Fiscal Beliefs & Narratives

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Abstract We conduct an experiment with educational content within a large-scale household survey on monetary finance. We identify prior narratives that respondents assign to this concept using open-ended questions analyzed with a large language model. Prior narratives are dominated by inflation concerns and 'magic money' views, with little reference to taxation. A central bank (CB) educational blogpost preceded by a short video clip on public finance is the only intervention that robustly and persistently reduces support for monetary financing and shifts a broad set of related fiscal beliefs, including inflation concerns associated to this policy, support for fiscal discipline, and CB independence. These spillovers do not primarily operate through causal economic reasoning, but are instead consistent with the application of a 'fiscal seriousness' mental model across beliefs. Our findings suggest that CB communication is particularly effective when it combines educational content with salient narrative framing that connects to existing beliefs.

Keywords Large-scale household survey, educational information, RCT, central bank communication

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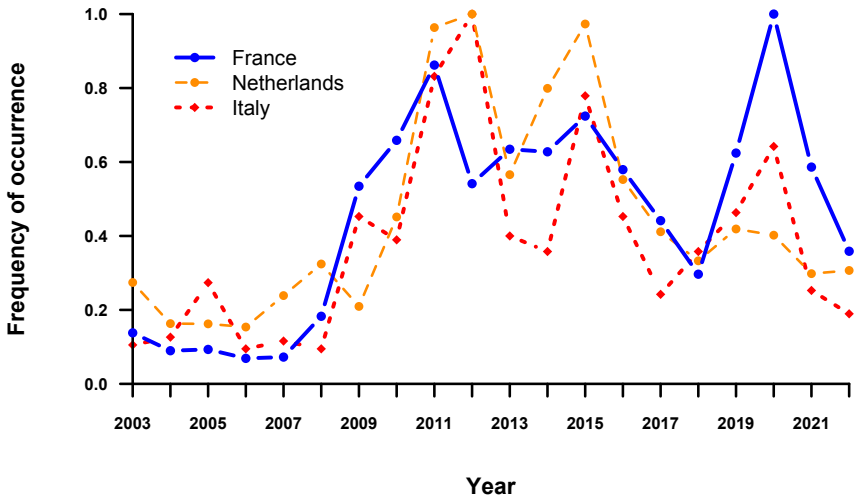
1 Introduction

Low inflation in the wake of the Great Financial Crisis followed by the policy mix during the pandemic renewed interest in unconventional policies such as monetary financing, often colloquially described as "magic money," that is, the use of central bank (CB) money creation – as opposed to tax or debt – to finance government spending (Reis and Tenreyro, 2022).[1] It has become a salient and often misunderstood policy option in public debates, especially in Europe, where narratives around "helicopter money" have gained traction; see Fig. 1. These developments have raised concerns, in particular among CBs, that monetary financing may emerge *de facto* under fiscal dominance, even when *de jure* prohibited (Barthelemy and Penalver, 2020; Ghebrihiwet et al., 2021).[2]

This context exposes the public to competing narratives about the feasibility and desirability of monetary financing, which often abstract from general equilibrium reasoning, such as the government budget constraint and intertemporal trade-offs, but shape their macroeconomic beliefs and interpretation of policy actions. While central to both policy and theory, households' views on public finances have received relatively little attention in the related literature, which we review below. From a policy perspective, CB communication increasingly extends beyond financial markets to the general public, whose beliefs can shape the political feasibility of policies and institutional arrangements. Public support for fiscal discipline and CB independence may depend on how individuals perceive the financing of government spending. From a theoretical perspective, the extent to which expectations are actually policy-dependent dictates how equilibrium outcomes respond to policy design: agents not distinguishing between alternative modes of financing would challenge a key mechanism of

[1] It has been argued that monetary finance could circumvent the traditional Ricardian equivalence argument against fiscal stimulus (Galí, 2020b; Benigno and Nistic, 2025), help escape liquidity traps (Amador and Bianchi, 2023; Michau, 2024), or relax government budget constraints; see Mankiw (2020) for a critical perspective.

[2] Beyond inflationary concerns, political economy considerations point to the danger that "magic money" narratives may foster the unrealistic perception among the citizens that the government budget constraint is irrelevant, and undermine support for budget discipline, tax collection or CB independence.



Notes: Authors' computations from the Nexis database. The three countries correspond to the survey sample. The key words used are 'monetary financing', 'modern monetary theory', 'debt monetization', 'helicopter money', 'printing press', 'money creation', 'canceling public debt' and 'erasing public debt'. The data are taken from the main general-interest and financial newspapers in the three countries used in our survey: 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

standard macroeconomic models.

This paper aims to advance the understanding of people's fiscal beliefs and preferences. Unlike the vast majority of the random control trials (RCTs) in the survey literature that focus on providing factual information such as current or past inflation, we target the understanding of macroeconomic mechanisms and fiscal policy trade-offs. We conducted a household survey of 8,601 respondents representative of three diverse EU countries (namely France, Italy and the Netherlands) between November 2021 and March 2022, namely before the war in Ukraine and the persistent surge in inflation in Europe.[3] Beliefs about monetary finance are first elicited using open-ended (OE) questions, which we classify into narratives using a large language model (LLM). Our treatments then expose respondents to competing

[3]We provide additional discussion on the timing of the survey with respect to the dynamics of inflation and inflation expectations in Section 2.1 and App. A.

narratives about monetary financing through texts to shift beliefs on the matter, and assess how these translate into fiscal and institutional preferences. The main treatment features an actual CB blog post arguing that "there is nothing magic in central bank money," complemented by an entertaining introductory video clip on public finance, and a contrasting opinion column from a renowned economic expert in a general audience newspaper advocating its exceptional use. This design aims to mimic the tone of the public debate and help individuals connect monetary financing to inflation risks and institutional arrangements such as CB independence. This qualitative content through the salient 'magic money' framing exploits recent evidence showing that stories are more persistent and more easily recalled than numerical information (Graeber et al., 2024).

We first document that respondents' prior narratives about monetary financing on the negative side are dominated by inflation concerns and, to a lesser extent, budget discipline, and 'magic money' on the positive side, while tax-related arguments are negligible. This pattern points to a form of myopia in fiscal beliefs, which suggests that individuals do not naturally reason in terms of intertemporal government budget constraints, in contrast with standard rational expectations frameworks. Against this background, the combination of the CB educational blogpost and the introductory video in Tr. `Video+CB` significantly and robustly reduces respondents' support for monetary financing by offering a counter-narrative to the 'magic money' idea. The video or the CB communication alone do not always generate effects of comparable magnitude or precision, and their impact is weakened, if not overturned, when respondents are exposed to conflicting messages. This combination appears to provide a coherent framework to shift beliefs, even among respondents with initially favorable views of monetary financing or low trust in or knowledge of CBs.

