	(1.07)	(0.60)	(0.82)
Constant	4.72***	−10.81***	−7.70***	33.90***	−4.11	−13.08***
	(1.66)	(2.01)	(2.47)	(5.36)	(2.75)	(3.75)
Nb. Obs.	8,585	8,585	8,585	2,050	8,585	8,585
−log-lik.	39649.2	39,337.7	39,239.7	9175.7	40,170.9	42,831.9
Wald F(8)-statistic			24.49***	6.00***	15.21***	18.58***

Table 1: OLS models of the policy literacy score

Notes: *p<0.1; **p<0.05; ***p<0.01. The scores are expressed out of 100 p.p. All explanatory variables are described in Appendix B.1. Clustered estimated standard errors (CESEs) in brackets. The Wald statistic refers to the test of the joined significance of the financial variables. 'Effortful only' (Col. IV) excludes respondents who spent less than 10 seconds on at least one of the five questions.

Interestingly, the magnitude of the cross-country differences stands out: while Dutch

	Never	Rarely	Occasionally	Regularly	Very often	$\chi^2(4)$-statistic
Panel A. Reading general newspapers						
Average total score	1.67	1.99	2.19	2.44	2.52	416.8***
(sd)	(1.30)	(1.29)	(1.31)	(1.27)	(1.21)	
Average monetary policy score	0.68	0.86	0.98	1.11	1.09	304.6***
(sd)	(0.79)	(0.81)	(0.85)	(0.87)	(0.84)	
Nb. obs.	2,196	1,807	2,305	1,715	578	
Panel B. Watching TV						
Average total score	1.75	2.01	2.00	2.17	2.15	71.9***
(sd)	(1.36)	(1.32)	(1.36)	(1.31)	(1.28)	
Average monetary policy score	0.69	0.88	0.88	0.97	0.93	75.2***
(sd)	(0.81)	(0.81)	(0.84)	(0.85)	(0.85)	
Nb. obs.	702	755	1,412	3,074	2,658	
Panel C. Using social media						
Average total score	2.25	2.34	2.09	1.97	1.86	145.9***
(sd)	(1.36)	(1.31)	(1.35)	(1.29)	(1.24)	
Average monetary policy score	0.96	1.02	0.94	0.86	0.81	58.4***
(sd)	(0.88)	(0.85)	(0.85)	(0.82)	(0.81)	
Nb. obs.	2,043	1,115	1,607	2,164	1,672	

Notes: The questions ask how often respondents use the different sources of information when it comes to economic issues in particular (see Question 13 in Appendix D). The total knowledge score has a maximum of 5, and the monetary policy score, a maximum of 3. The χ^2-statistics correspond to the Kruskal-Wallis test of equality of proportions across the five frequencies of use.

Table 2: Policy literacy score by frequency of use of information source

respondents obtained significantly higher scores than their French and Italian counterparts when it comes to fiscal policy questions (Col. VI), the opposite holds regarding the total score (Cols. I to IV) and monetary policy questions only (Col. V). This may look surprising given that the Netherlands score (much) higher in financial literacy than France, which score higher than Italy in this respect (Klapper and Lusardi, 2020).Our striking results show that the 'big 3' questions about financial literacy and numeracy that are the usual metrics when it comes to evaluating the economic knowledge of the public (see Lusardi and Mitchell 2014; Ehrmann et al. 2023) may differ substantially from policy literacy. The outcome and cross-country ranking may be sensitive to the particular questions of the quiz. It is, therefore, key to include general-level questions on economic mechanisms in household surveys to accurately

measure the public's knowledge of the matter. These cross-country differences call for more research to design effective targeted communication policies for the European Monetary Union.

To design such targeted communication policies, another key is to identify which information channels to use to expand the audience. Table 2 reveals that readers of newspapers and, to a lesser extent, respondents who often watch TV have the highest knowledge score. Hence, reinforcing communication around macroeconomic policies via these channels may lead to redundancy while overlooking the least literate households on the matter. Because the least knowledgeable households tend to use social media more frequently (Panel C of Table 2), using these platforms to diffuse information about monetary policy in particular could help target the fraction of the public that could benefit the most from CB communication.

We highlight the following first finding:

Finding 1 (Macroeconomic policy literacy)

- *Respondents appear less knowledgeable when it comes to monetary policy than fiscal policy.*

- *Males, more educated, wealthier, newspaper readers, and French and Italian respondents have higher macroeconomic scores than females, people with lower education achievement, Dutch respondents and social-media users.*

Before digging into the effect of information provision on respondents' opinions on financing options of macroeconomic policies, we analyze the pre-treatment, i.e., the prior opinions of the respondents, and describe their post-treatment, i.e., posterior views on the matter.

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3.2 What do people think?

3.2.1 Priors on monetary and debt-financed public expenses

We elicited respondents' prior opinions on monetary and debt-financed expenses by first asking whether they saw an advantage or a risk to each funding option (they could also answer 'I don't know'). If they answered in the affirmative, we elicited their views *via* open-ended (OE) questions, where respondents could enter what they thought these risks and advantages were, and *via* multiple-choice questions (MCQs), where they could declare whether each option had more drawbacks than advantages (which we treat as having a negative prior) or the other way around (which we treat as having a positive prior), or they could answer that they did not know (which we treat as not having any prior).[19]

A large fraction of the respondents declared a prior opinion on these policy options: almost two thirds (5,459) on monetary-financed expenses and up to 70% (6,029) on debt-financed policies. Overall, priors were negative: among respondents expressing a prior opinion, a comparable fraction (about two thirds, $\chi^2(1) = 0.03$) believed that debt- or monetary-financed policies had more drawbacks than advantages.

Figure 5 reports on a textual analysis of the answers to the OE questions. We focus here on monetary finance and defer a similar analysis of debt-financed expenses to Appendix C.2. The relative size of a word indicates its relative frequency in the answers over the entire sample. Strikingly, inflation-related risks dominate (Figure 5a), with words such as 'inflation', 'devaluation', 'increase', 'currency', 'worth' and 'loss' being the most frequently cited. By

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[19]The survey questions correspond to Questions 36 and 39 in Appendix D. The order of the questions on advantages and risks is randomized for each financing option (debt or money).
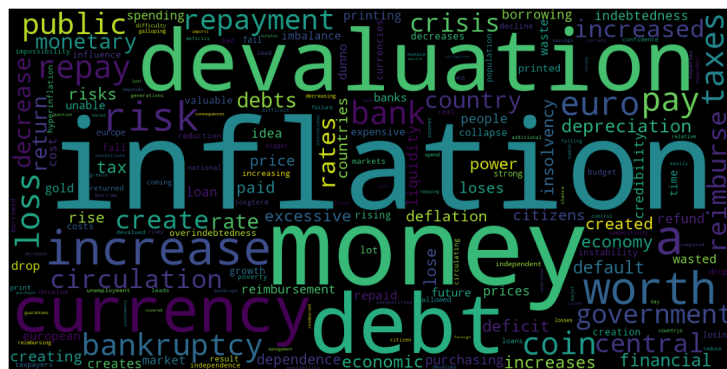
(a) Risks of monetary financing (4,977 obs.)
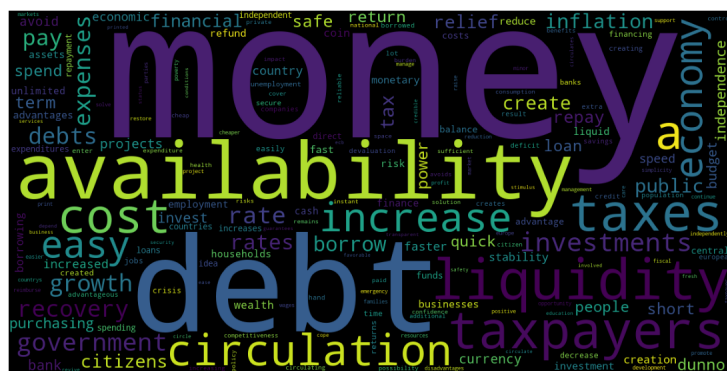
(b) Advantages of monetary financing (2,755 obs.)

<u>Notes</u>: The survey questions correspond to the OEQ component of Questions 37 and 38 in online Appendix D. The order of the two sub-questions are randomized over the entire sample. The figures represent the most commonly mentioned keywords, where their relative sizes are proportional to their relative frequencies over the entire sample.

Figure 5: Prior views on monetary-financed policies

contrast, words positively associated with monetary finance belong to the vocabulary of 'liquidity', such as 'money', 'easy', 'availability' and 'increase' (see Figure 5b). When it comes to debt issuance, similar words are used to describe advantages, while the risks identified mostly pertain to debt burden and interest rate payments (see Figure 3 in Appendix C.2).

To dive deeper into the priors, we classify the OE answers into a few categories. Figure

6 reports their distribution across the entire sample and for respondents with high and low policy literacy scores, as identified in Section 3.1. We can make several observations, all significant at 1% unless otherwise stated.

First, respondents were more prolific when it comes to debt issuance than monetary finance. The difference is most pronounced when it comes to the risk-related questions: about 80% of the respondents filled up an intelligible answer about risks related to debt issuance (see the last bar of Fig. 6d) but less than half did so when it came to risks associated with monetary finance (see the last bar of Fig. 6b. Note also that only 57% of all respondents saw the OEQ about the risks of monetary finance because the rest did not answer that monetary finance involves any risk, including about 30% who declared not to know. By contrast, almost 80% answered positively the question on risks associated with public debt issuance and only about 10% did not know. The comparison of OE answers about the advantages of each funding option tells a similar story (see Figures 6c versus 6a).

It is, therefore, clear that people are less knowledgeable about monetary finance than about debt finance. We conjecture that households are more familiar with the concept of debt than of monetary finance. As anecdotal evidence, in the Netherlands, since 2009, advertisements for loans and mortgages have been legally required to include the warning 'borrowing money costs money', and we find many instances of this statement in the related OE answers.

'You said funding public expenses by having the central bank create money has advantages Which one(s) do you have in mind?'

N = 531   792   2755

High   Low   All
Policy literacy score
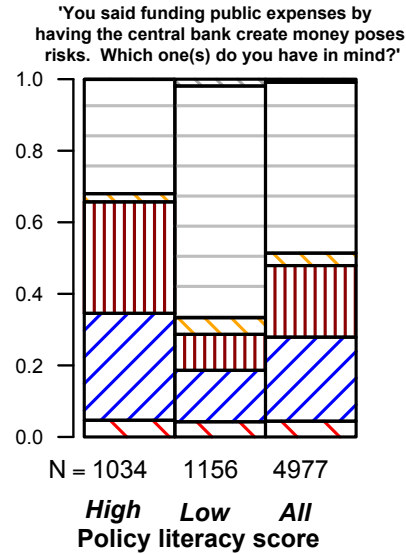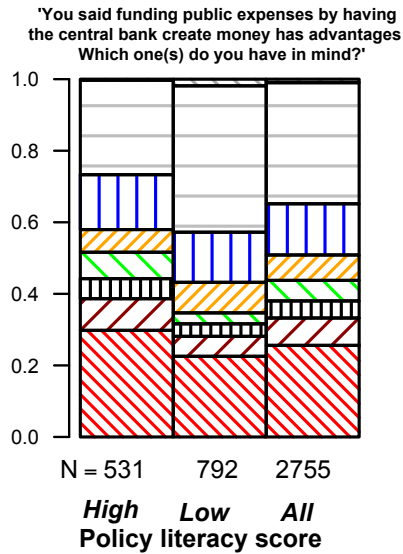
- ◩ More money in circulation
- ◩ Easy/ quick
- ◩ Avoid interest payments
- ◩ Investment: growth/welfare
- ◩ Avoid tax increase
- ◩ Avoid public debt increase
- ▤ irrelevant
- ◩ missing

(a) Advantages of monetary finance

'You said funding public expenses by having the central bank create money poses risks. Which one(s) do you have in mind?'

N = 1034   1156   4977

High   Low   All
Policy literacy score

- ◩ Bad governance
- ◩ Depreciation
- ◩ Inflation
- ◩ Higher future taxes
- ▤ irrelevant
- ◩ missing

(b) Risks of monetary finance

'You said funding public expenses by issuing debt has advantages. Which one(s) do you have in mind?'

N = 730   793   3311

High   Low   All
Policy literacy score
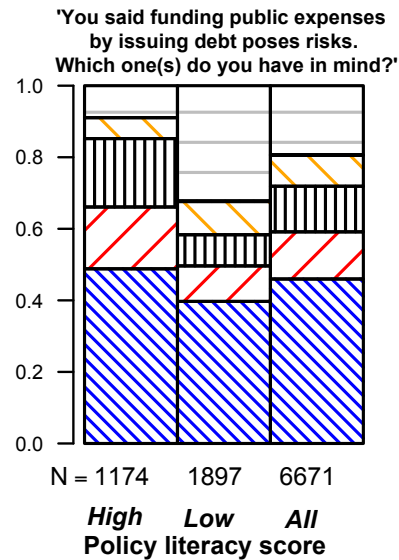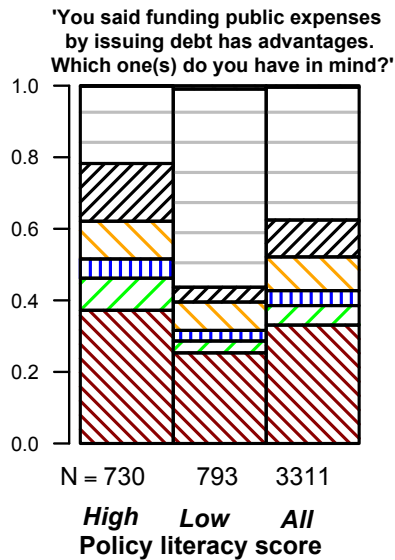
- ◩ Immediate availability
- ◩ Investment: growth/welfare
- ◩ Long-term payment deferral
- ◩ Avoid tax increase
- ◩ Go for current low int. rates
- ▤ irrelevant
- ◩ missing

(c) Advantages of debt issuance

'You said funding public expenses by issuing debt poses risks. Which one(s) do you have in mind?'

N = 1174   1897   6671

High   Low   All
Policy literacy score

- ◩ Debt burden
- ◩ Default/ reputation
- ◩ Interest rate risk
- ◩ Higher future taxes
- ▤ irrelevant

(d) Risks of debt issuance

Notes: The OE questions are presented if the respondent indicated that they believed risks (or advantages) exist for each funding option as asked in Questions 34, 35, 37 and 38, see App. D. The group of low policy literacy scores comprises respondents who answered correctly no more than one question out of the five knowledge questions, and the group of high scores includes those who answered correctly at least four. N corresponds to the number of respondents in each group but the barplots are based on the number of answers, which are larger than N because some respondents provided multiple answers.

Figure 6: Distribution of the OE answers by policy-literacy score

Second, there are significantly more intelligible answers in the high-macroeconomic-literacy group (defined as obtaining a score of 4 or 5/5) than in the rest of the respondents, the difference being the most striking when it comes to the question on risks associated with monetary finance (Fig. 5a). About two thirds of the respondents with a high score provided a meaningful OE answer, and mostly cited the loss of the value of money (whether *via* inflation or depreciation), and a small percentage of them also mentioned governance issues. In contrast, only one third of the respondents with a low score (defined as obtaining a score of 0 or 1/5) explicitly mentioned a risk associated with monetary financing, and only one out of six of them noted losing the purchasing power of the currency.

Third, and perhaps most interestingly, the risk of higher taxes was not mentioned often, neither in the case of monetary finance nor when thinking about debt issuance, and the fraction of respondents who did mention 'higher future taxes' does not greatly differ across policy literacy scores. About 10% of the respondents who saw this OE question mentioned future taxes as a risk of debt issuance (see the dashed orange areas on Figs. 6b and 6d), which corresponds to less than 7% of all participants, with a p-value associated with the cross-score difference equal to 0.89. When it comes to the risks of monetary finance, only about 2% of the total respondents mentioned the risk of higher future taxes, with the p-value associated with the cross-score difference being 0.87. The same orders of magnitude prevail regarding the mentions of "avoiding tax increase" when it comes to advantages of either of the two founding options (see Figs. 6a and 6c).

Inflation concerns were much more prominent than future tax worries when it came to monetary finance (Fig. 6b) but was ignored when it came to debt issuance (Fig. 6d); Section 4.2 below sheds more light on the respondents' expectations. This finding speaks to a fairly

	(I)	(II)	(III)	(IV)	(V)
	'I am certain or very certain'	No answer to the OEQs about:			
		monetary finance		debt issuance	
		risks	*advantages*	*risks*	*advantages*
Video	40.8	40.7	64.4	21.4	55.8
No video	37.8	45.5	74.0	24.2	70.2
p-value	0.005***	< 0.001***	< 0.001***	0.002***	< 0.001***

Table 3: Effect of the video on survey engagement

diverse literature that emphasizes that people tend to be myopic (Gabaix and Laibson, 2022). In the context of policy, myopia results in beliefs that need not align with Ricardian equivalence (see, e.g., the experimental evidence of Meissner and Rostam-Afschar 2017) and undermines the importance and benefits of fiscal and monetary policy coordination discussed within the context of rational expectation models (see, e.g., Bianchi and Melosi 2019). This survey result is in line with the recent experimental findings of Kronick and Peterson (2022) who show, in a laboratory setting, that subjects tend to be myopic rather than forward-looking. As a result, they are not substantially concerned by policy coordination or conflict but rather focus on the current state of the economy.

Finally, we investigate whether the educational video achieved its primary objective of framing the OE questions and inducing more intelligible answers among respondents who watched it than among those who were asked to write down their opinions about public finance without any introduction to the topic. Table 3 compares the number of answers received for these questions and the uncertainty of the respondents in these questions in

Trs. `Control` and `CB` versus Trs. `Video+CB`, `Video` and `Video+CB+Media`. We find that the video significantly increased the respondents' engagement: they tended to provide more OE answers and were less uncertain about their answers than the respondents who were not exposed to the video.

We summarize our findings concerning the prior opinions of the respondents as follows:

Finding 2 (Prior beliefs about public finance options)

- *Overall, respondents are less familiar with monetary finance than public-debt issuance, with great disparities across levels of policy literacy.*

- *Tax arguments are not often mentioned, neither related to debt issuance nor to monetary finance, neither as a risk or as an advantage, and no matter the level of policy literacy.*

- *The educational video achieved the promotion of survey engagement.*

Before turning to the effects of the information-provision treatments, we describe our main dependent variables.

3.2.2 Posteriors on public-finance options

Table 4 describes the five main post-treatment dependent variables, namely, the support for monetary-financed policies on a systematic or exceptional basis, the support for CB independence, and the support for fiscal consolidation, either as spending cuts or as a tax increase.[20]

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[20]In this section, we pool all treatments because the randomization procedure of the treatment assignment ensures that socio-economic characteristics are equally represented in each treatment (see Table 9 in Appendix B.3). The results discussed in this section also hold when considering the control group only.

Let us first focus on cross-country differences. Regarding support for CB independence, more than a third of the respondents do not express a clear opinion (namely, they answered 3 on the 1-to-5 Likert scale), and this fraction is the same across countries (the p-value associated with the χ^2-statistics is 0.263). By contrast, significantly more respondents support CB independence (i.e., they answered items 1 and 2) in France than in the Netherlands or Italy (p-value< 0.001). What is perhaps surprising is that the picture is reversed when it comes to support for systematic monetary finance, where about half of the Dutch respondents oppose this idea (namely, answered 1 or 2) but only 40% and 35% of the Italian and French respondents, respectively, do so (p-value< 0.001). This cross-country difference persists when asked about an exceptional monetary-financed support in the wake of the COVID-19 pandemic (p-value< 0.001), although only a maximum of one third of the Dutch respondents oppose this proposal, and only a minimum of 17.5% in Italy.

Support for fiscal consolidation in the presence of high public debt also significantly varies across countries. While more than half of the Dutch and French respondents (up to 60% in France) support a decrease in government spending in this case, only 45% of the Italian respondents do so (p-value< 0.001). Aversion to tax increases in the presence of high public debt also varies across countries: almost half of the Italian respondents tend to oppose this policy but only a quarter of the Dutch respondents do (p-value< 0.001).

There is a positive correlation between support for budget cuts and support for tax increases (see Table 8 in Appendix B.2), which reflects overall preferences for fiscal discipline, but the tax-increase option enjoys overall less support than the spending-cut option. Support for budget cuts also tends to be associated with opposing monetary-financed policies, but the magnitude of the correlation is not large (see, again, Table 8 in Appendix B.2).

		Full sample			NL			FR			IT		
Variable	**Levels**	**n**	**%**	**∑%**	**n**	**%**	**∑%**	**n**	**%**	**∑%**	**n**	**%**	**∑%**
CB		*'A central bank should be directly under the control of its government'*											
independence	1	839	9.8	9.8	167	7.6	7.6	491	11.7	11.7	181	8.2	8.2
	2	1581	18.4	28.1	391	17.8	25.4	812	19.3	31.0	378	17.2	25.4
	3	2985	34.7	62.8	736	33.5	58.8	1493	35.5	66.6	756	34.4	59.7
	4	2433	28.3	91.1	709	32.2	91.0	1023	24.4	90.9	701	31.9	91.6
	5	763	8.9	100.0	197	8.9	100.0	381	9.1	100.0	185	8.4	100.0
	all	8601	100		2200	100		4200	100		2201	100	
Support for		*'Some commentators say that the European central bank should **always create money** to pay for the public*											
monetary finance		*expenses of the COUNTRY (French e.g.) government. What do you think of this proposal?'*											
(systematic)	1	1088	12.7	12.7	445	20.2	20.2	475	11.3	11.3	168	7.6	7.6
	2	2448	28.5	41.1	613	27.9	48.1	1229	29.3	40.6	606	27.5	35.2
	3	3467	40.3	81.4	828	37.6	85.7	1720	41.0	81.5	919	41.8	76.9
	4	1323	15.4	96.8	275	12.5	98.2	644	15.3	96.9	404	18.4	95.3
	5	275	3.2	100.0	39	1.8	100.0	132	3.1	100.0	104	4.7	100.0
	all	8601	100		2200	100		4200	100		2201	100	
Support for		*'Some commentators say that the European central bank should **exceptionally create money** to fund the large*											
monetary finance		*governmental expenses induced by the pandemic situation. Do you rather support or rather oppose this idea?*											
(exceptional)	1	616	7.2	7.2	197	8.9	8.9	327	7.8	7.8	92	4.2	4.2
	2	1645	19.1	26.3	510	23.2	32.1	841	20.0	27.8	294	13.4	17.5
	3	3528	41.0	67.3	877	39.9	72.0	1797	42.8	70.6	854	38.8	56.3
	4	2299	26.7	94.0	554	25.2	97.2	1013	24.1	94.7	732	33.3	89.6
	5	513	6.0	100.0	62	2.8	100.0	222	5.3	100.0	229	10.4	100.0
	all	8601	100		2200	100		4200	100		2201	100	
Support for fiscal		*'When the level of the **public debt** becomes concerning, **decreasing** the overall amount of **government expenses***											
consolidation		*is often justified.'*											
(spending cuts)	1	214	2.5	2.5	35	1.6	1.6	111	2.6	2.6	68	3.1	3.1
	2	874	10.2	12.7	192	8.7	10.3	391	9.3	12.0	291	13.2	16.3
	3	2766	32.2	44.8	743	33.8	44.1	1206	28.7	40.7	817	37.1	53.4
	4	3704	43.1	87.9	1043	47.4	91.5	1793	42.7	83.3	868	39.4	92.9
	5	1043	12.1	100.0	187	8.5	100.0	699	16.6	100.0	157	7.1	100.0
	all	8601	100		2200	100		4200	100		2201	100	
Support for fiscal		*'When the level of the **public debt** becomes concerning, **increasing** the overall amount of **taxes** is often*											
consolidation		*justified.'*											
(tax increase)	1	885	10.3	10.3	144	6.5	6.5	413	9.8	9.8	328	14.9	14.9
	2	2266	26.4	36.6	461	20.9	27.5	1121	26.7	36.5	684	31.1	46.0
	3	3056	35.5	72.2	852	38.7	66.2	1501	35.7	72.3	703	31.9	77.9
	4	2146	24.9	97.1	681	30.9	97.2	1013	24.1	96.4	452	20.5	98.5
	5	248	2.9	100.0	62	2.8	100.0	152	3.6	100.0	34	1.5	100.0
	all	8601	100		2200	100		4200	100		2201	100	

Notes: The questions correspond to questions 50, 53, 51, 46 and 47 in Appendix D, respectively. The answers are Likert items ranging from 1 ('strongly disagree' or 'strongly oppose') to 5 ('strongly agree' or 'strongly support').

Table 4: Descriptive statistics of the post-treatment dependent variables

This result is consistent with observations from US household surveys. For instance, Blinder and Krueger (2004) find that being worried about the size of the public deficit is paradoxically associated with thinking taxes are too high. Roth and Wohlfart (2020) identify a significant association between worries about the level of public debt and support for spending cuts but not for tax increases because the two fiscal-consolidation options have different determinants. This is also true in our data: details of the other socio-economic determinants of the five dependent opinion variables are given in Cols. II to VI of Table 10 in Appendix C.3. The last two columns report on the determinants of the support for budget cuts and tax increase, respectively. Age, gender, political orientation, financial habits and policy literacy all have distinct effects on these two fiscal-consolidation options.

Overall, higher education achievements and higher policy literacy scores are strongly and significantly associated with more support for CB independence (see Col. II of Table 10) and less support for monetary finance (Cols. III and IV). The difference in their support for budget cuts versus tax increases also stands out (Cols. V and VI), although a higher policy literacy is associated with *less* support for tax increase.

Older respondents tend to oppose monetary-financed policies but the other variables, including gender, financial variables and financial newspaper reading, are not significantly or unambiguously related to these views. In particular, we do not find the strong partisan effect that is typical of US data (Alesina et al., 2020). We may conjecture that this is due to the more scattered political spectrum in Europe, where parties on either end of the political spectrum do not, in fact, have diametrically opposing ideas when it comes to economic questions, such as the place of the State in the economy.

In the next section, we investigate how information provision can shift respondents' beliefs.

4 Can information change people's views?

We first focus on the treatment effects in the main wave of the survey, then take a closer look at how information provision may have affected inflation and tax expectations to shed light on the expectation channel of information, and conclude by uncovering persistent treatment effects in the recontact wave.

4.1 Support for policy options

We perform OLS cross-sectional estimations of the following baseline specification:

$$Y_i = \alpha + \beta_1.\text{Tr}_{\texttt{CB},i} + \beta_2.\text{Tr}_{\texttt{Video+CB},i} + \beta_3.\text{Tr}_{\texttt{Video},i} + \beta_4.\text{Tr}_{\texttt{Video+CB+Media},i} + \gamma X_i + \epsilon_i \quad (1)$$

where the dependent variables Y are the Likert items corresponding to respondents' post-treatment reported opinions on CB independence, monetary-financed public spending and fiscal discipline, as described in Table 4; the dummy variables $\text{Tr}_{\texttt{CB},i}$, $\text{Tr}_{\texttt{Video+CB},i}$, $\text{Tr}_{\texttt{Video},i}$, and $\text{Tr}_{\texttt{Video+CB+Media},i}$ represent the exposure of respondent i to each treatment, and the vector X_i includes the control variables used in Table 1, along with policy literacy as analyzed in Section 3.1, their prior beliefs as discussed in Section 3.2.1 and a measure of their reported medium-

run inflation expectations.[21] Error terms ϵ are clustered estimated standard errors at the country level (Jackson, 2020). Heterogeneous-treatment effects along a given characteristic of the respondents are analyzed by adding interaction terms to Specification (1) between the treatments and the variable representing that characteristic.

Results are reported in Tables 5, 6 and 7. The main take-away is that the information provided significantly and strongly affects the respondents' opinions about all outcomes considered, namely, support for monetary finance, CB independence and budget discipline.

Let us first focus on the effects of information provision on the respondents' support for monetary finance, whether on a systematic (Cols. I to III of Table 5) or an exceptional basis (Cols. IV to VI). They are significantly more likely to oppose monetary-financed expenses (Cols. I and IV) if they were exposed to the CB educational blog post. This effect is of similar magnitude whether they saw the introduction video on public finance (Tr. `Video+CB`) or not (Tr. `CB`). Watching the video alone (Tr. `Video`) does not influence views on monetary finance, which confirms the neutrality of its content as per design. These treatment effects are robust to the introduction of policy literacy and prior beliefs. In particular, a negative prior on monetary financing is significantly and positively associated with greater opposition to monetary finance. The only difference between the determinants of the support for systematic and exceptional monetary-financed policies concerns the effect of policy literacy and inflation expectations: higher policy literacy and higher inflation expectations are associated with greater opposition to monetary finance on a systematic (Col. I) but not on an

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[21]Inflation expectations are elicited *via* the following qualitative question (see Question 24 in Appendix D): 'Relative to the past year, how do you think that the average level of the prices in the economy will evolve over the next five years?'), where answers range from 1 for 'it will increase a lot' to 5 for 'it will decrease a lot'. The answer 'I don't know' is treated as a missing variable. Hence, a higher value of the inflation expectations correspond to *lower* inflation expectations. Including a similar measure of tax expectations does not change the findings in this section but results in fewer observations due to more 'I don't know'-answers.

exceptional basis (Col. IV). In other words, support for a one-time policy intervention in an exceptional context is not tied to individual characteristics or long-term outlooks.

We do not find any average effect of `Video+CB+Media`. However, looking at interaction effects with the respondents' prior views on monetary finance (Cols. III and VI), we find that the provision of contradictory information tends to polarize opinions: being exposed to both the CB blog post and the opinion piece reinforces the opposition to monetary finance among those who held a negative prior view on the matter but has the opposite effect on the respondents who did not express such a prior view (namely, had either a positive prior or no particular prior). This evidence suggests that people tend to respond more to information that aligns with their prior beliefs and that such information reinforces prior beliefs. Polarization is of a stronger magnitude and higher statistical significance when it comes to opinions about the desirability of a one-time monetary-financed stimulus in the context of the COVID-19 pandemic than opinions about systematic monetary-financed spending (compare Cols. III and VI). Because the opinion piece discusses monetary finance precisely in reference to the financing of COVID-19 rescue packages, such a stronger effect may emphasize the importance of contextualized information in shifting opinions. Nevertheless, these heterogeneous treatment effects only hold among the respondents who found the textual treatments clear. Finally, it is interesting to see that these treatment effects do not depend on policy literacy: we do not find evidence of differentiated effects among low and highly 'policy literate' respondents (Cols. II and V).