These treatment effects also consistently extend to other fiscal beliefs, including stronger concerns about inflation associated to monetary finance, greater support for fiscal discipline, and increased support for CB independence and willingness to sign a petition to safeguard it. Mediation decompositions show that these effects do not mainly operate through a causal chain across beliefs akin to precise economic reasoning. Instead, they are consistent partly with direct message uptake, especially regarding CB independence and inflationary consequences of monetary finance, and partly with a transfer learning interpretation, under which respondents adopt a mental model of fiscal discipline – or a 'fiscal seriousness' heuristic –

and apply it broadly across fiscal beliefs, in particular regarding support for fiscal discipline. We also find no evidence of an 'elite cue' mechanism behind our treatment effects. Finally, Tr. `Video+CB` generates some persistent effects over time despite the narrower sample of the recontact wave, which helps mitigate concerns of experimenter demand effects or consistency as a signal of personal skills in our data (Falk and Zimmermann, 2016).[4] Taken together, our findings suggest that combining educational content with CB communication can induce coherent belief changes beyond the usual inflation-related perceptions considered in the literature, generate broad learning, and shape views on complex issues such as monetary finance.

The rest of the paper is organized as follows. After discussing the related literature, Section 2 introduces the survey, Section 3 analyzes the prior fiscal beliefs of respondents, in particular their narratives about monetary finance, Section 4 discusses the effects of the information provision treatments on the respondents' views, and Section 5 concludes.

Related literature Our work lies at the intersection between narrative economics, that is the study of how simple, contagious stories shape beliefs and economic behaviors (Shiller, 2017, 2019), and the household survey literature that looks into the effects of economic views on policy preferences using information-provision RCTs; see Haaland et al. (2023) for a methodological overview. Specific to macroeconomic and public finance matters, Kuziemko et al. (2015) tackle support for tax policies, Coibion et al. (2021); Roth et al. (2022); Behringer et al. (2024) investigate how beliefs about public debt affect attitudes towards government spending, and Grigoli and Sandri (2024); Andrade et al. (2025) look at their effects on inflation expectations. Andre et al. (2022) examine households' understanding of shock transmission. Compared to most of this literature, we focus on households' attached reasoning about fiscal options using OE questions beyond self-reported numerical expectations or pre-established answer choices. Relatedly, Stantcheva (2021) documents how households reason

[4] Haaland et al. (2023) discuss the best practices to mitigate experimenter demand effects, which we thoughtfully follow – in particular, short treatments, a neutrally framed video and an obfuscated follow-up. Furthermore, recent evidence suggests that the quantitative importance of these effects in survey settings is overstated – especially in anonymous online surveys on non-sensitive topics such as ours, where they are largely mitigated by standard experimental designs and rarely overturn results qualitatively (Mummolo and Peterson, 2019; de Quidt et al., 2026).

about taxation, and Andre et al. (2026) document the narratives that households relate to the recent inflation surge using OE questions; see also Binetti et al. (2024); Haaland et al. (2024). This growing literature reports substantial shortcomings in households' reasoning about the economy. We also contribute to the application of LLM-assisted classifications of textual content; see Haaland et al. (2025); Dell (2025) for methodological overviews. We further discuss the mechanisms behind the observed treatment effects using a mediation framework and provide the first evidence on public perceptions of monetary financing.

More generally, our paper relates to the large literature on the effects of CB communication on the public's expectations; see Blinder et al. (2024) for a survey. Consistent with our design, this line of research finds that simplified communication improves comprehension (Haldane and McMahon, 2018; Binder and Rodrigue, 2018; Bholat et al., 2019; D'Acunto et al., 2021; Mokhtarzadeh and Petersen, 2021; Kryvtsov and Petersen, 2021, inter alia). In particular, Ehrmann et al. (2025) show how explanations along CB announcements can help reach less literate people. An important innovation of our paper in this literature is the provision of opinions and contradictions, which are arguably more complex than factual and numerical information. Whether CBs can influence the public on such technicalities in spite of the competing prevalence of simplified narratives such as 'magic money' remains largely an open question, and we provide the first evidence that it can. We also contribute to the academic literature on macroeconomic education, which has remained surprisingly scare.

Finally, our work speaks to the theoretical literature exploring whether financing public expenditures with CB money can alter economic outcomes (Benigno and Nistic, 2025; Reis and Tenreyro, 2022; Michau, 2024). Whether it matters for a fiscal stimulus to be financed with money rather than bonds depends on public expectations (Galí, 2020a; Cochrane, 2023), which are ultimately an empirical question. Our results suggest that the mode of financing may not matter for expectations as much as in the theory; see, relatedly, Hayo and Neumeier (2017); Van Rooij and de Haan (2019).

2 The survey

We detail the data collection, then the design of the information-provision experiment, and give an overview of the dataset.

2.1 Data collection

We run a survey of households in France, the Netherlands and Italy, which reflect the diversity of Western European economies. The survey was conducted by Kantar, a major multinational marketing research company, and consists of two waves, namely a main wave and a recontact wave. A pilot involving 100 respondents per country was launched on November 23, 2021. The main wave was then conducted from January 14, 2022, to February 17, 2022, that is before the war in Ukraine and, importantly, before the most salient surge in inflation in Europe.[5] A total of 8,601 respondents took part in the main wave of the survey:[6] 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 recontact wave about a month later, from March 4 to 21, 2022.[7] The recontact wave involved two thirds of the respondents of the first wave in France (2,809 respondents in total).

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.[8] We

[5]Survey data from the ECB-CES in App. Fig. A.1 show that the break towards higher inflation perceptions in the three countries studied takes place later in 2022. In particular, the households' inflation perception did not greatly differ between July 2020 and January 2022: the median perception 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 and these numbers were publicly released during the main wave.

[6]Consistent with industry practice and contractual obligations, our final sample comprises 8,601 completed surveys after the survey company excludes "speedsters" prior to data delivery, which they defined as respondents who took less than five minutes given our study's expected length.