	Dependent variable: Support for monetary-financed fiscal policy					
	(systematic)			(exceptional)		
	I	II	III	IV	V	VI
	all respondents		'CB text is clear'	all respondents		'CB text is clear'
CB	−0.08**	−0.08*	−0.21***	−0.12***	−0.10**	−0.18**
	(0.03)	(0.04)	(0.07)	(0.03)	(0.05)	(0.08)
Video+CB	−0.11***	−0.10**	0.03	−0.13***	−0.12**	0.02
	(0.03)	(0.04)	(0.07)	(0.03)	(0.05)	(0.07)
Video	−0.02	−0.03	0.02	0.04	0.07	0.07
	(0.03)	(0.04)	(0.04)	(0.03)	(0.05)	(0.05)
Video+CB+Media	−0.03	−0.02	0.14**	0.04	0.04	0.35***
	(0.03)	(0.04)	(0.07)	(0.03)	(0.05)	(0.07)
Inflation expectations	0.07***	0.07***	0.06***	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
Low policy literacy score	0.19***	0.18***	0.17***	0.01	0.04	0.02
	(0.02)	(0.05)	(0.03)	(0.02)	(0.05)	(0.03)
High policy literacy score	−0.24***	−0.19***	−0.26***	−0.04	−0.03	−0.07*
	(0.04)	(0.06)	(0.04)	(0.03)	(0.06)	(0.04)
Negative prior	−0.62***	−0.62***	−0.60***	−0.62***	−0.62***	−0.58***
	(0.02)	(0.02)	(0.05)	(0.02)	(0.02)	(0.05)

Heterogeneous treatment effects measured with an interaction term with …

	Low policy literacy score	*Negative prior*		*Low policy literacy score*	*Negative prior*
× CB	0.01	−0.02		−0.08	0.003
	(0.07)	(0.010)		(0.07)	(0.11)
× Video+CB	0.005	−0.34***		0.02	−0.29***
	(0.07)	(0.10)		(0.07)	(0.10)
× Video	0.03	−0.08		−0.07	−0.06
	(0.07)	(0.07)		(0.07)	(0.07)
× Video+CB+Media	0.01	−0.31***		−0.05	−0.52***
	(0.07)	(0.10)		(0.07)	(0.10)
	High policy literacy score			*High policy literacy score*	
× CB	−0.003			0.01	
	(0.09)			(0.09)	
× Video+CB	−0.10			−0.07	
	(0.09)			(0.09)	
× Video	−0.05			−0.05	
	(0.09)			(0.09)	
× Video+CB+Media	−0.09			0.06	
	(0.09)			(0.09)	
Constant	2.67***	2.66***	2.73***	3.08***	3.06***	3.00***
	(0.11)	(0.11)	(0.15)	(0.11)	(0.11)	(0.15)
Wald $F(8)$-statistic	3.80***			2.50**		
Nb. Obs.	8,289	8,289	4,686	8,289	8,289	4,686
−log-Lik.	10,827.5	10,826.0	6,233.1	11,135.9	11,132.7	6,410.8

<u>Notes</u>: All demographics, habits, opinions and financial variables (see Table 1) included (the Wald F-statistics refer to the joint significance of the financial variables). The Likert-scale dependent variable is the answers to Q53 (Cols. I–III) and Q51 (IV–VI). *Low* and *high* policy literacy scores are defined in Fig. 6, inflation expectations are elicited in Q24, where 1 corresponds to 'prices will increase a lot over the next five years' and 5 to 'prices will decrease a lot over the next five years'. 'I don't know' answers are excluded. *Negative prior* is a dummy equal to 1 if the respondent chose 'rather drawbacks' to Q39 and 0 if they chose 'Rather advantages' or 'I don't know'. The demographic and habit-related variables, listed in Table 1, are always jointly significant at 1%. 'CB text is clear' excludes the respondents in Trs. CB, Video+CB and Video+CB+Media who declared finding the texts unclear, i.e., it excludes those who answered 1, 2, 3 (or 6) to Questions 43 and 44.

Table 5: Treatment effects on public support for monetary finance

Turning to opposition to CB independence (Table 6, Col. I), being exposed to the CB educational blog post alone (Tr. `CB`) does not affect views on the matter. This result is not surprising given that the information provided only focuses on monetary finance and does not mention CB independent mandates.[22] The CB text does increase support for CB independence when combined with the introduction video (Tr. `Video+CB`). A negative prior on monetary financing and higher inflation expectations are also strongly and significantly associated with more support for CB independence. Treatment effects are stronger among respondents who held these negative priors than among those who did not express them (Cols. II and IV).

Overall, the video alone (Tr. `Video`) has the largest effect across all treatments on reinforcing the support for independent CBs. The reference in neutral and plain language to CB independence and the risks of monetary finance at the end of the video, just before the post-treatment questions, may have focused the attention of respondents in Tr. `Video` on the matter. This could explain why adding subsequent textual information (Tr. `Video+CB`) did not reinforce the overall effect on opinions but rather weakened them, while the lowest effect is reported for Tr. `Video+CB+Media` where respondents saw two pieces of textual information between the video and the questions. This interpretation would support simple and short messages and signal cognitive overload otherwise.

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[22]The blog post even mentions a scenario where the government ends up recapitalizing the CB in case of monetary finance, which would neutralize such an operation and explicitly states that 'the government owns the central bank'. This detail of the text may have created confusion between the concept of operational independence and financial independence. This could explain why seeing the CB blog post alone (Tr. `CB`) decreased support for CB independence among highly literate respondents (see Col. III in Table 6).

	I	II	III	IV	V
			Dependent variable: Opposition to CB independence		
		All respondents		'CB text is clear' only	
CB	0.05	−0.003	−0.003	0.13	−0.003
	(0.04)	(0.05)	(0.05)	(0.09)	(0.09)
Video+CB	−0.21***	−0.13**	−0.26***	−0.002	−0.22***
	(0.04)	(0.05)	(0.05)	(0.08)	(0.08)
Video	−0.29***	−0.15***	−0.42***	−0.14***	−0.41***
	(0.04)	(0.05)	(0.05)	(0.05)	(0.06)
Video+CB+Media	−0.13***	−0.12**	−0.29***	0.15*	−0.17**
	(0.04)	(0.05)	(0.08)	(0.08)	(0.08)
Inflation expectations	0.06***	0.06***	0.06***	0.05***	0.05***
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Low policy literacy score	0.16***	0.16***	0.03	0.16***	−0.03
	(0.03)	(0.03)	(0.06)	(0.04)	(0.06)
High policy literacy score	−0.23***	−0.23***	−0.38***	−0.28***	−0.38***
	(0.03)	(0.03)	(0.06)	(0.05)	(0.08)
Negative prior	−0.26***	−0.16***	−0.14***	−0.13**	−0.33***
	(0.02)	(0.05)	(0.05)	(0.06)	(0.03)
		Heterogeneous treatment effects measured with an interaction term with …			
		Negative prior	*Low policy literacy score*	*Negative prior*	*Low policy literacy score*
× CB		0.12	0.10	−0.06	0.33**
		(0.08)	(0.08)	(0.12)	(0.15)
× Video+CB		−0.18**	0.12	−0.31***	0.22
		(0.08)	(0.08)	(0.12)	(0.13)
× Video		−0.32***	0.33***	−0.33***	0.33***
		(0.08)	(0.08)	(0.08)	(0.09)
× Video+CB+Media		−0.15*	0.25***	−0.42***	0.26*
		(0.08)	(0.08)	(0.12)	(0.14)
			High policy literacy score		*High policy literacy score*
× CB			0.25**		0.20
			(0.11)		(0.16)
× Video+CB			0.15		0.13
			(0.12)		(0.16)
× Video			0.11		0.13
			(0.11)		(0.11)
× Video+CB+Media			0.27***		0.26
			(0.11)		(0.16)
Constant	2.94***	2.90***	3.02***	2.87***	2.87***
	(0.11)	(0.11)	(0.11)	(0.15)	(0.18)
Demographics, habits, opinions	YES	YES	YES	YES	YES
Financial variables	NO	NO	NO	NO	NO
Wald $F(8)$-statistic	1.45				
Nb. Obs.	8,289	8,289	8,289	4,686	4,686
−log-Lik.	12,324.6	12,304.8	12,310.4	7,067.4	7,066.3

Notes: See Tables 1 and 5. The dependent variable ranges from 1 for 'strongly disagree' to 5 for 'strongly agree' with the statement 'A central bank should be directly under the control of its government'. Therefore, a negative coefficient implies an effect of more support for CB independence.

Table 6: Treatment effects on public opposition to CB independence

However, and perhaps most importantly, Tr. `Video+CB` is the only treatment that systematically and significantly shifts views towards more support for CB independence no matter the level of policy literacy (Cols. III and V). While higher literacy is strongly and significantly associated with more support for CB independence, all other treatments have attenuated effects, if any, among the low 'policy-literate' public.

Finally, Table 7 looks at the effects of the information treatments on the support for fiscal discipline, in the form of support for budget cuts (Cols. I to III) or tax increases (Cols. IV to VII) when the level of public debt becomes concerning. Because neither of the treatments directly addresses fiscal discipline, any treatment effect on the matter is a second-round effect. For instance, the treatments may have convinced respondents that monetary finance is not a viable government funding option and, hence, may have made the budget constraint of the government more salient and reinforced the rationale for fiscal discipline. Furthermore, the analysis in Section 3.2.2 shows that support for budget cuts and tax increases have distinct determinants and, therefore, the treatments need not influence these two views in the same way.

In this respect, over the entire sample, exposure to the CB communication (combined or not with the video and the opinion piece) significantly increases the support for tax increases (Col. IV). The CB communication reinforces the support for fiscal discipline no matter the level of policy literacy (Col. V). Policy literacy does not play a role in support for tax increases but is associated with more support for budget cuts. This dichotomy confirms the distinct determinants of the two options discussed in Section 3.2.2. On the other hand, neither treatment impacts support for budget cuts (Col. I). The video alone (Tr. `Video`) never impacts views on fiscal discipline, which further indicates that the content is minimally

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negatively biased.

Because potential second-round treatment effects require a fair understanding of and level of attention to the information provided, focusing on respondents who reported that the CB text was clear is more revealing than focusing on the entire sample (Cols. II–III and VI–VII). In this sub-sample, all treatments involving the CB blog post increase support for budget discipline, both with budget cuts (Col. III) and with tax increases (Col. VII) and independently from prior views on monetary finance.[23] Only Tr. `Video+CB`, which combines the introduction video on public finance and the CB blog post, has a robust effect on the support for fiscal discipline across all literacy levels, both when it comes to cutting expenses (Col. II) and increasing taxes (Cols. V and VI).

The CB treatment does not discuss fiscal consolidation policies but instead aims to induce exogenous changes in the respondents' views about monetary finance. Hence, our results suggest that the CB communication, by offering a counter-narrative to the 'magic money' narrative, can strengthen the rationale for fiscal discipline. We conclude this section by highlighting our main finding:

Finding 3 (Information provision effects on opinions about public finance) *The CB educational blog post preceded by an introduction video on public finance is the only treatment that significantly decreases support for monetary finance, increases support for CB independence and enhances support for fiscal discipline – both in the form of budget cuts and tax increases – across all levels of policy literacy. However, providing contradictory information may have a polarizing effect insofar as it reinforces prior opinions.*

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[23]Using the prior views on public debt instead does not alter the results. For consistency with Tables 5 and 6, we use the priors on monetary finance in Table 7.

	Dependent variable: Support for fiscal discipline						
	Budget cuts			Tax increase			
	I	II	III	IV	V	VI	VII
	all respondents	'CB text is clear' only		all respondents		'CB text is clear' only	
CB	−0.02	0.19***	0.23***	0.08**	0.10**	0.22***	0.24***
	(0.03)	(0.07)	(0.07)	(0.03)	(0.05)	(0.08)	(0.08)
Video+CB	0.01	0.15**	0.24***	0.10***	0.13***	0.15**	0.25***
	(0.03)	(0.06)	(0.07)	(0.03)	(0.05)	(0.07)	(0.07)
Video	0.001	0.03	0.07*	0.06	0.04	0.04	0.07
	(0.03)	(0.04)	(0.04)	(0.03)	(0.05)	(0.05)	(0.05)
Video+CB+Media	−0.01	0.11*	0.23***	0.10***	0.13***	0.29***	0.38***
	(0.03)	(0.07)	(0.07)	(0.03)	(0.05)	(0.08)	(0.07)
Inflation expectations	−0.04***	−0.05***	−0.05***	0.07***	0.07***	0.07***	0.07***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Low policy literacy score	−0.18***	−0.21***	−0.17***	0.06**	0.05	0.05	0.08**
	(0.02)	(0.05)	(0.03)	(0.03)	(0.06)	(0.06)	(0.04)
High policy literacy score	0.12***	0.21***	0.10***	0.04	0.11*	0.11	0.04
	(0.03)	(0.06)	(0.04)	(0.03)	(0.07)	(0.07)	(0.04)
Negative prior	0.04**	0.01	0.12**	−0.03	−0.03	−0.07**	0.01
	(0.02)	(0.03)	(0.05)	(0.02)	(0.02)	(0.03)	(0.05)
	Heterogeneous treatment effects measured with an interaction term with ...						
		Low policy literacy score	*Negative prior*		*Low policy literacy score*	*Low policy literacy score*	*Negative prior*
× CB		0.09	−0.13		0.003	−0.04	−0.18
		(0.12)	(0.10)		(0.08)	(0.14)	(0.11)
× Video+CB		0.16	−0.17*		−0.03	0.12	−0.17
		(0.11)	(0.09)		(0.08)	(0.12)	(0.10)
× Video		−0.02	−0.17**		0.06	0.06	−0.04
		(0.07)	(0.06)		(0.08)	(0.08)	(0.07)
× Video+CB+Media		0.28**	−0.17*		0.01	−0.03	−0.35***
		(0.11)	(0.10)		(0.08)	(0.13)	(0.11)
		High policy literacy score			*High policy literacy score*	*High policy literacy score*	
× CB		−0.22*			−0.11	−0.28*	
		(0.13)			(0.10)	(0.15)	
× Video+CB		−0.22			−0.06	−0.10	
		(0.13)			(0.10)	(0.15)	
× Video		−0.13			−0.01	−0.01	
		(0.09)			(0.10)	(0.10)	
× Video+CB+Media		−0.19			−0.18*	−0.36**	
		(0.13)			(0.10)	(0.15)	
Constant	2.75***	2.88***	2.85***	2.79***	2.78***	2.73***	2.69***
	(0.10)	(0.15)	(0.15)	(0.12)	(0.12)	(0.16)	(0.16)
Demographics, habits, opinions	YES	YES	YES	YES	YES	YES	YES
Financial variables	YES	YES	YES	YES	YES	YES	YES
Wald $F(8)$-statistic	4.10***			9.13***			
Nb. Obs.	8,289	4,686	4,686	8,289	8,289	4,686	4,686
−log-Lik.	10,586.4	6076.6	6,082.5	11,481.4	11,478.1	6,590.3	6,589.3

<u>Notes:</u> See Tables 1 and 5. The dependent variable ranges from 1 for 'strongly disagree' to 5 for 'strongly agree' with the statement that 'When the level of the public debt becomes concerning, decreasing the overall amount of government expenses' (Cols. I–II) or 'increasing the overall amount of taxes' (Cols. III–IV) 'is often justified'.

Table 7: Treatment effects on public support for fiscal discipline

We now investigate the expectation channel that may underlie these treatment effects.

4.2 The expectation channel of the public support for policies

Following the treatments, the survey elicits tax and inflation expectations in thought experiments where the respondents have to consider the case of the government financing a substantial public expense either by standard debt issuance or by monetary finance. We focus on the effect of two expectational variables on the respondents' opposition to monetary finance and support for fiscal consolidation: inflation expectations in the event of a monetary-financed public expense and future tax expectations in the event of a debt-financed public expense (see the second item in Question 49 and the first item in Question 48 in Appendix D, respectively). The answers range from 1 to 5, with higher values suggesting higher inflation or tax expectations. We denote here by π_M^e the first variable and by τ_B^e the second one.

We estimate the effect of the four information-provision treatments on the respondents' support for policies *via* their effects on their tax and inflation expectations, π_M^e and τ_B^e, using 2SLS regression models.[24] We control for all the factors considered so far and, in particular,

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[24]We need two requirements to apply this class of models: i) the treatments need to have a significant and strong enough effect on expectations, which is confirmed by the first-stage regression outcomes in Table 11 in Appendix C.4 and the weak-instrument tests in Table 8, and ii) the exclusion-restriction assumption, namely, the respondents are assumed to respond to the treatments only *via* their expectations. We make this assumption based on the theoretical models underlying the analysis of monetary- versus debt-financed policies. We may also make this assumption given the salience of the inflationary risks of monetary finance and the emphasis on the public budget constraint embedded in the two textual pieces. We do not include the support for CB independence as a dependent variable because the link between expectations and independent CB mandates was not obvious for the respondents (see Footnote 22). Furthermore, with four treatments and two endogenous variables (π_M^e and τ_B^e), our models are over-identified so we report the test statistics of the Sargan-Hansen test, which indicate that in all but one model (Col. V) we cannot reject the null of the exogeneity of the instruments assuming that at least one is exogenous, namely, we cannot reject the null

Dependent variable:	Support for monetary-financed spending (systematic)		(exceptional)		Support for decrease in public spending			Support for increase in taxes		
	All data I	All data II	All data III	All data IV	All data V	'CB text is clear' only VI	'CB text is clear' only VII	All data VIII	'CB text is clear' only IX	'CB text is clear' only X
π^e_M	-0.53^{***}	-0.37^{***}	-1.01^{***}	-0.87^{***}	-0.11	0.53^{***}	-	0.65	0.42^{***}	-
	(0.18)	(0.13)	(0.23)	(0.16)	(0.16)	(0.12)	-	(0.62)	(0.14)	-
τ^e_B	0.40	-	0.36	-	0.30	-	1.07^{***}	-0.52	-	0.84^{**}
	(0.32)	-	(0.39)	-	(0.27)	-	(0.34)	(1.34)	-	(0.33)
Constant	3.36^{***}	4.07^{***}	5.18^{***}	5.81^{***}	1.86^{***}	0.93^{**}	-0.85	2.38	2.56^{***}	0.06
	(0.73)	(0.42)	(0.87)	(0.53)	(0.61)	(0.43)	(1.12)	(2.51)	(0.43)	(1.08)
Weak-instrument test π^e_M	17.78^{***}	17.78^{***}	17.78^{***}	17.78^{***}	17.78^{***}	18.49^{***}	-	17.78^{***}	18.49^{***}	-
Weak-instrument test τ^e_B	5.66^{***}	-	5.66^{***}	-	5.66^{***}	-	3.73^{***}	5.66^{***}	-	3.73^{***}
DWH F-stat	4.61^{***}	7.16^{***}	22.95^{***}	44.50^{***}	0.45	14.40^{***}	13.49^{***}	3.75^{*}	7.17^{***}	6.13^{**}
Sargan test (J-stat.)	$\chi(2)=3.83$	$\chi(3)=6.23$	$\chi(2)=0.67$	$\chi(3)=1.62$	$\chi(2)=1.49$	$\chi(3)=5.06$	$\chi(3)=4.72$	$\chi(2)=3.18$	$\chi(3)=11.41^{***}$	$\chi(3)=10.18^{**}$
Wald test	54.95^{***}	65.38^{***}	27.19^{***}	29.92^{***}	37.74^{***}	18.24^{***}	11.69^{***}	17.96^{***}	15.81^{***}	12.47^{***}
Demographic variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Habits and opinions	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Financial variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Nb. Obs.	7,911	7,911	7,911	7,911	7,911	4,498	4,498	7,911	4,498	4,498

Notes: See Tables 1 and 5. 2SLS estimates. The F-statistic from the first-stage OLS regression refers to the test of the null that the instruments are weak, the Wu-Hausman statistic refers to the test of the null hypothesis that OLS estimates are consistent (i.e., there is no endogeneity associated with the expectations), and the Sargan test is an over-identification test in the case of strictly more instruments than endogenous variables, where a rejection of the null means that the instruments are not exclusively affecting the dependent variable through the expectations. The F-statistics of the Wald test indicate the joined significance of all the regressors. The policy literacy score, the medium-run inflation and tax expectations, and the negative prior on monetary finance are included in all models. Financial variables are included only when they are jointly significant per a Wald test.

Table 8: The effects of tax and inflation expectations on support for policies

the medium-run inflation and tax expectations of each respondent, their policy literacy score and their priors on each policy option. Results are reported in Table 8.

The main message from this exercise is a strong and significant effect of expectations on opposition to monetary-financed policies, both on a systematic (Cols. I and II) and exceptional basis (Cols. III and IV) and on the support for fiscal consolidation, whether as budget cuts (Cols. V–VII) or tax increases (Cols. VIII–X). In all configurations, the F-statistics reject the presence of weak instruments – inflation expectations are better identified than tax expectations, in line with more salient inflation than tax expectations, as discussed in Section 3.2.1. The null hypothesis of the absence of endogeneity in the OLS model is also systematically rejected (see the DWH F-statistics), which is in line with the usual interpretation of expectations as endogenous variables in macroeconomic models.

that the error term is uncorrelated with the instruments.

Regarding monetary-financed policies, inflation expectations associated with such a funding option have a significantly negative effect on support for these policies. This effect is greater on the support for an exceptional monetary-financed stimulus than for a systematic one, which is not unexpected, given that inflation expectations are elicited within such an expectational context (illustrated by the example of pandemic-related government spending). Because dependent variables and the expectations are measured on the same Likert scale, we can interpret the estimated coefficients, bearing in mind that the OLS estimates rely on the interpretation of the Likert scale as a continuous variable. For instance, looking at Cols. III and IV, a coefficient associated with inflation expectations close to -1.00 means that a shift to the right of one item on the Likert scale of the inflation expectations (i.e., towards more agreement with the inflation consequences of monetary finance) results in a shift to the left of one item on the same scale of the support for a one-time monetary-financed fiscal stimulus (i.e., towards more opposition to such stimulus).

As for support for budget cuts, in line with the treatment effects discussed in Table 7, we find a significant effect of expectations only among respondents who found the treatments clear (Cols. VI–VII), not in the whole sample (Col. V). Among this subset of respondents, both higher inflation and tax expectations significantly resulted in more support for spending cuts, with a stronger effect of tax than inflation expectations. Similar expectational effects hold for support for tax increases (Cols. VIII–X).

We conclude this section with the following finding:

Finding 4 (Expectation channel of shift in opinions about policy options)

The information- provision treatments significantly affect respondents' expectations, which in turn affect their opinions on policy options. Higher inflation expectations related to mone-

tary finance result in less support for this funding option, while both monetary-finance-related inflation expectations and debt-issuance-related tax expectations result in more support for fiscal discipline.

Finally, we take a look at the answers to the recontact wave to uncover persistent treatment effects.

4.3 Persistent treatment effects in the recontact wave

Between 540 and 590 respondents per treatment took part in the recontact wave compared to 1,720 per treatment in the main wave. To deal with the smaller sample size, we group the treatments per information content and look at the effects of being exposed to the CB blog post (in Trs. `Video+CB`, `CB` and `Video+CB+Media`) or the CB text together with the video (in Trs. `Video+CB` and `Video+CB+Media`) on the reported opinions related to monetary finance, CB independence and fiscal consolidation (see items A, D and F of Question 11 and Item A of Question 12 in Appendix D.2, respectively). Results are reported in Table 9.

Even after controlling for a wide range of socio-economic variables, policy literacy, expectations and priors expressed in Wave 1, the CB communication, with or without the video, had significant persistent effects on respondents' opinions. Reading the CB communication several weeks prior to the recontact wave in combination (Col. II), or not (Col. I), with watching the video, significantly increased the opposition to systematic monetary finance along the same order of magnitude as in Wave 1 (see, again, Cols. I and IV of Table 5). Nevertheless, these persistent effects concern respondents who paid sufficient attention to the CB text in Wave 1.

	Systematic monetary finance		CB independence		Fiscal consolidation (budget cuts)	(tax increase)
The dependent variables are the support in Wave 2 for:						
	Readers only		All respondents		Readers only	Readers only
Being exposed to the...	**CB text**	**video +CB text**	**CB text**	**video +CB text**	**CB text**	**video +CB text**
	I	II	III	IV	V	VI
Info provision in Wave 1	−0.11**	−0.17***	−0.07**	0.11**	−0.01	0.06
	(0.05)	(0.06)	(0.04)	(0.06)	(0.05)	(0.06)
Constant	3.61***	3.60***	2.78***	2.99***	2.69***	2.71***
	(0.23)	(0.23)	(0.18)	(0.22)	(0.22)	(0.32)
Demographic variables	YES	YES	YES	YES	YES	YES
Habits and opinions	YES	YES	YES	YES	YES	YES
Financial variables	NO	NO	NO	NO	YES	YES
Nb. Obs.	1,643	1,643	2,707	2,707	1,643	1,643
−logLik.	2,279.9	2,278.3	3,578.3	3,578.6	1,914.8	3,144.5

Notes: See Tables 1 and 5. HC3-robust standard errors in brackets. The dependent variables are the five-point scale Likert items associated with the statement 'The European Central Bank should **always create money** to pay for the public expenses of the French government' (Cols. I and II), 'A central bank (such as the European Central Bank) should remain independent from its government(s)' (Cols. III and IV), and 'When the level of the **public debt** becomes **concerning**... The government should **cut** its public **expenses**' (Col. V) or '... The government should **increase** the overall amount of **taxes**' (Col. VI) in Wave 2. These correspond to items A, E (I) of Question 11 and items A and B of Question 12 in Appendix D.2, respectively. Cols. I, II, V and VI include only the respondents who said they had read the CB text, i.e., who spent at least 50% of the time required to read the whole text on this text page, as measured by a computational speech reader in each language. Financial variables are included when they are jointly significant. The dummy variables *video*, *CB text* and *video + CB text* equal one if the respondent in Wave 2 was exposed to Tr. Video, Video+CB or Video+CB+Media; Tr. CB, Video+CB or Video+CB+Media; and Video+CB or Video+CB+Media, respectively, in the first wave.

Table 9: Persistent treatment effects in the recontact wave

Perhaps counter-intuitively, reading the CB text significantly decreased support for CB independence in Wave 2 (Col. III), but this result may reflect the confusion discussed in Footnote 22. The introduction video may have connected the dots between operational independence and opposition to monetary finance, and when it preceded the CB communication piece, it significantly increased support for CB independence even after several weeks (Col. IV). The size of the effect is about a third smaller than the estimated value in the main wave, although the statements presented to the respondents were formulated in opposite directions in the two waves.[25] The indirect and limited treatment effects on support for fiscal discipline

[25]This is part of the obfuscation strategy. Therefore, in Cols. III and IV of Table 9, a positive sign is associated with *more* support for CB independence, whereas it is associated with *less* support for CB independence in Table 6 of Wave 1. This different framing may limit the direct comparison of the effect size across the two waves.

do not, however, survive in the recontact wave (Cols. VI and VII).

From this analysis, we highlight the following result:

Finding 5 (Persistence of the treatment effects)

The effects of exposure to the CB blog post preceded by the introduction video significantly persist several weeks later on both the opposition to systematic monetary finance and support for CB independence.

5   Conclusions

This paper explores what people know and believe regarding public finance options, in particular monetary finance, which has received extensive media coverage in recent years, especially in Europe and in the context of large fiscal packages in response to the COVID-19 pandemic. We do so by conducting an innovative large-scale cross-country household survey experiment on a representative sample of 8,601 Europeans.

First, by constructing an innovative 'macroeconomic-policy-literacy' score, we find that knowledge regarding monetary policy is somewhat limited. We contrast the cross-country and socio-demographic differences observed in our survey, in particular gender differences, with the existing literature on literacy and numeracy. Second, by relying on open-ended answers and textual analysis, we elicited opinions on monetary financing and public debt issuance. Higher policy literacy is associated with less support for monetary finance, enhanced support for fiscal discipline and more support for CB independence. Among participants with relatively high policy literacy, the primary concern associated with monetary financing

relates to inflation. By contrast, concerns about higher future taxes, whether attached to monetary financing or government debt issuance, are not prevalent among respondents, no matter their level of literacy. This result shows that people, even highly policy-literate individuals, tend to be myopic rather than purely forward looking. While myopia undermines the benefits of inter-temporal fiscal and monetary policy coordination, it may also imply that the policy conflicts need not lead to costs as dire as predicted by rational expectation models. Within the current macroeconomic context, how beliefs about future consequences of policy options are formed and may be influenced by CB communication deserves further investigation.

Third, through an RCT designed to emulate the tone of the public debate on monetary financing, we find strong evidence that providing a CB educational blog post opposing monetary financing can shift people's views on the matter and enhance support for fiscal discipline. When preceded by an introductory video summarizing the government budget constraint, these effects hold no matter the level of policy literacy. The enhancement of opposition to systematic monetary-financed fiscal policy and support for CB independent mandates also persist several weeks later in the follow-up obfuscated survey. This result shows that educational CB communication can affect people's support for policies and help limit the risk of opening Pandora's box which may result from an exceptional monetary-financed fiscal stimulus.

Furthermore, the additional provision of a general-audience opinion piece presenting a pro-monetary financing view tends to have a polarizing effect insofar as people adjust their opinions in line with the information that confirms their prior opinion. Moreover, further analysis of our data shows that people's tax and, in particular, inflation expectations asso-

ciated with the different public finance options are the key channel by which information provision affects views on monetary financing and fiscal consolidation.

These results provide important insights regarding CB communication. They shed light on the political economy consequences of views on monetary financing: by emphasizing the limits of monetary finance, CB communication can affect support for fiscal discipline and reduce public opposition to fiscal consolidation measures. Our results also suggest that CB communication, even on apparently complex topics, can lodge in people's minds.

The present research also raises further questions. Given the strong association between our measure of policy literacy and the opinions expressed on the policy options, it may be valuable to develop systematic and standardized measures of policy literacy and investigate to what extent increasing policy literacy relates to opinions and preferences about public finance options. Our results also suggest that people do not necessarily relate CB independent mandates with the inflation risks of monetary financing. It may be valuable to develop educational tools to improve knowledge on the matter to enhance the legitimacy of these non-elected institutions. Finally, while the two pieces of information debating monetary finance do so in the context of the COVID-19 pandemic government rescue plans, it is important to note that the relevance of the questions addressed in this paper goes well beyond this particular, albeit far-reaching, event. There is no shortage of challenges potentially requiring large government intervention and public adhesion, such as the financing of environmental transition or the reinforcement of health care capacities amid aging populations and the risks of future pandemics.