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

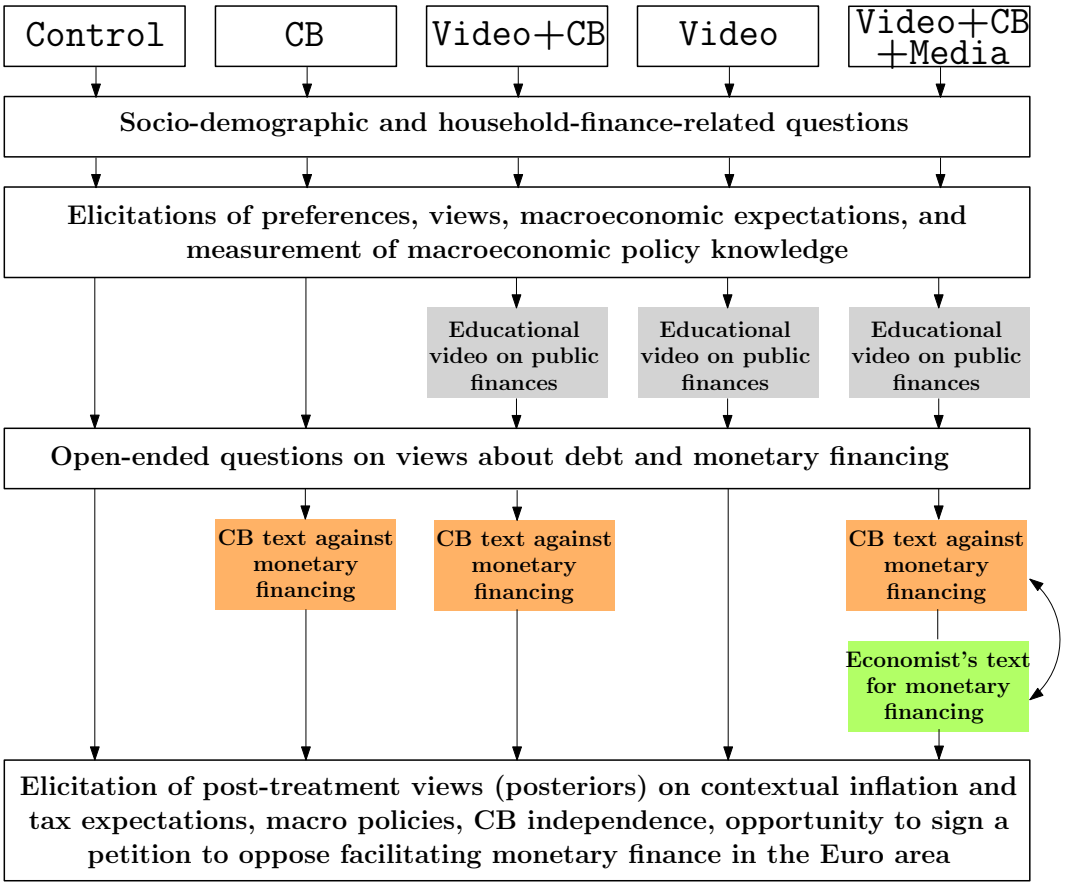
[8]Evidence from the pilot shows that the device used does not correlate with the time the respondents spent on the text content of the survey. In the final sample, about 60% took the survey on a desktop, the

elaborated the questionnaires in English, which we report in App. E. 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 quality 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 first wave; 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, and no respondent could take part to the survey more than once. In all treatments, the respondents were first asked about usual socio-demographic and household-finance related questions, habits and general opinions, including macroeconomic expectations, and took a quiz consisting of five multiple-choice questions on monetary and fiscal policy. The respondents were then given different pieces of information depending on the treatment to which they had been assigned. The key treatment variable was the provision of a CB communication piece arguing against monetary-financed fiscal expenditures. 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 major euro-area country. The text, reported in App. E, 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

rest mostly on smart phones, similarly distributed across treatments ($\chi^2(4) = 6.35$, with a corresponding p-value of 0.175).



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.

Figure 2: Structure of the survey experiment

mandate.

Even though the text is real-world educational content, one may argue that it is still long and fairly technical, at least at first glance in a general-population survey. Therefore, respondents first saw a three-sentence summary of the blog post that highlights its main message, namely '*there is nothing magic in central bank money*' (see Box 2.2). Recent evidence shows that stories fade far less quickly in people's memories than statistics because narrative content that matches later prompts comes back to mind more easily than numerical facts (Graeber et al., 2024). Our design leans into this mechanism since it provides a narrative

based on the salient headline about 'magic money' rather than commonly used numerical information. After 10 seconds on this summary, respondents could scroll down through the full text to proceed with the rest of the survey. This procedure keeps the cognitive load reasonable while giving the respondents the option of reading the full text.

Cols. I and II of Fig. 2 describe the `control` group, where no information was displayed, and Treatment `CB`, where the CB communication opposing monetary finance was displayed after the elicitation of the prior views on debt issuance and monetary finance via a series of open-ended questions about risks and advantages of debt- and money-financed public spending (in randomized order). The posterior questions, common across all respondents, then 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. At the end of the survey, to assess the impact of opinions on people's behaviors, all participants had the opportunity to sign a petition to safeguard the prohibition of monetary financing by the ECB under the current treaty.

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.[9] To address this concern, we provided an introductory educational video about public finance to some respondents.[10] 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, which is crucial given our reliance on OE answers. 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

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

[10]The video in the three languages along with an English version (not used in the survey) can be found in the replication package and accessed using the links in App. E.

Box 2.2 – Information provision treatment: central bank's communication (see Barthelemy and Penalver 2020 for the full text)

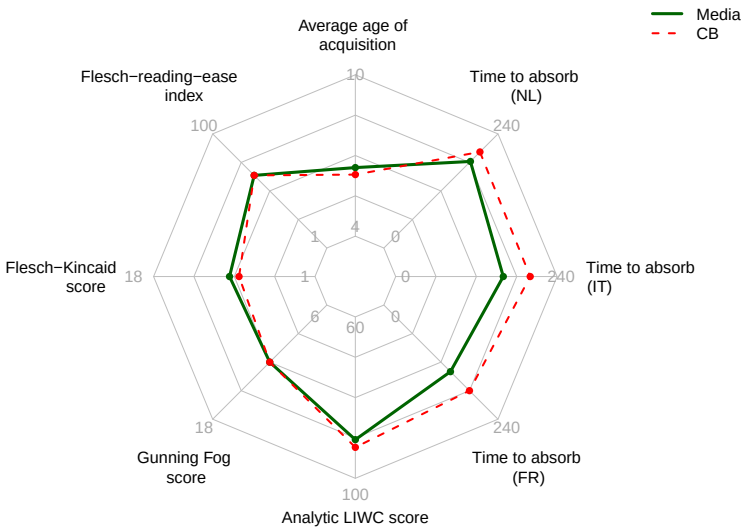
Before answering the last part of the survey, you will be randomly assigned to read a piece of information from a set with different views on economic policies. We now invite you to read the article below. It is a piece from a central bank from the euro area. It states that "**there is nothing magic 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."

the ECB are independent from governments. The risks and advantages are not spelled out. In particular, there is no mention of any inflationary bias. Respondents had to play the whole video before proceeding to the rest of the survey and could repeat it as desired. 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 `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 OE 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 last treatment – Tr. `Video+CB+Media`; see Col. V of Figure 2 – to test



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

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 a prominent economist in Europe, Prof. Paul de Grauwe, who holds the John Paulson Chair in European Political Economy at the London School of Economics and Political Science and is a regular contributor to the economic debate in English, Dutch and French newspapers with a general readership. His opinion piece argues for a one-time monetary-financed fiscal stimulus in the wake of the COVID-19 pandemic because the long-run trend in Europe has been deflationary, which leaves room for monetary finance, also described as thinking 'outside the box' (De Grauwe, 2020). Therefore, in Tr. `Video+CB+Media`, the CB communication has both a facilitating component (the introduc-

Box 2.2 – Information provision treatment: Economist's opinion column

The second article below 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. It proposes to find the appropriate way to make this option legal.'

tory video) and a hurdle (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 App. E. As illustrated in Figure 3, the two texts have a similar level of readership according to several standard metrics of textual complexity.