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What people believe about macro policies and what we can('t) do about it

Evidence from a large-scale, multi-country survey experiment

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Supplementary materials

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July 12, 2023

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A Inflation perceptions in Italy, France and the Netherlands

(a) France (b) Italy (c) Netherlands
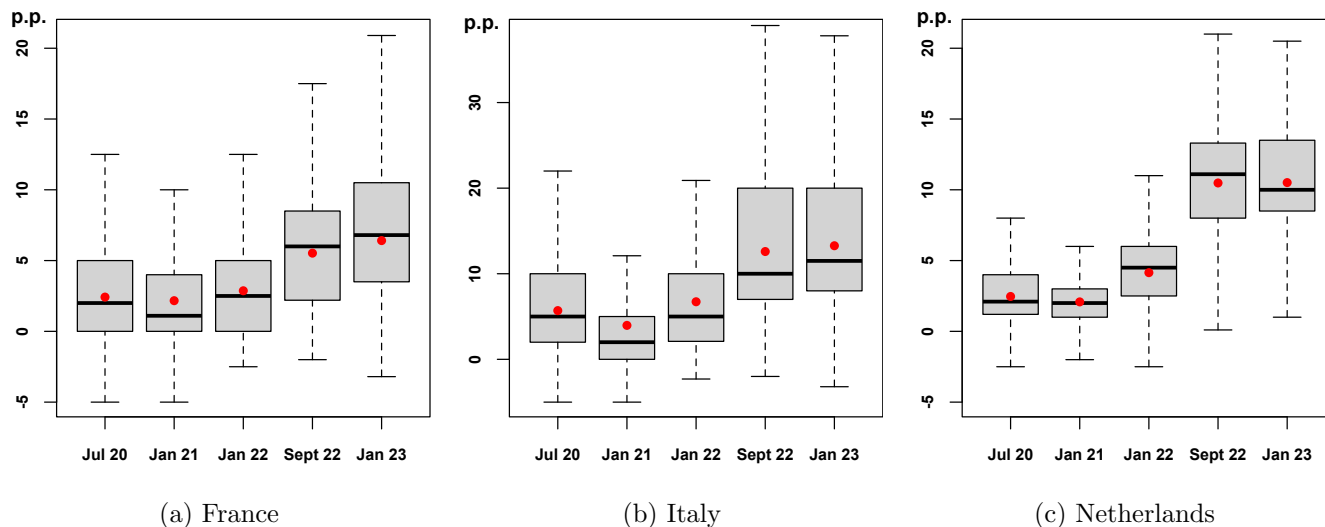
Figure 1: Household inflation perception over time

Source: Consumer Expectations Survey of the ECB, last accessed in July 2023. Note the different y-axis scales for each country. The data corresponds to the open-ended question of the monthly module: 'How much higher (lower) do you think prices in general are **now compared with 12 months ago** in the country you currently live in? Please give your best guess of the change in percentage terms. You can provide a number up to one decimal place.' (label: c1020). In line with the ECB documentation, the top and bottom 2% of the answers are excluded.

Our survey was conducted between Nov. 2021 and Feb. 2022 (March 2022 in France). In France (right panel) and in Italy (middle panel), the differences in interpolated medians i between July 2020 and January 2022 is less than 0.5% and in France, they are not statistically different (p-value = 0.76). Using one-step-ahead inflation expectations from Question c1120 yields the same pattern.

B   Overview of the data

B.1   Descriptive statistics

<div align="center">Socio-demographic variables</div>

Female	Dummy equal to 1 if the respondent declares being a female
Age	Age range: 1 if 18–29, 2 if 30–39, 3 if 40–49, 4 if 50–59, 5 if higher than 60
Education	ICSED education categories from Question 5, with 1 corresponding to low education (ICSED 0-2), 2 to middle education (ICSED 3-4), 3 to high education (ICSED 5-8)
Household size	Number of persons declared in the household
Working	Dummy equal to 1 if the respondent declares working in Question 7 (full-time employee, part-time employee, self-employed or small business owner)
France	Dummy equal to 1 if the survey is taken in France (0 otherwise)
Italy	Dummy equal to 1 if the survey is taken in Italy

<div align="center">Preferences, habits, views variables</div>

Right-wing views	Dummy equal to 1 if the respondent answers 4 (right) or 5 (very right) to Question 16.
Left-wing views	Dummy equal to 1 if the respondent answers 1 (very left) or 2 (left) to Question 16.
Trusting the ECB	Answering 4 or 5 (trust in the ECB) to Question 22 (conditional on declaring knowing the ECB, i.e., answering 'yes' to Question 21).
Financial planner	Sum of the two items in Question 15, taken from the OECD financial literacy toolkit and where, for each item, 'strongly disagree' is given the value 1, ..., 'strongly disagree,' the value 5.
Financial newspaper use	Answer to Question 14, for financial newspaper reading habits. 1 denotes 'never,' ..., 5 denotes 'very often.'
High subjective knowledge	Dummy equal to 1 if the respondent answers that they have 'much more' or 'more' knowledge than others, in Question 17.
Inflation expectations	Numerical value ranging from 1 (corresponding to the answer 'increase a lot') to 5 (corresponding to 'decrease a lot') to Question 24; 'NA' is assigned to 'I don't know.'

<div align="center">Financial variables</div>

Income	Categorical variable, where 'low' is defined as the bottom 30% equalized on the basis of household size, 'high' the top 30%, 'middle,' the rest of the distribution, and the rest being 'missing income,' i.e., not disclosed.

Net wealth	Categorical variable based on the computation of the respondents' declared net wealth. The total wealth (resp. debt) score is computed as the sum of the wealth (resp. debt) item numbers in each wealth (resp. debt) category (see, resp. questions 11 and 12), normalized by the number of items. Net wealth is the difference between the total wealth and debt scores. The categories are 'negative' for a negative score, 'low' for a score between 0 and 1, 'medium' between 1 and 2, 'high' higher than 2, and 'missing' when the respondent has chosen not to declare wealth and/or debt.
COVID-19 financial loss	Answer to Question 23, with 1 coded as 'very negative consequences' and 5 coded as 'very positive consequences.'

<div align="center">

Prior (pre-textual information) beliefs

</div>

Negative prior on monetary financing	Dummy equal to 1 if the respondent answers 'rather drawbacks' to Question 39, 0 if 'rather advantages' or 'I don't know.'

<div align="center">

Posterior (post-textual information) policy-related expectations

</div>

Tax expectations if debt issuance (τ_B^e)	Answer to Question 48A takes the value of 1 if the respondent answers 'strongly disagree,' ..., 5 if 'strongly agree' that taxes will be likely to increase.
Inflation expectations if monetary finance (π_M^e)	Answer to Question 49.B takes the value of 1 if the respondent answers 'strongly disagree,' ..., 5 if 'strongly agree' that prices will be likely to increase faster.

Table 1: List and definition of the variables used in the main text

Variable	Levels	Full sample		NL		FR		IT	
		n	%	n	%	n	%	n	%
Political view (Q16)	1	338	3.9	64	2.9	143	3.4	131	6.0
	2	1555	18.1	406	18.4	710	16.9	439	19.9
	3	2860	33.2	750	34.1	1427	34.0	683	31.0
	4	1991	23.1	620	28.2	931	22.2	440	20.0
	5	576	6.7	96	4.4	357	8.5	123	5.6
	NA	1281	14.9	264	12.0	632	15.1	385	17.5
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Financial planner (Q15A)	1	315	3.7	64	2.9	164	3.9	87	4.0
	2	695	8.1	198	9.0	348	8.3	149	6.8
	3	2595	30.2	698	31.7	1171	27.9	726	33.0
	4	3724	43.3	967	44.0	1781	42.4	976	44.3
	5	1272	14.8	273	12.4	736	17.5	263	11.9
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Budget attention (Q15B)	1	119	1.4	36	1.6	75	1.8	8	0.4
	2	307	3.6	119	5.4	154	3.7	34	1.5
	3	1168	13.6	402	18.3	526	12.5	240	10.9
	4	4178	48.6	1131	51.4	1846	44.0	1201	54.6
	5	2829	32.9	512	23.3	1599	38.10	718	32.6
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Financial newspaper use (Q14)	1	3551	41.3	1069	48.6	1778	42.3	704	32.0
	2	2075	24.1	499	22.7	1014	24.1	562	25.5
	3	1817	21.1	430	19.6	823	19.6	564	25.6
	4	913	10.6	160	7.3	452	10.8	301	13.7
	5	245	2.9	42	1.9	133	3.2	70	3.2
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Prior on monetary financing (Q39)	Negative	1802	20.9	326	14.8	937	22.3	539	24.5
	Positive	3657	42.5	1150	52.3	1702	40.5	805	36.6
	None	3142	36.5	724	32.9	1561	37.2	857	38.9
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Subjective knowledge (Q17)	1	595	6.9	137	6.2	305	7.3	153	7.0
	2	1378	16.0	377	17.1	635	15.1	366	16.6
	3	3881	45.1	928	42.2	1975	47.0	978	44.4
	4	1609	18.7	461	20.9	686	16.3	462	21.0
	5	541	6.3	118	5.4	269	6.4	154	7.0
	NA	597	6.9	179	8.1	330	7.9	88	4.0
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0

Variable	Levels	Full sample		NL		FR		IT	
		n	%	**n**	%	**n**	%	**n**	%
Know and trust	0	6924	80.5	1741	79.1	3415	81.3	1768	80.3
the ECB (Q22)	1	1677	19.5	459	20.9	785	18.7	433	19.7
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Inflation	1	3883	45.1	808	36.7	1874	44.6	1201	54.6
expectations (Q24)	2	2858	33.2	841	38.2	1280	30.5	737	33.5
	3	1005	11.7	276	12.6	562	13.4	167	7.6
	4	370	4.3	129	5.9	207	4.9	34	1.5
	5	188	2.2	58	2.6	115	2.7	15	0.7
	NA	297	3.5	88	4.0	162	3.9	47	2.1
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
COVID-19 financial	0	4987	58.0	1582	71.9	2389	56.9	1016	46.2
loss (Q23)	1	3614	42.0	618	28.1	1811	43.1	1185	53.8
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Net wealth range	High	667	7.8	187	8.5	267	6.4	213	9.7
(Qs11-12)	Low	2811	32.7	585	26.6	1601	38.1	625	28.4
	Medium	1431	16.6	337	15.3	767	18.3	327	14.9
	Negative	1510	17.6	254	11.6	916	21.8	340	15.4
	Missing	2182	25.4	837	38.0	649	15.4	696	31.6
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0

Table 2: Descriptive statistics of the main control variables

Net wealth	n	Min	Median	Mean	Max	S.d.	#NA
Full sample	6419	-1.6	0.6	0.8	7.0	1.0	2182
NL	1363	-1.5	0.7	0.9	7.0	1.0	837
FR	3551	-1.6	0.5	0.7	5.4	0.9	649
IT	1505	-1.6	0.7	0.9	7.0	1.1	696

<u>Notes</u>: Because the financial answers are categorical, we normalize each component of the household's balance sheet as declared by each respondent by the number of answer categories (seven to nine categories depending on the item and country) and compute the sum to obtain a measure of assets (Q11) and liabilities (Q12). We then take the difference to compute the net wealth.

Table 3: Descriptive statistics of the net wealth variable

Variable	Levels	Full sample n	%	NL n	%	FR n	%	IT n	%
Tax expectations	1	326	3.8	57	2.6	179	4.3	90	4.1
if debt issuance	2	864	10.1	168	7.6	457	10.9	239	10.9
(Q48A)	3	2041	23.7	538	24.4	963	22.9	540	24.5
	4	4439	51.6	1225	55.7	2055	48.9	1159	52.7
	5	931	10.8	212	9.6	546	13.0	173	7.9
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Inflation	1	209	2.4	26	1.2	123	2.9	60	2.7
expectations if	2	624	7.2	120	5.5	331	7.9	173	7.9
debt issuance (Q48B)	3	1885	21.9	489	22.2	893	21.3	503	22.9
	4	4527	52.6	1242	56.5	2068	49.2	1217	55.3
	5	1356	15.8	323	14.7	785	18.7	248	11.3
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Tax expectations	1	274	3.2	34	1.6	164	3.9	76	3.5
if monetary	2	1228	14.3	265	12.1	639	15.2	324	14.7
finance (Q49A)	3	2532	29.4	635	28.9	1207	28.7	690	31.4
	4	3749	43.6	1049	47.7	1744	41.5	956	43.4
	5	818	9.5	217	9.9	446	10.6	155	7.0
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0
Inflation	1	214	2.5	32	1.4	129	3.1	53	2.4
expectations if	2	753	8.8	150	6.8	396	9.4	207	9.4
monetary finance	3	2260	26.3	553	25.1	1060	25.2	647	29.4
(Q49B)	4	4057	47.2	1136	51.6	1874	44.6	1047	47.6
	5	1317	15.3	329	14.9	741	17.6	247	11.2
	all	8601	100.0	2200	100.0	4200	100.0	2201	100.0

Table 4: Descriptive statistics of the Likert-scale answers on macroeconomic adjustments

B.2 Correlation between variables

	Age	Working	Income	Financial behavior	Net wealth	Education
Working	-0.35***					
Income	0.17***	0.22***				
Financial behavior	0.04**	0.00	0.03*			
Net wealth	0.11***	0.03*	0.34***	0.05***		
Education	-0.17***	0.22***	0.20***	0.04**	0.13***	
COVID-19 financial loss	-0.09***	0.03*	-0.18***	0.07***	-0.15***	-0.02

Notes: See Table 1 for the definitions of the variables. Pearson correlation tests: $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$; full sample (8,601 observations).

Table 5: Correlation between the household-finance-related variables (full sample)

	Political orientation	Gender (female= 1)	Subjective knowledge	Inflation expectations	Reader of financial newspapers	Know of and trust the ECB	Negative prior on monetary finance
Gender (female= 1)	-0.06***						
Subjective knowledge	0.03*	-0.18***					
Inflation expectations	0.00	0.00	-0.01				
Reader of financial newspapers	0.05***	-0.12***	0.29***	0.03**			
Know of and trust the ECB	0.02	-0.08***	0.15***	0.07***	0.17***		
Negative prior on monetary finance	0.04***	0.03**	-0.04***	-0.03**	-0.02*	-0.11***	
Negative prior on debt issuance	0.01	-0.08***	0.09***	-0.06***	0.02	-0.01	0.19***

Notes: See Table 1 for the definitions of the variables. Pearson correlation tests: *p<0.1; **p<0.05; ***p<0.01; full sample (8,601 observations).

Table 6: Correlation between the information- and opinion-related variables (full sample)

Expectations of ...	inflation if debt issuance	tax if debt issuance	inflation if monetary finance
inflation if debt issuance			
tax if debt issuance	0.55***		
inflation if monetary finance	0.54***	0.39***	
tax if monetary finance	0.48***	0.44***	0.59***

Notes: See Table 1 for the definitions of the variables. Pearson correlation tests: *p<0.1; **p<0.05; ***p<0.01; full sample (8,601 observations).

Table 7: Correlation between posterior policy-dependent expectations (full sample)

	Support for CB independence	Support for exceptional monetary finance	Support for systematic monetary finance	Support for budget cuts
Support for exceptional monetary finance	0.26***			
Support for systematic monetary finance	0.21***	0.52***		
Support for budget cuts	-0.02*	-0.11***	-0.02*	
Support for tax increase	0.06***	0.01	0.03*	0.15***

Notes: See Table 1 for definitions of the variables. Pearson correlation tests: *p<0.1; **p<0.05; ***p<0.01; full sample (8,601 observations).

Table 8: Correlation between the main post-treatment dependent variables

B.3   Representativity of our sample

The gender and age distributions are taken from Eurostat, and the regional distributions are aggregated from the NUTS-2 distribution. For income, the question is 'What is the average monthly take-home income of your household, which means the money left to spend after paying income taxes and social contributions?' The reported income is then equivalized using the OECD formula on the grounds of family composition and compared with the empirical equivalized household net income distribution to classify the respondent within the bottom 30%, the middle 40% or the top 30%. In the table, the population income brackets are adjusted for the proportion of non-respondents. The survey answers consist of the following 10 non-adjusted income brackets:

In France: 1= Less than 13,300 euros; 2= Between 13,301 and 19,800 euros; 3= Between 19,801 and 23,000 euros; 4= Between 23,001 and 26,700 euros; 5= Between 26,701 and 30,600 euros; 6= Between 30,601 and 34,900 euros; 7= Between 34,901 and 39,200 euros; 8= Between 39,201 and 44,800 euros; 9= Between 44,801 and 54,100 euros; 10= More than 54,100 euros.

In Italy: 1= Less than 9,000 euros; 2= Between 9,001 and 14,000 euros; 3= Between 14,001 and 17,500 euros; 4= Between 17,501 and 21,000 euros; 5= Between 21,001 and 25,000 euros; 6= Between 25,001 and 29,500 euros; 7= Between 29,501 and 36,000 euros; 8= Between 36,001 and 43,500 euros; 9= Between 43,501 and 56,000 euros; 10= More than 56,000 euros.

In the Netherlands: 1= Less than 13,000 euros; 2= Between 13,001 and 17,000 euros; 3= Between 17,001 and 20,000 euros; 4= Between 20,001 and 24,000 euros; 5= Between 24,001 and 28,000 euros; 6= Between 28,001 and 33,000 euros; 7= Between 33,001 and 39,000 euros; 8= Between 39,001 and 46,000 euros; 9= Between 46,001 and 58,000 euros; 10= More than 58,000 euros.

The unemployment rate is taken from the ILOSTAT database for 2021. Education is categorized using the ISCED classification for 2019 for cross-country harmonization – low education corresponds to the levels 0 to 2, middle education to levels 3 and 4 and high education to levels 5 to 8 – and the population distribution is taken from Eurostat. Household size distributions correspond to the most recent UN-DESA data (year 2011 for NL and Italy and 2015 for France).

|	France		Italy		Netherlands		Cross-treatment
	Our sample	Population	Our sample	Population	Our sample	Population	p-values
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Survey targets							
Female	0.51	0.52	0.51	0.51	0.50	0.50	0.24
18–29 y.o.	0.20	0.20	0.17	0.17	0.21	0.21	0.31
30–39 y.o.	0.18	0.18	0.16	0.16	0.17	0.17	0.15
40–49 y.o.	0.18	0.18	0.21	0.20	0.17	0.17	0.24
50–59 y.o.	0.19	0.19	0.22	0.21	0.20	0.20	0.33
$\geq$ 60 y.o.	0.26	0.25	0.25	0.26	0.25	0.25	0.78
Ile de France	0.18	0.18					0.25
Bassin Parisien	0.15	0.16					0.66
Nord-Pas-de-Calais	0.06	0.06					0.44
Est	0.08	0.08					0.60
Ouest	0.13	0.13					0.86
Sud-Ouest	0.11	0.11					0.87
Centre-Est	0.12	0.12					0.84
Méditerannée and DOM	0.16	0.16					0.87
Nord-Ovest			0.27	0.27			0.95
Nord-Est			0.20	0.19			0.20
Centro			0.20	0.20			0.23
Sud			0.23	0.23			0.70
Isole			0.11	0.11			0.99
Noord					0.10	0.10	0.60
Oost					0.20	0.21	0.87
West					0.49	0.48	0.92
Zuid					0.20	0.21	0.40
Education Bracket 1	0.07	0.22	0.27	0.39	0.26	0.24	0.95
Education Bracket 2	0.51	0.43	0.50	0.43	0.34	0.39	0.41
Education Bracket 3	0.42	0.35	0.23	0.18	0.40	0.37	0.70
Income Bracket 1	0.43	0.29	0.42	0.26	0.37	0.26	0.87
Income Bracket 2	0.34	0.38	0.36	0.34	0.35	0.35	0.48
Income Bracket 3	0.19	0.29	0.08	0.26	0.15	0.26	0.87
Income undeclared	0.04	-	0.14	-	0.13	-	0.86
Other statistics							
Unemployment	0.05	0.08	0.11	0.10	0.03	0.04	0.44
Employment	0.61	0.68	0.54	0.59	0.63	0.81	0.85
Household size (avg)	2.6	2.3	2.9	2.4	2.4	2.3	0.69
One member	0.18	0.34	0.10	0.31	0.24	0.35	0.77
Two or three members	0.57	0.47	0.59	0.47	0.54	0.46	0.22
Four or five members	0.23	0.17	0.30	0.21	0.20	0.18	0.39
More than five members	0.02	0.02	0.01	0.01	0.02	0.01	0.59

Notes: The survey targets correspond to the quotas for the recruitment of the panelists as per the contract with the marketing-research company. The contract does not aim to match the other statistics. Some flexibility may be necessary regarding income, and to a lesser extent the education quotas given the large size of our sample. The columns 'Population' refer to the statistics in the general population in a given country as described in this appendix section. The last column reports the p-values associated with the χ^2-test of equality of proportions of a given subset of the population across the five treatments. A p-value higher than 5% indicates that no subset of the population is significantly over-represented in one treatment with respect to the four others.

Table 9: Sample characteristics

C Additional results
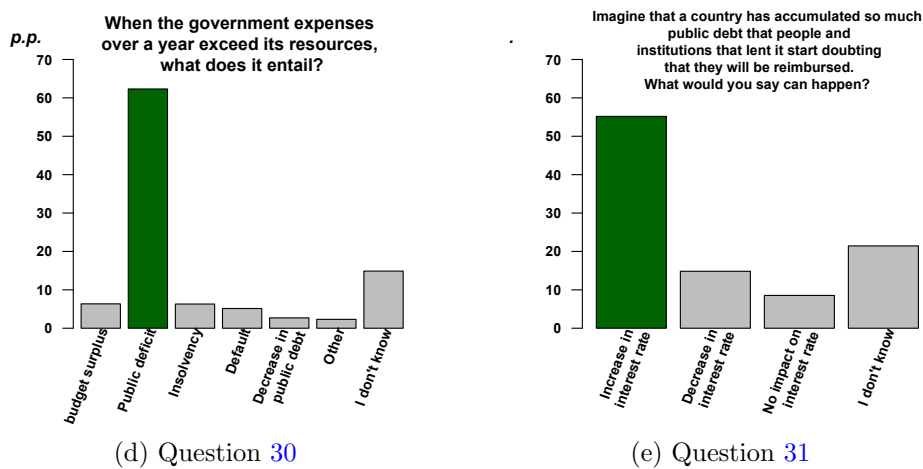
C.1 Answers to the five macroeconomic-policy-literacy questions in Wave 1

Panel A -- Monetary-policy questions

(a) Question 27

(b) Question 28
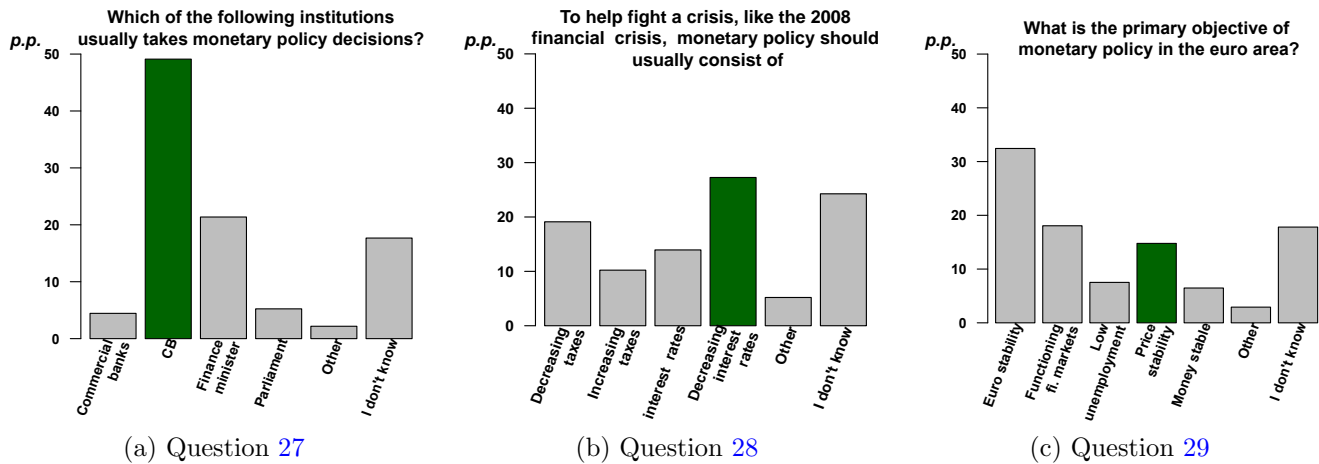
(c) Question 29

Panel B -- Fiscal-policy questions

(d) Question 30

(e) Question 31

Notes: Correct answers are highlighted in green; full sample.

Figure 2: Distribution of the answers to the macroeconomic-policy-literacy questions

C.2 Open-ended answers of prior beliefs about debt-financed public expenses

(a) Risks of debt issuance (6,671 obs.)

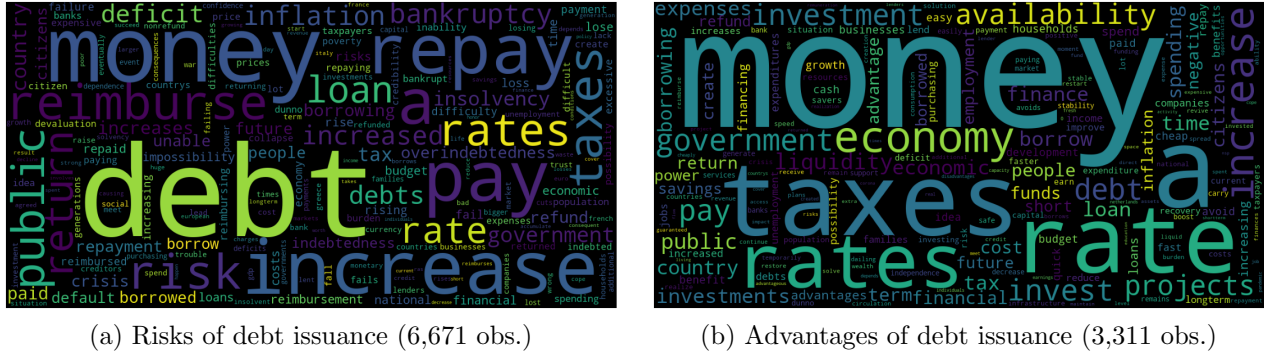(b) Advantages of debt issuance (3,311 obs.)

Figure 3: Prior views on debt issuance

<u>Notes</u>: The survey questions are the open-ended questions 34 and 35 in Appendix D. The order of the two sub-questions are randomized over the entire sample. The figures represent the most commonly mentioned words, where their relative sizes are proportional to their relative frequencies over the entire sample.

C.3 Determinants of opinions

	(I) Negative prior on monetary finance	(II) Opposition to CB independence	(III) Support for monetary finance (systematic)	(IV) Support for monetary finance (exceptional)	(V) Support for fiscal consolidation (budget cuts)	(VI) Support for fiscal consolidation (tax increase)
			Dependent variable:			
			Demographic variables			
Female	−0.11***	0.01	0.02	−0.01	−0.004	−0.06***
	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age	0.01***	0.003***	−0.001*	−0.002**	0.01***	−0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Education	0.21***	−0.09***	−0.13***	−0.07***	0.07***	0.05***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)
Household size	−0.06***	0.03***	0.04***	0.01	−0.01	0.003
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Working	−0.13***	0.07**	0.08***	0.03	−0.04*	−0.03
	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
France	−0.66***	−0.15***	0.25***	0.09***	0.05**	−0.14***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)
Italy	−0.77***	−0.06*	0.34***	0.40***	−0.16***	−0.37***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
			Habits and opinion variables			
Left-wing view	0.03	−0.02	−0.07**	0.02	−0.05*	0.13***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Right-wing view	−0.09**	0.12***	−0.02	−0.002	0.12***	−0.03
	(0.04)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)
Trusting	−0.50***	0.005	0.06**	0.12***	0.20***	0.37***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Financial planner	0.02	0.03*	0.01	0.03**	0.14***	0.004
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Financial newspaper readers	−0.12***	0.05***	0.06***	0.04***	−0.01	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
High subjective knowledge	−0.04	0.01	−0.08***	−0.01	0.01	0.02
	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)
Low policy literacy score	−0.21***	0.18***	0.29***	0.09***	−0.21***	0.08***
	(0.04)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
High policy literacy score	0.15***	−0.24***	−0.28***	−0.07**	0.13***	0.03
	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
			Financial variables			
Low income	−0.27***	0.13**	0.02	0.07	−0.06	0.03
	(0.07)	(0.05)	(0.04)	(0.05)	(0.04)	(0.05)

Continued on next page

	(I)	(II)	(III)	(IV)	(V)	(VI)
	Negative prior on monetary finance	Opposition to CB independence	Support for monetary finance (systematic)	(exceptional)	Support for fiscal consolidation (budget cuts)	(tax increase)
Middle income	−0.11	0.12**	0.01	0.10**	0.01	0.10**
	(0.07)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
High income	0.004	0.06	−0.05	0.10**	0.07	0.03
	(0.07)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
Negative net wealth	0.08	−0.04	0.04	0.08	−0.09**	−0.25***
	(0.07)	(0.06)	(0.05)	(0.05)	(0.04)	(0.05)
Low net wealth	−0.001	−0.01	−0.01	0.03	−0.04	−0.17***
	(0.06)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
Medium net wealth	0.20***	−0.03	−0.11**	−0.02	−0.02	−0.15***
	(0.06)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
Wealth not declared	0.20***	−0.01	−0.07	−0.01	−0.08*	−0.15***
	(0.06)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
COVID-19 financial loss	−0.07**	0.004	−0.05**	−0.0002	−0.02	−0.15***
	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	0.99***	2.76***	2.52***	2.75***	2.65***	2.99***
	(0.15)	(0.12)	(0.10)	(0.11)	(0.10)	(0.11)
−log-Lik.	3,282.1	12,837.4	11,637.5	11,918.4	10,941.7	11,907.7
Nb. Obs.	5,544	8,585	8,585	8,585	8,585	8,585
Wald statistic $F(8)$	3.04***	1.97**	4.06***	2.59***	3.74***	11.11***

Table 10: Generalized least-squares model of the respondents' views

<u>Notes</u>: *p<0.1; **p<0.05; ***p<0.01. All explanatory variables are described in Appendix B.1. CESEs in brackets. The Wald statistic refers to the F-statistic of the test of joined significance of the financial variables. In Col. I, the model is a logit model where the dependent variable is equal to 1 if the respondent answers 'rather drawbacks' to Question 39 and 0 if they answer 'rather advantages' (i.e., respondents who answer 'I don't know' are excluded). In Cols. II to VI, the models are OLS models where the dependent variables range from 1 ('strongly disagree') to 5 ('strongly agree') to questions 50, 51, 53, 46, and 47, respectively.

C.4 First-stage regressions: Policy-related expectations and treatments

	I	II	III	IV	V	VI	VII	VIII
Dependent variable:	Monetary finance-related inflation expectations (π^e_M)				Debt-related tax expectations (τ^e_B)			
Tr. `CB`	0.15***				0.04*			
	(0.02)				(0.03)			
Tr. `Video+CB`		0.10***				0.04		
		(0.02)				(0.03)		
Tr. `Video`			−0.08***				0.02	
			(0.03)				(0.03)	
Tr. `Video+CB+Media`				−0.12***				−0.12***
				(0.03)				(0.03)
Constant	3.14***	3.16***	3.19***	3.21***	3.03***	3.03***	3.04***	3.07***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)

Notes: See Tables 1 and Tables 6. All controls included in the second-stage regressions presented in Table 8, including financial variables, are also included.