Throughout Section 4, we analyze multiple mechanisms that could underlie treatment effects. One is an 'elite cue' channel, through which individuals follow trusted institutions rather than engage in economic reasoning, which would imply heterogeneous treatment effects by trust levels. A second class of mechanism is structured economic reasoning, and our data can speak to four manifestations of it: a substitution mechanism across funding sources by analogy to household budget; a causal reasoning connecting government control to monetary financing, and support for CB independence; a form of general equilibrium reasoning associating monetary financing with higher aggregate inflation; and an intertemporal model, in line with Ricardian equivalence, linking debt to future taxation. Another mecha-

nism could be a fiscal discipline framing, leading respondents to adopt a fiscal 'seriousness' mental model, and deploy it broadly across fiscal beliefs through a form of transfer learning, in line with the mechanism studied in, e.g., Esponda et al. (2023).

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 and income (see App. Table B.1). Our sample is also fairly representative in terms of employment status and household side, and the last column verifies random treatment assignment.[11]

The median completion time was 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. In the recontact wave, the median was 3:30 minutes, with an average of 5.30 minutes. Given that the video lasts for 1:20 minute, 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 and 41 seconds on the opinion piece. An equal and small share of respondents acknowledged not paying attention to the information provided (only 7% for each of the texts), and the vast majority of respondents (86%) did not find the survey biased, and the rest were divided equally between 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 describe respondents' opinions on fiscal policy trade-offs and identify the narratives that they associate to monetary finance prior to the treatments.

[11] The minimum p-value of the F-test of joint significance of all control variables considered hereafter (see App. Fig. D.5) on assignment to each of the five treatments is 0.477, which also confirms randomization.

3 What do people believe?

3.1 Overview of prior opinions on monetary finance

Prior to the treatments, we elicit the advantages and risks that people associate with monetary- and debt-financed public expenses (in randomized orders).[12] We use the answers pertaining to monetary finance since it is the focus of the information provided, and we aim to identify the extent to which people's prior narratives align with our treatments. Answers about debt financing are reported for completeness in Ap. D.

Overall, more than 60% answer that monetary finance involves some risk, 24% do not see any, and the remaining 15% declare not to know. As for its advantages, 46% declare that it involves some, 25% that it does not, and the remaining 29% do not know. Among respondents who acknowledged risks or benefits, the OE questions further elicit which ones they have in mind. After the OE questions, respondents indicate whether they think that risks outweigh advantages or vice versa. A large fraction (about two thirds) of the respondents state a prior opinion, and of those two thirds declare that monetary finance has more drawbacks than advantages.

3.2 Identifying monetary finance narratives

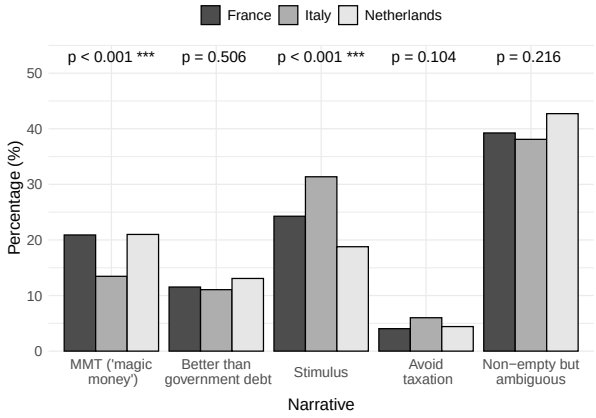
Following the methodological roadmap of Haaland et al. (2025) and the tools presented in Dell (2025), we use an LLM-assisted textual analysis of the answers to the OE questions to identify the positive and negative narratives associated to monetary finance. We defer a detailed description of the method to Appendix C to ensure reproducibility. For each of the two questions (namely, advantages and drawbacks of monetary finance), we first draft a coding manual based on economic theory, the content of the two treatment texts, and previous analyses of these answers for an earlier version of this paper. The wordclouds in App. Fig. C.2 provide a first overview of the recurring concepts among respondents. Inflation-

[12] See Q34 to 40 in App. E.

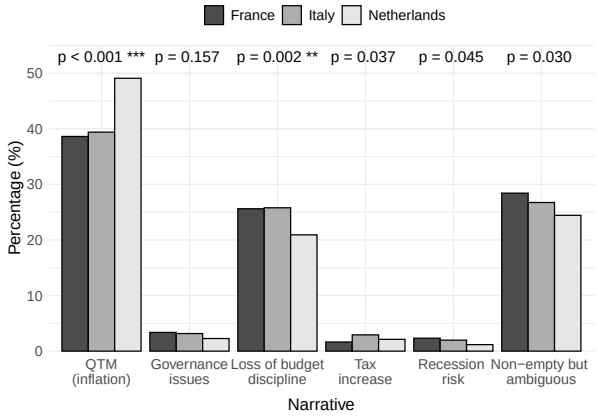
related risks dominate, with words such as 'inflation', 'devaluation', 'increase', 'currency', 'worth' and 'loss,' while words positively associated with monetary finance belong to the vocabulary of 'liquidity,' such as 'money', 'easy', or 'availability'.Next, two unrelated research assistants label a random 10% validation set for each question using these coding manuals. Empty or 'I don't know' answers are filtered out and ambiguous answers are categorized as such. They find that fewer than 5% of the answers may contain more than one idea. Therefore, answers identify a single narrative, using the first one as a convention in these rare instances where multiple ones could apply. We then iterate the coding manuals based on the coders' feedback and repeat the coding process until the inter-coder agreement, measured by the Krippendor's alpha metric, becomes high enough (Marzi et al., 2024). We then adjudicate the residual 1.3% and 1.6% disagreements to produce a "gold standard" benchmark, along with the final list of narratives obtained by adding data-driven ones, and discarding those absent from the answers.

This list contains four positive narratives: i) 'MMT' (for modern monetary theory), which echoes the notion of "magic" or "free" money, including any reference to the ease and rapidity of this financing option; ii) 'better than debt,' which encompasses any explicit favorable comparison with respect to debt issuance (e.g., "safer"); iii) 'stimulus,' i.e. implying that an increase in the quantity of money results in an increase in a real variable (for individuals, such as purchasing power, or for the economy as a whole, such as a reduction in unemployment); and iv) 'avoid tax increases,' which requires an explicit reference to the tax burden. A fifth narrative encompasses all 'I don't know' and non-empty but ambiguous answers, such as 'The blame then lies with a government institution,' or 'Not being able to cover everything.' As for the negative narratives, we retain the following five: i) 'QTM' (for quantity theory of money), which refers to inflation or currency devaluation risk; ii) 'governance issues,' which encompasses threats to CB independence and corruption-driven opportunistic government spending; iii) 'loss of budget discipline,' including risk premium-related higher interest rates; iv)' increase in taxes,' where an explicit reference to the tax burden is present; and v) 'recession,' which describes any adverse effect on real variables such as unemployment. A similar additional narrative gathers 'I don't know' and other ambiguous non-empty entries, such as 'there is always a catch,' or 'inequality.'

Via an application programming interface (API), we prompt the LLM with this final



(a) Positive narratives on monetary finance



(b) Negative narratives on monetary finance

Notes: The p-values correspond to a Chi-squared test of equality of proportions, and the stars provide the significance after controlling for multiple hypothesis testing using q-values (Storey, 2002); *** significance at 1%, ** at 5%, * at 10%.

Figure 4: Distribution of narratives per country

manual, run it on the validation set, and refine the prompts until the LLM reproduces the benchmark classification.[13] We use F1-scores, kappa statistics, and confusion matrices as diagnostics of the LLM performance; see Dell 2025 for details and App. Fig. C.3 and Table C.2. After a few iterations of the prompts, these diagnostics indicate that the remaining mismatches overwhelmingly concern ambiguous cases: the LLM adopts a more conservative stance than human judgment, which we view as preferable to contrived interpretations. Finally, we run the LLM using the refined prompts, reported in App. Boxes C and C, on the full sample to assign one narrative to each respondent for each of the two OE questions.

Figure 4 presents the cross-country distributions of the narratives. Besides ambiguous answers, stimulus and MMT are the most common positive narratives: MMT is most prevalent in the Netherlands, while the stimulus narrative dominates in France and Italy. Respondents

[13]We need to adjust the prompts to balance "hallucination" that fabricates content not grounded in the text against hyper-literalism, which fails to register reasonable pragmatic implications (e.g., treating "we're going for lunch" as a mere report rather than a tacit invitation). The explicit ambiguous category also helps minimize false positives.

also refer to monetary finance as being better than debt issuance but avoiding future taxes is barely mentioned. QTM emerges as the most cited negative narrative, particularly referenced in the Netherlands, before concerns for budget discipline that are cited in up to a quarter of the responses in France and Italy. Recession, governance or tax arguments appear negligible in all countries. Our classification strategy retains a substantial share of ambiguous answers rather than risks extrapolate words to fit a given narrative. We interpret these ambiguous answers as diffuse priors, which concerns about a quarter of respondents when it comes to risks, and close to 40% when it comes to advantages of monetary finance, in comparable proportions in each country.

App. Figs. D.5 and D.6 report on the association between narratives and a large set of covariates that we treat as the controls in the rest of the paper, namely demographics and socioeconomic status, financial and political attitudes, trust and economic knowledge, information habits, and economic expectations; see Fig. D.5 for the exact list. Media use plays a central role in spreading narratives: positive ones correlate with TV, newspapers, and social media usage, with TV watchers more likely to emphasize tax avoidance over inflation risks, and social media users more likely to provide ambiguous responses than other respondents. Older, wealthier, and more educated and knowledgeable respondents are more likely to identify the QTM and the loss-of-discipline narratives and less likely to provide ambiguous answers.[14] Higher scores on the macroeconomic policy quiz questions also correlate with the MMT, stimulus and better-than-debt positive narratives. Higher trust in the ECB is also associated with perceiving advantages of monetary financing, compared to not knowing or not trusting the institution. Finally, expectations and personal experiences matter: respondents with higher inflation or tax expectations are less likely to see advantages, while recent financial losses are associated with stimulus and better-than-debt narratives.

Taken together, the distributions of narratives suggest a common core across all respondents, with some notable cross-country differences, next to a role for media exposure, age, knowledge, and personal economic conditions:

[14]These characteristics do not systematically correlate with empty answers in the same direction, since richer and more knowledgeable people are more likely to fill up the text boxes but so are young people; see App. Fig. D.7.

Finding 1 (Narratives about monetary finance) *Negative narratives are dominated by the QTM narrative, especially in the Netherlands, next to concerns for budget discipline. 'Stimulus' is the most prevalent positive narrative in Italy and France, and 'magic money' in the Netherlands, with a higher proportion of ambiguous answers than for risks. Among all narratives, tax arguments are negligible.*

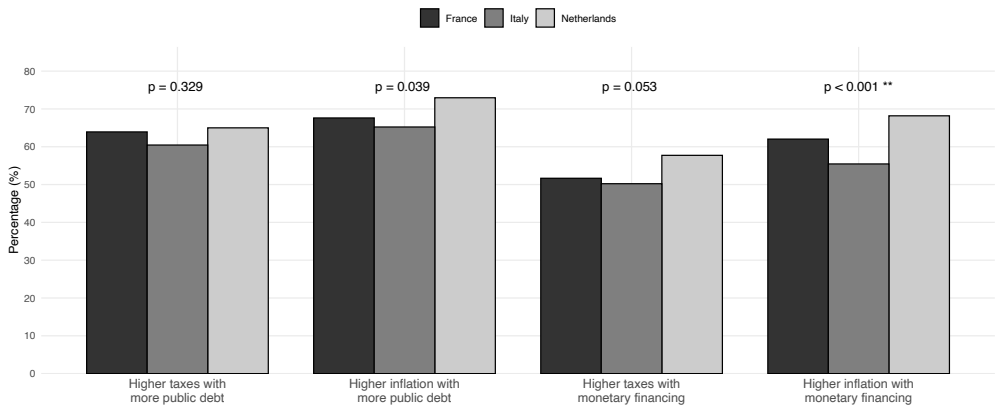
The fact that only a mere 5% of respondents refer to future taxes speaks to a diverse literature that emphasizes that people tend to be myopic (Gabaix and Laibson, 2022). Hence, their beliefs need not align with Ricardian equivalence, which undermines the benefits of fiscal and monetary policy coordination established under rational expectations; see, e.g., Bianchi and Melosi (2019) and the experimental evidence of Kronick and Peterson (2025). Myopia may also imply that the policy conflicts need not be as costly as predicted by rational expectations models.