Table 11: First-stage OLS models

C.5 Answers to the five macroeconomic policy literacy scores in Wave 2

| | Dependent variable: macroeconomic policy literacy score in Wave 2 | | |
	(I)	II	III
Female	−6.90***	−4.39***	−4.10***
	(1.04)	(1.08)	(1.07)
Age	−0.13***	−0.19***	−0.22***
	(0.04)	(0.04)	(0.05)
Education	4.68***	2.88***	2.48***
	(0.87)	(0.87)	(0.88)
Household size	0.94*	0.64	0.55
	(0.48)	(0.48)	(0.51)
Working	0.18	0.02	0.06
	(1.14)	(1.13)	(1.15)
Left-wing orientation		−0.03	−0.05
		(1.37)	(1.37)
Right-wing orientation		1.46	0.85
		(1.22)	(1.23)
Trusting the ECB		5.32***	4.73***
		(1.51)	(1.53)
Financial planner		−1.57**	−1.53**
		(0.68)	(0.69)
Financial newspaper reader		2.82***	2.37***
		(0.49)	(0.49)
Subjective knowledge		2.48*	2.21
		(1.41)	(1.41)
Score in Wave 1		1.36***	1.15***
		(0.42)	(0.43)
Low income			7.07***
			(2.38)
Medium income			9.10***
			(2.35)
High income			6.58***
			(2.46)
Low net wealth			−9.78***
			(2.59)
Medium net wealth			−6.34**
			(2.63)
Negative net wealth			−10.68***
			(2.72)
Missing net wealth			−8.49***
			(2.86)
COVID-19 financial loss			0.03
			(1.07)
Constant	13.01***	14.64***	20.11***
	(3.68)	(4.39)	(5.60)
Nb Obs.	2,808	2,808	2,808
−logLik.	13,275.6	13,224.2	13,205.9
Wald F-stat.	-	13.67***	4.70***

Notes: See Table 1. *p<0.1; **p<0.05; ***p<0.01. HC3 robust sd.

Table 12: Socio-economic determinants of knowledge score in Wave 2

D   Questionnaire

D.1   Main wave

CONSENT FORM:

- I consent **voluntarily** to be a participant in this study and understand that I can withdraw from the study at any time, without having to give a reason.

  Agree; Disagree

- I have been informed that the information I will provide will be used for **academic research purposes only** by a **non-partisan** team.

  Agree; Disagree

- I have been informed that **my personal information will remain strictly anonymous** and it will **never be possible** for the researchers, the survey company or anyone else to **link any of my data to my name**.

  Agree; Disagree

- I understand that taking part in the study involves filling out a questionnaire with personal information, **including disclosure of financial information**.

  Agree; Disagree

SURVEY BEGINNING:

We are a **non-partisan group** of academic researchers from several European universities. Our goal is to understand peoples views on economic policies. Our survey will give you an opportunity to express your own views.

It is very important for the success of our research that you **answer honestly** and **read the questions carefully** before answering. Please be sure to spend enough time reading and understanding the questions. If you do not do so, you may jeopardize the quality and interest of our study, and waste the substantial amount of time and resources we invested in this project.

It is also very important for the success of our research project that you complete the entire survey, once you have started. This survey should take (on average) less than 30 minutes to complete. The results will be purely anonymous, it will never be possible to identify you personally.

Yes, I agree to participate; No, I do not agree to participate

1. What is your gender?

   Male; Female; Non-binary

2. What is your age?

3. *(France and Italy)* In which postal code do you live?

3. *(Netherlands)* In which city do you live?

4. Which region are you from?

   (Italy) Nord-Ovest; Nord-Est; Centro; Sud; Isole

   (France) Ile de France; Bassin Parisien (Bourgogne, Centre, Champagne-Ardenne, Normandie, Picardie); Nord-Pas-de-Calais; Est (Franche-Comté, Alsace, Lorraine); Ouest (Bretagne, Pays de la Loire, Poitou-Charentes); Sud-Ouest (Aquitaine, Limousin, Midi-Pyrénées); Centre-Est (Auvergne, Rhône-Alpes); Méditerranée (Languedoc-Roussillon, Provence-Alpes-Côte d'Azur, Corse); Départements d'outre-mer

   (Netherlands) Groningen; Friesland; Drenthe; Overijssel; Guelders; Flevoland; Utrecht; North Holland; South Holland; Zealand; North Brabant; Limburg

5. Which category best describes your highest level of education?

   (France) Ecole primaire ou moins; Collège; Lycée général, professionnel, technologique; Capacit en droit, diplôme d'accès aux études universitaires; Sections de techniciens supérieurs (BTS), diplôme universitaire technologique (IUT), courts diplômes post-secondaires; Licence universitaire (système LMD), Licence Professionnelle, Classes Prépas (CPGE), etc.; Diplôme de Master ou équivalent (systme LMD), formation ingénieurs, écoles de commerce; Doctorat ou équivalent

   (Italy) Fino all'istruzione primaria: scuola materna; Istruzione primaria: scuole elementari; Istruzione secondaria inferiore: Licenza media; Istruzione secondaria superiore: Diplomato presso un Istituto Professionale, un Istituto Tecnico, un Liceo; Istruzione post-secondaria non terziaria: Qualifica professionale regionale post-diploma, Certificato di specializzazione tecnica superiore (IFTS), ...; Istruzione terziaria (primo livello): Laurea Triennale di primo livello, Laurea Breve; Istruzione terziaria (secondo livello): Laurea specialistica o magistrale, Master 2 livello, Specializzazioni post laurea magistrale,...; Dottorato di ricerca

   (Netherlands) enige middelbare school of minder; middelbare schooldiploma; 1 jaar MBO; afgeronde MBO; 1 jaar HBO; afgeronde HBO; 1 jaar universiteit; Driejarige universitaire graad of Bachelor; Vierjarige universitaire graad: masterdiploma, Professionele graad; Doctoraat / gepromoveerd

6. (if education higher than high school) Which of the following comes closest to your **main field** of study?

   Business; Mathematics; Physics; IT; Medicine; Biology; Chemistry; Economy; Political science; Law; Public administration; Psychology; Social sciences; Humanities; None of the above

7. What is your current employment status?

   Full-time employee; Part-time employee; Self-employed or small business owner; Unemployed and looking for work; Student; Retired; Not currently working and not looking for work (full-time parent, etc.); Other

8. Your **household** refers to all the people permanently living with you in your main residence, excluding roommates and renters. How many people, **including yourself**, are in your household?

9. How many children younger than 14 years old live in your household?

We will now ask about your finances. This is the only part of the survey where we do so and you may always choose not to disclose any number but keep in mind that all your answers will **always remain anonymous, we have no way to link your name to the numbers you fill in.**

10. What is the average **monthly take-home income** of your household, which means the money left to spend after paying income taxes and social contributions?

    (Italy) 0€ 750€; 750€ 1150€; 1151€ - 1450€; 1451€ - 1750€; 1750€ - 2000€; 2001€ - 2450€; 2450€ - 3000€; 3001€ - 3600€; 3600€ - 4600€; more than 4600€; I'd rather not disclose / I do not know

    (France) 0€ 1100€ ; 1101€ 1650€; 1651€ - 1900€; 1901€ - 2200€; 2201€ - 2250€; 2251€ - 2900€; 2901€ - 3300€; 3301€ - 3700€; 3701€ - 4500€; more than 4500€; I'd rather not disclose / I do not know

    (Netherlands) 0€ 1100€ ; 1100€ 1400€; 1400€ - 1650€; 1650€ - 2000€; 2200€ - 2300€; 2300€ - 2750€; 2750€ - 3350€; 3350€ - 3800€; 3800€ - 4800€; more than 4800€; I'd rather not disclose / I do not know

11. The **wealth** of your household corresponds to everything you own that has a substantial financial value.

    Could you tell us **approximately** how much wealth your household has in each of the following categories? (if you don't have any wealth, select 'None' to all)

    - Money that is easily available, such as cash and money in a bank account (checking or saving account)

      None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

    - Real estate

      None; below 10 000€; between 10 000€ and 50 000€; between 50 000€ and 100 000€; between 100 000€ and 200 000€; between 200 000€ and 500 000€; between 500 000€ and 1 million€; above 1 million€; I'd rather not disclose / I do not know

    - Money in pension funds

      None; below 10 000€; between 10 000€ and 50 000€; between 50 000€ and 100 000€; between 100 000€ and 200 000€; between 200 000€ and 500 000€; between 500 000€ and 1 million€; above 1 million€; I'd rather not disclose / I do not know

    - Investments in stocks (other than via pension funds)

      None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

    - Investment in bonds and other fixed-income securities (other than via pension funds)

      None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

- Gold and other precious metals, art, jewellery, etc.

  None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

- Bitcoin and other digital currencies

  None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

- Other

  None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

12. The **debt** of your household is the total amount of money that you and any member in your household still owes to banks or other persons or entities from which they borrowed.

    Could you tell us **approximately** how much debt your household has in each of the following categories? (if you don't have any debt, select 'None' to all)

    - Mortgages:

      (France and Italy) None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; between 100 000€ and 150 000€; between 150 000€ and 200 000€; above 200 000€; I'd rather not disclose / I do not know

      (Netherlands) None; below 10 000€; between 10 000€ and 50 000€; between 50 000€ and 100 000€; between 100 000€ and 200 000€; between 200 000€ and 500 000€; between 500 000€ and 1 000 000€; above 1 000 000€; I'd rather not disclose / I do not know

    - Consumption loans, including car loans, and credit card debt:

      None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

    - Student loans:

      None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

    - Other:

      None; below 1500€; between 1 500€ and 5 000€; between 5 000€ and 10 000€; between 10 000€ and 20 000€; between 20 000€ and 50 000€; between 50 000€ and 100 000€; above 100 000€; I'd rather not disclose / I do not know

    Next, we would like to ask you about some of your opinions and habits.

13. To stay informed about the **news in general**, could you name one particular media that you often use? (for example the name of a TV channel, a radio station, a newspaper, a website, etc.)

(box)

'I don't use any media'

14. To stay informed about **economic issues in particular**, how often do you use each of the following sources of information?

    (Never; Rarely; Occasionally; Regularly; Very often)

    - Financial newspapers or magazines (print or online)
    - General newspapers or magazines (print or online)
    - Radio
    - Television
    - Social media (Facebook, Twitter, etc.)

15. How much do each of the following statements apply to you?

    (strongly disagree; disagree; neither agree nor disagree; agree; strongly agree)

    - "Before buying something I carefully consider whether I can afford it"
    - "I set long term financial goals and strive to achieve them"

16. Regarding **politics**, people usually speak about "left" and "right" -oriented views. Where would you locate yourself on this scale?

    (cursor) 1 (very much left) 2 3 4 5 (very much right); I don't know

17. Regarding **national economic issues**, compared to most people, would you consider yourself...

    Much less knowledgeable; Somewhat less knowledgeable; About as knowledgeable; Somewhat more knowledgeable; Much more knowledgeable; I don't know

18. Think about the way the government managed the expenses and taxes in your country in the years before the pandemic. How did this affect your household financially?

    I lost a lot; I somewhat lost; neither lost nor won; I somewhat benefited; I benefited a lot

19. Think about **well-distinguished economists** (such as Nobel prize winners). In general, how much do you **trust them** to make balanced and objective economic policy recommendations?

    Scale from 1 to 5, "no trust at all" to "full trust"

20. In general, how much do you **trust** the governmental institutions in *country name*?

    Scale from 1 to 5, "no trust at all" to "full trust"

21. Have you ever heard of the European Central Bank?

    Yes; no; I don't know

22. (if yes to Question) In general, how much do you trust the European Central Bank?

    Scale from 1 to 5, "no trust at all" to "full trust"

23. Regarding the financial situation of your household, the COVID-19 crisis has had:

    Very negative consequences; Somewhat negative consequences; No consequence; Somewhat positive consequences; Very positive consequences; I don't know

Next, we would like to ask you for your views about the evolution of the economy in *COUNTRY NAME* and your personal financial situation. Of course, there are no right or wrong answers and no one can look into the future; we are simply interested in your views.

24. Relative to the past year, how do you think that the **average level of the prices** in the economy will evolve over the **next five years**?

    It will increase a lot; It will increase somewhat; It will stay the same; It will decrease somewhat; It will decrease a lot; I don't know

25. Relative to the past year, how do you think that **unemployment** will evolve over the **next five years**?

    It will increase a lot; It will increase somewhat; It will stay the same; It will decrease somewhat; It will decrease a lot; I don't know

26. **In 12 months** from now, if your income stays roughly the same, how do you think that your **total amount of taxes** (income taxes, capital taxes, property taxes, etc.) will evolve?

    It will increase a lot; It will increase somewhat; It will stay the same; It will decrease somewhat; It will decrease a lot; I don't know

The next set of questions looks a bit like a quiz. We are interested in learning whether economic information finds its way to the general public. These are questions for which there are right or wrong answers but they are not designed to catch you out.

Monetary policy is concerned with how much money circulates in the economy and what that money is worth.

27. Which of the following institutions usually takes monetary policy decisions?

    (France) Retail banks such as Société Générale, etc.; Central banks; The Ministry of Finances; The Parliament; None of the above; I don't know

    (Italy) Retail banks such as UniCredit, etc.; Central banks; The Ministry of Finances; The Parliament; None of the above; I don't know

    (Netherlands) Retail banks such as ING, etc.; Central banks; The Ministry of Finances; The Parliament; None of the above; I don't know

28. To help fight a crisis, like the 2008 financial crisis, monetary policy should usually consist of:

    Decreasing taxes; Increasing taxes; Increasing the interest rates; Decreasing the interest rates; None of the above; I don't know

29. What is the primary objective of monetary policy in the Euro area?

    The stability of the euro with respect to other currencies such as the US dollar; The good functioning of financial markets; A low level of unemployment in the economy; The stability of the prices in the economy; To keep the total amount of money stable; None of the above; I don't know

30. When the government expenses over a year exceed its resources, what does it entail?

    A budget surplus; A public deficit; Insolvency; A payment default; A decrease in public debt; None of the above; I don't know

The **public debt** of a country is the total amount of money which the successive governments of that country borrowed and which is not yet reimbursed.

31. Imagine that a country has accumulated so much public debt that people and institutions that lent it start doubting that they will be reimbursed. What would you say can happen?

    The interest rate at which the country borrows will likely increase; The interest rate at which the country borrows will likely decrease; This situation does not usually have an impact on the interest rate; I don't know

VIDEO TREATMENT (Tr. 'video', Tr. 'video+CB' and Tr. 'video + CB + Media')

We have arrived at the **most important part** of our survey! We now invite you to watch a short video (less than two minutes) that provides a basic overview of public finances. You may play the video as many times as you want.

Link to video in French

Link to the video in Italian

Link to the video in Dutch

[For readers only, not used in the survey: Link to an English version of the video]

32. How do you judge the content of the video? Please give your **honest** opinion!

    Very unclear; rather unclear; reasonably clear; clear; very clear; I didn't really pay attention to the video

SURVEY ALL RESPONDENTS (CONTINUING)

33. We would like to know how much attention you paid to this study so far. We appreciate your honesty. Chose the most appropriate item to complete this sentence: "I gave this study .... attention so far"

almost no; very little of my; some of my; most of my; my full

We now want to ask you a few broader questions. Please use the text boxes below and write as much as you feel like. Your opinion and thoughts are important to us! There is no right or wrong answer; we are only interested in your views.