Before turning to the RCT analysis, we describe respondents' other beliefs regarding fiscal policy options.

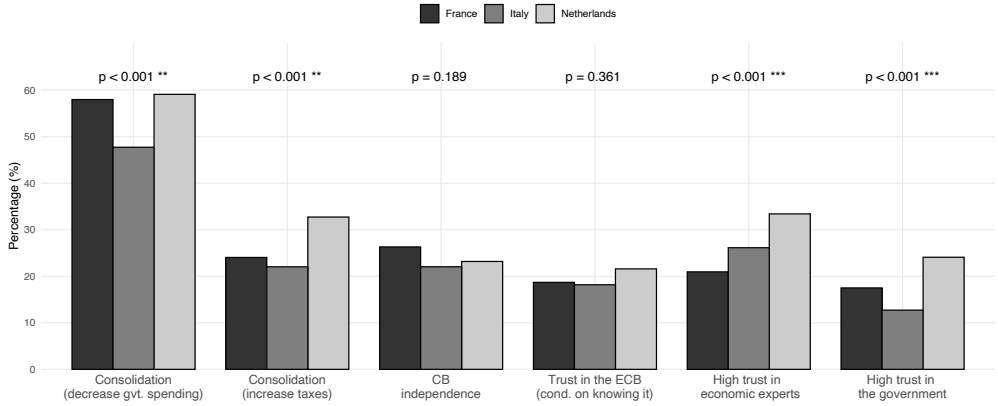
3.3 Other fiscal beliefs

Finding 1 aligns with cross-country differences in policy-dependent expectations and fiscal preferences.[15] Taxes are less of a concern than inflation in case of monetary finance, and equally shared across countries, while inflation concerns are significantly higher in the Netherlands than in the other two countries (Fig. 5a). Support for fiscal discipline is also highest in the Netherlands and lowest in Italy (Figure 5b). Overall, fiscal consolidation through tax increase enjoys overall less support than the spending-cut option. ECB independence – along with trust in the institution – has similar support across countries, but Dutch respondents trust significantly more the government and economic experts than their Italian and French counterparts. We also find a significant correlation between more support

[15]Support for CB independence and fiscal consolidation, either as spending cuts or tax increase, as well as tax and inflation expectations under hypothetical scenarios of debt- or monetary-financed public spending are post-treatment variables but cross-country differences and relative comparisons are unaffected by the use of the whole sample due to treatment assignment randomization, verified in App. Table B.1.



(a) Policy-dependent expectations



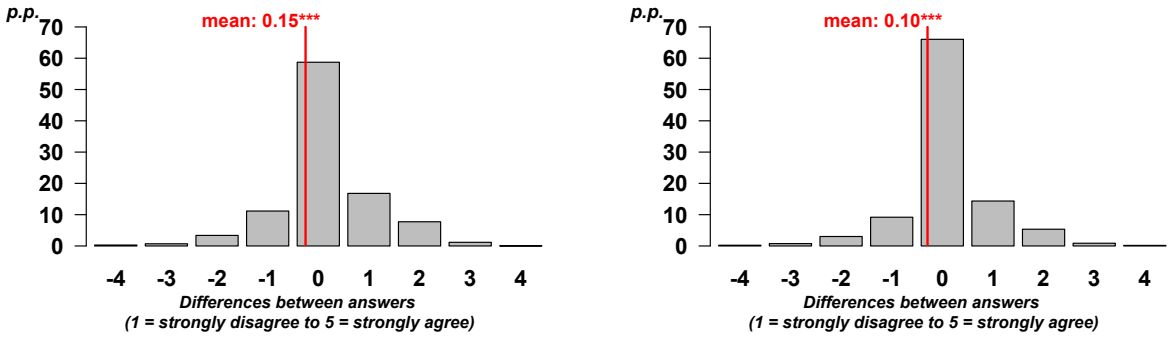
(b) Fiscal preferences

Notes: The bars display the proportions of respondents in each country that expect higher taxes and inflation depending on the budget funding option, support fiscal consolidation and CB independence, and trust institutions. The p-values correspond to a Chi-squared test of equality of proportions; *** significance at 1%, ** at 5%, * at 10%.

Figure 5: Distribution of fiscal preferences and expectations per country

for monetary finance and less for CB independence and between support for budget cuts and for tax increases (see App. Table D.3).

In general, concerns for tax and inflation, no matter the funding scenario, are strongly and positively correlated (App. Table D.4). This pattern may be somewhat unexpected in



(a) Tax expectations

(b) Inflation expectations

Notes: The left (resp. right) panel presents the distribution of the differences in responses (measured on a one-to-five Likert scale) between how much respondents agree with future taxes (resp. inflation) increasing in case of standard debt financing versus monetary financing. We interpret positive differences as higher tax increase (resp. inflation) expectations in case of debt than monetary financing, and negative differences as the other way around.

Figure 6: Differences in expectations under debt versus monetary financing

light of the theoretical macroeconomic models that usually emphasize distinct inflation and tax expectations as key transmission mechanisms of fiscal policy (Galí, 2020a; Cochrane, 2023). Whether these expectations differ between monetary and standard debt financing is ultimately an empirical question that our survey can help investigate.

Figure 6 reports the differences between respondents' expected tax and inflation increases under debt- versus monetary-financed fiscal stimulus; see App. Fig. D.8 for the raw answers. Approximately 60% of respondents provide identical answers across the two financing methods (see the highest bar at zero). On average, they are more likely to agree that tax and inflation increases would follow debt financing rather than monetary financing, with differences averaging 0.1-0.15 point on the five-point Likert scale.[16] This pattern aligns with the overall relative higher aversion to taxation than spending cuts reported in Figure 5b. Hence, our data provide little empirical support for the theoretical distinction that monetary financing alleviates future tax concerns, or uniquely raises inflation expectations. Our

[16] One could argue that point forecasts may better capture differences in expectations. While this is a valid consideration, eliciting numerical estimates under hypothetical scenarios may be too technical for households. By relying on a Likert scale instead, we are likely to capture broad patterns in perceptions, which may still translate into meaningful differences in expectations.

findings suggest that public perceptions might not strongly reflect the theoretical distinction between debt- and monetary financing, which raises important modeling considerations regarding the expectation channels of fiscal policy.

We now investigate how educational information provision can affect these perceptions.

4 Can information change people's views?

We discuss first treatment effects on the support for monetary finance and then on other beliefs. We conclude by documenting persistent treatment effects in an obfuscated recontact wave conducted several weeks later, which helps mitigate concerns about experimenter demand effects.

4.1 Treatment effects on the support for monetary finance

Our treatments are designed to create exogenous shifts in the views about monetary finance, which we assess with the following OLS cross-sectional specification, run for each narrative (denoted by n) separately:[17]

$$\text{MF}_i^{\text{post}} = c + \delta \mathbf{Tr}_i + \alpha \, \text{narrative}_i^n + \beta \, \mathbf{Tr}_i \cdot \text{narrative}_i^n + \varepsilon_i, \tag{3}$$

where the dependent variable is the post-treatment support for monetary finance on a five-point Likert scale (higher values correspond to stronger support), $\mathbf{Tr}_i$ the treatment assignment dummy (the control group is omitted), and narrative_i^n the dummy equal to one if respondent i's prior view aligns with narrative n, and zero otherwise.[18] Interactions between

[17] Due to randomized treatment assignment, it is not necessary to include controls to identify treatment effects. App. Table D.6 verifies that the results are robust to including the wide range of commonly used controls in the related literature listed in App. Fig. D.5). Throughout the paper, we use the opinions about monetary finance on a systematic basis as a dependent variable but results hold when using responses about monetary finance on an exceptional basis (see App. Table D.7).

[18] Respondents are grouped into six positive narratives, namely the five in Fig. 4a and 'none' for those who declared that monetary finance does not have any advantages and, hence, did not see the text box.

treatment and narrative dummies capture the magnitude and direction of belief updating, while treatment dummies reflect average treatment effects that may mask heterogeneity across priors. Under a Bayesian interpretation, the coefficients β measure how treatments change the weight that respondents place on their prior narrative when forming posterior beliefs relative to the control group (see, e.g., Coibion et al. 2022).

Results are reported in Table 1 for positive narratives, and are deferred to App. Table D.5 for negative ones. Overall, Trs. `CB` and `Video+CB` systematically increase opposition to monetary finance, across all narratives, while Tr. `Video` has no detectable effect. Tr. `Video+CB` has the largest effect, with an estimate close to 0.15 point out of the five-point Likert scale, which is substantial since it is about 20% of the effect of a negative prior about monetary finance – about 0.6 point on the Likert scale; see Col. VII. The effect of this treatment is stronger among respondents who identify a loss of discipline or tax increase among the risks associated to monetary finance (Cols. IV and V of App. Table D.5). The CB blogpost alone has a milder, yet significantly negative, effect.

Among people who aligned with the MMT narrative, all treatments foster opposition to monetary finance with Tr. `Video+CB` having a large effect comparable to the magnitude of the association with the 'none' prior. The effect of Tr. `Video+CB+Media` tells us whether the negative view of the CB piece towards monetary finance outweighs the positive message from the media piece in respondents' posterior support. This treatment induces less support for monetary finance among the respondents whose positive priors align with the MMT and the 'better-than-debt' narratives, and among those who cite governance issues on the negative side. Respondents with a diffuse but positive prior (see Col. VI of Table 1) instead update their beliefs in the direction of the media piece, although the effect is not identified very precisely. Nonetheless, Tr. `Video+CB+Media` does not overall shift opinions about monetary finance, which highlights the difficulty of broadly affecting beliefs with multiple information pieces and in presence of a contradiction.

Beyond narratives, other pre-treatment covariates could influence treatment effects on views on monetary finance: political orientation if it influences opinions on unconventional fiscal policy, trust in economic experts or the ECB since the treatments originate from

Similarly, we have seven negatives narratives: the six narratives in Fig. 4b and 'none.'

	Treatment only	MMT	Better than debt	Stimulus	Avoid taxes	Ambiguous	None
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
`Video`	-0.030	-0.012	-0.028	-0.034	-0.036	-0.042	-0.051
	(0.033)	(0.033)	(0.033)	(0.034)	(0.033)	(0.035)	(0.038)
`Video+CB`	-0.105***	-0.090***	-0.099***	-0.110***	-0.110***	-0.123***	-0.112***
	(0.033)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.039)
`CB`	-0.078**	-0.068**	-0.078**	-0.079**	-0.080**	-0.078**	-0.124***
	(0.032)	(0.032)	(0.033)	(0.033)	(0.032)	(0.034)	(0.037)
`Video+CB+Media`	-0.040	-0.024	-0.029	-0.049	-0.044	-0.062*	-0.065*
	(0.034)	(0.035)	(0.035)	(0.035)	(0.034)	(0.035)	(0.039)
Narrative		0.317**	0.389***	0.221**	0.270	0.327***	-0.599***
		(0.145)	(0.121)	(0.096)	(0.496)	(0.074)	(0.046)
Interaction term between Narrative and Treatment...							
`Video`		-0.429**	-0.121	0.039	0.013	0.043	0.001
		(0.174)	(0.182)	(0.131)	(0.517)	(0.105)	(0.067)
`Video+CB`		-0.393**	-0.229	0.037	0.027	0.070	-0.040
		(0.177)	(0.179)	(0.142)	(0.517)	(0.106)	(0.068)
`CB`		-0.335*	-0.059	-0.003	1.080	0.006	0.120*
		(0.194)	(0.179)	(0.130)	(0.685)	(0.102)	(0.066)
`Video+CB+Media`		-0.398**	-0.333*	0.056	-0.035	0.173	0.051
		(0.180)	(0.184)	(0.129)	(0.522)	(0.109)	(0.068)
Intercept	2.731***	2.721***	2.718***	2.715***	2.730***	2.693***	2.950***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.024)	(0.026)
N	8601	8601	8601	8601	8601	8601	8601
R^2	0.001	0.002	0.004	0.006	0.003	0.019	0.079

Notes: Estimates of Eq. (3) with HC3 robust errors, the dependent variable is the support for monetary finance on a systematic basis, on a Likert scale from 1 (strongly oppose) to 5 (strongly support); *p<0.1; **p<0.05; ***p<0.01.

Table 1: Treatment effects by positive narratives

them, or macroeconomic knowledge if it affects treatment comprehension. Respondents' overall inflation and tax outlooks may also interact with their engagement with the policy arguments of the texts, or pre-treatment confidence in one's opinion could also influence the malleability of opinions. Table 2 reports estimates of Specification (3) where treatment dummies are interacted with each of these dimensions instead of with narratives.

While we do not find any heterogeneous treatment effect along political orientation or

tax expectations (Cols. III and VII), high macroeconomic knowledge and especially high inflation expectations reinforce the effect of Tr. `Video+CB` on the opposition to monetary finance (Cols. II and VI). The video alone only decreases support for monetary finance among respondents who had a strong prior (Col. I). People who trust experts also tend to align more with the media piece in Tr. `Video+CB+Media` than other respondents (Col. V). Perhaps surprisingly, in Tr. `Video+CB` trust is associated with *more* support for monetary finance (Cols. IV and V). This effect speaks against the treatments primarily affecting respondents via an 'elite cue' effect, and are encouraging for CB communication since it shows that it can reach people with little trust or awareness of the institution.