If a government wants to make public expenditures, it needs money to pay for them. Imagine that a government funds substantial public expenses **by borrowing money.**

34. (randomized with Q35) Do you think that this funding option poses **risks**?

Yes; No; I don't know

(If yes to previous) Which risk(s) do you have in mind?

Please be specific...

35. Do you think that think this funding option (**the government borrowing money**) has **advantages**?

Yes; No; I don't know

(If yes to previous) Which advantage(s) do you have in mind?

Please be specific...

36. Do you think that this funding option (**the government borrowing money**) rather has advantages or drawbacks?

Rather advantages; rather drawbacks; I don't know

Imagine that a government funds substantial public expenses by **having the central bank create money and deposit it in the government's account.**

37. (randomized with Q38) Do you think that this funding option poses **risks**?

Yes; No; I don't know

(If yes to previous) Which risk(s) do you have in mind?

Please be specific...

38. Do you think that this option has **advantages**?

Yes; No; I don't know

(If yes to previous) Which advantage(s) do you have in mind?

Please be specific...

39. Do you think that this funding option (**the central bank creating money**) rather has advantages or drawbacks?

    Rather advantages; rather drawbacks; I don't know

40. How certain are you about your last answer?

    cursor from 1 to 5, from "not at all certain" to "highly certain"

41. (pilot only) Did you find it rather easy or rather difficult to **understand** the previous questions?

    very difficult; difficult; reasonable; easy; very easy

42. (pilot only) Do you have any suggestions/feedback for us to improve the previous questions?

    . (box)

    I don't have any feedback or suggestions

    I do not have any suggestions

Tr. 'CB' and Tr. 'Video + CB':

Before answering the last part of the survey, you will be randomly assigned to read a piece of information from a set with different views on economic policies. We now invite you to read the article below. It is a piece from a central bank from the Euro area. It states that "**there is nothing magic in central bank money**." It was written at the beginning of the pandemic (in the first semester of 2020). We invite you to skim through it yourself, but an external expert has also summarized it for your convenience:

"The article argues that if the European Central Bank were to create money to fund government expenses, this would be illegal and it could entail **very high social and economic costs** in the future. Looking at historical experience, creating money to fund government expenses has often led to a **loss of confidence** in the currency and a **loss of control over the general level of the prices** in the economy. A situation where prices start increasing rapidly refers to **inflation** or even hyperinflation."

(button show article)

There is nothing magic in central bank money

The current context of the health crisis will lead to a massive increase in public debt. In the public debate, money creation by central banks is often proposed as a solution. Is the currency created by central banks really a 'magic currency' that could prevent governments from issuing public debt or cancelling existing debts?

To answer this question, it is first helpful to understand how a central bank creates money. In general, central banks issue money in two ways: when they put banknotes into circulation and when they credit the current accounts that commercial banks hold with them. This currency is never offered; it is issued in exchange for a financial security that the central bank acquires or a loan to a commercial

bank. This form of issuance allows the central bank to reduce the amount of money in circulation, if it deems it necessary, to achieve its objective of price stability, by reselling securities or reducing the supply of new credit to commercial banks.

Concretely, when the Bank of *country name* buys a *country adjective* government bond from a *country adjective* bank, it credits the deposit account that this bank holds with it. The Bank of *country name* then receives interest on this bond and pays interest on the deposit created; both interest rates may be negative. As long as the bond's rate of return to maturity is higher than the deposit rate of commercial banks, the Bank of *country name* makes a profit, which it then transfers to the *country adjective* Treasury.

Since the central bank owns the public debt and the government owns the central bank, can't the public debt held by the central bank be written off leaving the total public sector balance sheet unchanged?

No. First of all, it is illegal in the euro zone because the Treaties forbid it. Then the central bank still owes interest on the deposits created. If interest rates paid on deposits are positive, the central bank will owe money without having the income to pay it. There are mainly two possibilities in this case: either the government recapitalizes the central bank (and the public sector will therefore gain nothing from the operation) or the central bank repays by issuing new reserves. In the second case, the risk is the loss of confidence in the currency and the loss of control over the level of inflation. Although this risk seems remote today, history teaches us that inflation can be budgetary in origin and that the economic and social costs of inflation can be very high. We can see it clearly: in any case, we never create money magically.

43. How do you judge the content of this article? Please give your **honest** opinion!

    Very unclear; rather unclear; reasonably clear; clear; very clear; I didn't pay much attention to the **whole** *text*

Tr. 'Video + CB + Media':

Before answering the last part of the survey, you will be randomly assigned to read some pieces of information from a set with different views on economic policies. We now invite you to read the two articles below.

(text randomized) The first (second) one is a piece from a central bank from the Euro area. It states that "**there is nothing magic in central bank money**." It was written at the beginning of the pandemic (in the first semester of 2020). We invite you to skim through it yourself but an external expert has also summarized it for your convenience:

"The article argues that if the European Central Bank were to create money to fund government expenses, this would be illegal and it could entail **very high social and economic costs** in the future. Looking at historical experience, creating money to fund government expenses has often led to a **loss**

of confidence in the currency and a **loss of control over the general level of the prices** in the economy. A situation where prices start increasing rapidly refers to **inflation** or even hyperinflation."

(button show article)

Central bank text here

44. How do you judge the content of this article? Please give your honest opinion!

    Very unclear; rather unclear; reasonably clear; clear; very clear; I didn't pay much attention to the **whole** *text*

(text randomized) The second article is a piece from a renowned European economist. It states that "**the European Central Bank (ECB) must finance COVID-19 deficits**." It was written at the beginning of the pandemic (in the first semester of 2020). We invite you to skim through it yourself but an external expert has also summarized it for your convenience:

"The article argues that if the European Central Bank were to create money to fund government expenses, this would create **relief for countries' budgets** and allow them to **avoid potential indebtedness problems**. It also argues that this would **not induce any risk of a large increase in the level of the prices** in the current context. In other words, that **would not create inflation**. It proposes to find the appropriate way to make this option legal."

(button show article)

The ECB Must Finance COVID-19 Deficits

Having witnessed the 2008 financial crisis and the subsequent eurozone debt crisis, Europe's policy-makers should already realize what the COVID-19 pandemic could mean for the economy. To avert a self-perpetuating downward spiral, the European Central Bank, in particular, will need to start thinking outside the box.

If the ECB engages in monetary financing of member states' budget deficits, it will likely be joined by many other central banks around the world. The virtue of such an approach is that it spares national governments from having to issue new debt. Because all new debt would be monetized, the crisis would not increase government debt-to-GDP ratios. For those countries suffering the worst of the pandemic, the threat of a bondholder panic will have been removed from the equation.

Yes, one could raise many objections to this proposal. As a legal matter, the Treaty on the Functioning of the European Union forbids the ECB from engaging in monetary financing of national budget deficits. But ECB lawyers, with their unbounded ingenuity, could surely find a way around this restriction. After all, the very future of the eurozone depends on it.

One also might object on the grounds that monetary financing would produce inflation. Yet under the current circumstances, there is simply no chance of this. If anything, Europe is now facing a deflationary

spiral; monetary financing would militate against this trend. As soon as the deflationary dynamic had been stopped, the ECB could halt its monetary financing.

Sooner or later, the ECB must accept that monetary financing in support of deficit spending is a necessity not just for mitigating the COVID-19 crisis, but also for averting a downward deflationary cycle that could pull the eurozone apart. It is time to think outside the box.

45. How do you judge the content of this article? Please give your **honest** opinion!

Very unclear; rather unclear; reasonably clear; clear; very clear; I didn't pay much attention to the **whole** *text*

SURVEY ALL RESPONDENTS (CONTINUING)

We have reached the last part of the survey. We would now like to know to **what extent you agree or disagree** with each of the following general statements.

46. "When the level of the **public debt** becomes **concerning, decreasing** the overall amount of **government expenses** is often justified"

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

47. "When the level of the **public debt** becomes **concerning, increasing** the overall amount of **taxes** is often justified"

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

48. If the government would today fund substantial public expenses (such as those induced by the pandemic situation) by **borrowing money and thus increasing the public debt**,

A **taxes** would then be likely to **increase**

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

B **prices** would then be likely to **increase faster**

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

49. If the government would today fund substantial public expenses (such as those induced by the pandemic situation) by **making the central bank create money to fund them**,

A **taxes** would then be likely to **increase**

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

B **prices** would then be likely to **increase faster**

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

50. "A central bank should be directly under the control of its government"

strongly disagree; disagree; neither agree nor disagree; agree; strongly agree

You are almost done! These are the last questions; please devote your full attention to them.

51. Some commentators say that the European Central Bank should **exceptionally create money** to fund the large governmental expenses induced by the pandemic situation. Do you rather support or rather oppose this idea?

    strongly oppose; somewhat oppose; undecided; somewhat support; strongly support

52. How certain are you about your last answer?

    (cursor) 1 to 5 from "not at all certain" to "highly certain"

53. Some commentators say that the European Central Bank should **always** create money to pay for the public expenses of the *country adjective* government. What do you think of this proposal?

    strongly oppose; somewhat oppose; undecided; somewhat support; strongly support

54. How certain are you about your last answer?

    (cursor) 1 to 5 from "not at all certain" to "highly certain"

55. (pilot only) Did you find it rather easy or rather difficult to **understand** the previous questions?

    very difficult; difficult; reasonable; easy; very easy

56. (pilot only) Do you have any suggestions/feedback for us to improve the previous questions?

    . (box)

    I don't have any feedback or suggestions

57. We will now give you the option to **sign a real online petition**. Consider the following petition and decide whether you want to sign it or not:

    The European Central Bank mandate should not be changed to allow for monetary financing! Some organizations and citizens are currently proposing to review the rules of the European treaty to **allow for monetary financing** in Europe. That would mean that the European Central Bank would be allowed to create money to pay for public expenses in Europe. We think this could bring important costs in the future and imply some risks of leading our country as well as Europe into severe economic crisis as some other countries experienced in the past. We **oppose such a change**.

    I want to sign this petition; I do not want to sign this petition

58. You stated that you want to sign this petition. To continue, please click on the box below Go to the petition and you will be forwarded to it. After having signed it, you will be redirected to the end of the survey. You can still change your mind and continue directly with the survey now.

    Go to petition; I want to continue with the survey

    If clicked on "Go to petition":

    Thank you very much for being willing to sign the petition. We wanted to see here, how many people truly follow up on their words and take action. Unfortunately, for legal reasons related to our privacy policy, we cannot provide you with the link. Should you still be interested in it, you can find the actual petition on the internet.

59. The next question is about the following problem. In questionnaires like ours, sometimes there are participants who do not carefully read the questions and just quickly click through the survey. This means that there are a lot of random answers which compromise the results of research studies. To show that you read our questions carefully, please select 'turquoise' as your answer to the next question. What is your favorite color?

    Red; Green; Purple; Blue; Black; Turquoise; White; Yellow

60. Do you feel that the survey was too technical? Please give us your **honest** opinion:

    Cursor from "fully disagree" to "fully agree"

61. Do you feel that this survey was biased?

    Yes, left-wing biased; Yes, right-wing biased; No, it did not feel biased

D.2 Follow-up survey (France only)

You are taking part in a short survey conducted by a group of academic researchers from several institutions. The study aims to understand people's opinions of governmental policies and European institutions.

This survey should take about 10 minutes to answer. Feel free to express your own views; they will remain anonymous!

1. What is your gender?

   Male; Female; Non-binary

2. What is your age range?

   18–29; 30–39; 40–49; 50–59; 60–75

3. What is your marital status?

   Married or with live-in-partner; Single; Other

4. How many **inhabitants** are there in the place in which you reside?

   Less than 1000; 1000 to 10 000; 10 000 to 50 000; 50 000 to 100 000; 100 000 to 500 000; more than 500 000; I do not know

5. How far do you live from the nearest supermarket or convenience store where you usually do your **grocery shopping**?

   Less than 1 km; between 1 and 5 km; between 5 and 20 km; more than 20 km; I don't know

6. How far do you live from the nearest **doctor's office** where you go for routine appointments?

   Less than 1 km; between 1 and 5 km; between 5 and 20 km; more than 20 km; I don't know

7. Are you aware of any recent **project** developed with the financial help of the **European Union** in your city, such as the construction of a road or of a building?

   Yes; No; I don't know

8. How do you consider your level of **knowledge** about **political and economic issues** related to the **European Union**, relative to others?

   Cursor from 1 (very much below average) to 5 (very much above average)

9. What **objective** do you think the **European Central Bank** is trying to achieve regarding the **increase in consumer prices (inflation)** in the Eurozone?

   It tries to keep inflation around 0%; It tries to keep inflation close but below 2%; It tries to keep inflation around 2%; It tries to keep inflation close but below 5%; It tries to keep inflation around 5%; None of the above; I don't know

10. What **objective** do you think the **European Commission** is trying to enforce regarding **national public debts** in the European Union member countries?

    It tries to keep the level of public debt of each member country around 30% of their GDP (Gross Domestic Product); It tries to keep the level of public debt of each member country around 60% of their GDP (Gross Domestic Product); It tries to keep the level of public debt of each member country around 90% of the GDP (Gross Domestic Product); It tries to make sure that the level of public debt does not grow more than 2% per year; It tries to make sure that the level of public debt does not grow more than 5% per year; None of these objectives; I don't know

11. To what extent do you agree with the following general statements? *(strongly disagree; disagree; neither agree nor disagree; agree; strongly agree)*

    A 'A **central bank** (such as the European Central Bank) must **remain independent** from its government(s)'

    B 'France should abandon the euro and **take the franc back**'

    C '**Inflation** is **too low** in France'

    D 'The European Central Bank should **exceptionally create money** to fund the public expenses induced by the pandemic'

    E 'The European Central Bank should **always create money** to pay for the public expenses of the French government'

    F 'The European Commission should **redistribute more money** to the European countries that are **the most affected** by the pandemic'

    G 'There are more risks than benefits for a government in **borrowing money** to finance its expenses'

    H 'There are more risks than benefits for a government in **increasing taxes** to finance its expenses'

    I 'There are more risks than benefits for a government in **having its central bank create money** to finance its expenses'

    J 'The level of **public debt** is becoming **concerning** in France'

    K '**Inflation** is **too high** in France'

12. When the level of the **public debt** becomes **concerning**, what is then your opinion on the following policy options? *(strongly disagree; disagree; neither agree nor disagree; agree; strongly agree)*

    A 'The government should **cut** its public **expenses**'

    B 'The government should **increase** the overall amount of **taxes**'

    C 'The government should **sell** some of its **assets**, such as the stocks in the companies it owns'

13. A state such as France has several options to finance substantial public expenses. We would like to know what you think could happen for each of the below funding options:

- If the **European Commission borrows** money and transfers it to the state,

  - **inflation** will then:
    decrease a lot; decrease slightly; stay at the same level; increase slightly; increase a lot
  - **taxes** will then:
    decrease a lot; decrease slightly; stay at the same level; increase slightly; increase a lot

- If the **French government borrows** money,

  - **inflation** will then:
    decrease a lot; decrease slightly; stay at the same level; increase slightly; increase a lot
  - **taxes** will then:
    decrease a lot; decrease slightly; stay at the same level; increase slightly; increase a lot

- If the **European Central Bank creates money** and transfers it to the state,

  - **inflation** will then:
    decrease a lot; decrease slightly; stay at the same level; increase slightly; increase a lot
  - **taxes** will then:
    decrease a lot; decrease slightly; stay at the same level; increase slightly; increase a lot