Finally, App. Table D.8 reports estimates of Eq. (3) but using the extent to which respondents are certain about their post-treatment opinion about monetary finance, conditioning on their pre-treatment confidence, each on the same five-point Likert scale, with higher values indicating stronger confidence. All treatments improve self-confidence in post-treatment opinions, the more so among initially uncertain respondents, but only Tr. `Video+CB` does so conditional on all narratives, except among respondents who think that monetary finance has no drawback at all.

Finding 2 (Information provision and opinions on monetary finance)

- *Only the CB educational blog post preceded by the introduction video on public finance significantly and confidently decreases the support for monetary finance, and even more so among respondents whose prior align with MMT and those who do not know or trust the CB.*
- *The video alone does not impact views on monetary finance, while the CB blogpost alone has smaller and less robust effects than the combination of the two.*
- *When confronted to a contradiction, the effect of the video and the CB blogpost on the support for monetary finance becomes muted, and may even be overturned among people who trust economic experts or have diffuse priors.*

The treatments do not discuss fiscal consolidation and the only mention of CB independence is in the video, but the induced changes in views about monetary finance may also spill over to other fiscal beliefs. We now examine these spillovers and shed light on the underlying mechanisms.

	Interaction with the following pre-treatment covariates:						
	Confidence in opinion on MF	High policy literacy score	Right-wing views	Trust the ECB (and know it)	Trust economic experts	High inflation expecta-tions	High tax expecta-tions
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
`Video`	0.048	-0.020	0.004	-0.045	-0.039	0.009	-0.035
	(0.037)	(0.036)	(0.038)	(0.036)	(0.037)	(0.042)	(0.035)
`Video+CB`	-0.092**	-0.094***	-0.111***	-0.145***	-0.160***	-0.019	-0.094***
	(0.038)	(0.036)	(0.039)	(0.036)	(0.037)	(0.044)	(0.036)
`CB`	-0.086**	-0.075**	-0.062*	-0.055	-0.110***	-0.033	-0.089***
	(0.036)	(0.035)	(0.037)	(0.035)	(0.036)	(0.042)	(0.034)
`Video+CB+Media`	0.003	-0.025	-0.040	-0.042	-0.082**	0.029	-0.047
	(0.037)	(0.036)	(0.038)	(0.037)	(0.037)	(0.043)	(0.035)
Covariate	-0.186***	-0.344***	-0.025	-0.062	-0.138**	-0.027	0.072
	(0.050)	(0.060)	(0.052)	(0.061)	(0.056)	(0.046)	(0.069)
Interaction term between Covariate and Treatment...							
`Video`	-0.186***	-0.107	-0.108	0.079	0.037	-0.091	0.043
	(0.071)	(0.089)	(0.075)	(0.090)	(0.081)	(0.067)	(0.103)
`Video+CB`	-0.016	-0.156*	0.017	0.220**	0.219***	-0.193***	-0.074
	(0.072)	(0.095)	(0.077)	(0.096)	(0.084)	(0.068)	(0.104)
`CB`	0.021	-0.040	-0.058	-0.121	0.123	-0.098	0.079
	(0.070)	(0.089)	(0.074)	(0.087)	(0.079)	(0.065)	(0.101)
`Video+CB+Media`	-0.091	-0.113	-0.002	0.015	0.163**	-0.156**	0.052
	(0.072)	(0.087)	(0.078)	(0.089)	(0.082)	(0.068)	(0.104)
Intercept	2.801***	2.788***	2.738***	2.743***	2.766***	2.744***	2.720***
	(0.025)	(0.025)	(0.026)	(0.025)	(0.025)	(0.030)	(0.024)
Nb. Obs.	8601	8601	8601	8601	8601	8601	8601
R^2	0.017	0.026	0.003	0.003	0.003	0.007	0.003

Notes: See Table 1. In Col. I, confidence in prior is measured on a five-point Likert scale where higher values mean a stronger prior. In the rest of the columns, the pre-treatment covariate is a dummy equal to one if the respondent obtains a high score, has high inflation or tax expectations, declares right-wing political orientation, or a high level of trust in economic experts or the ECB (conditional on having heard about it).

Table 2: Heterogeneous treatment effects on the support for monetary finance

4.2 Treatment effects on other fiscal beliefs

To assess other treatment effects, we first estimate a system of seemingly unrelated regressions (SURs):

$$\mathbf{Y}_i = A + \Theta \mathbf{Tr}_i + \varepsilon_i, \qquad \mathbb{E}[\varepsilon_i \varepsilon_i'] = \Sigma, \tag{1}$$

where $\mathbf{Y}_i$ gathers the post-treatment supports for monetary finance, CB independence, tax increases, and spending cuts, all measured on the same Likert scale, ε_i is the vector of error terms, and Σ an unrestricted covariance matrix. SUR boils down to OLS given the common regressors but allows for comparisons of estimates across equations to assess coherence across belief changes.

Results are reported in Table 3. Only Tr. `Video+CB` induces coherent opinion shifts towards less support for monetary finance and more for CB independence and tax increases – but not for budget cuts. The other treatments generate correlated shifts across fiscal beliefs that do not always align with their effect on the support for monetary finance (see the first four columns). Notably, the CB blog post alone weakens the support for CB independence because its reference to CB recapitalization and government ownership may have blurred the distinction between operational and financial independence if respondents do not fully grasp the link between government influence and monetary financing. The opposite effect in Tr. `Video+CB` underscores the strength of the video: its addition to the blogpost appears to provide the necessary conceptual knowledge without shifting attitudes regarding monetary finance on its own. Finally, treatment effects are not stronger among people who trust more economic experts or the ECB than others, which further undermines an 'elite cues' channel underlying these effects (see App. Table D.9).

To analyze further the mechanisms behind these effects, we turn to a mediation framework that identifies the indirect treatment effects through changes in opinions about monetary finance and the direct effects (Imai et al., 2010a).[19] Direct effects may occur if the treat-

[19]The related literature typically measures spillovers using IV estimates, where the endogenous belief (the support for monetary finance in our case) is instrumented with the randomized treatment assignment (Roth and Wohlfart, 2020; Coibion et al., 2023; Haaland et al., 2023, inter alia). However, this approach assumes spillovers solely through shifts in the support for monetary finance, but our SUR estimates show that other treatment effects do not consistently align with these shifts (except in Tr. `Video+CB`), which

The dependent variables are the support for:	Average treatment effects			
	monetary finance (I)	CB independence (II)	fiscal consolidation via tax increase (III)	fiscal consolidation via budget cuts (IV)
`Video`	-0.030	-0.269***	0.081**	0.005
	(0.034)	(0.037)	(0.035)	(0.032)
`Video+CB`	-0.105***	-0.187***	0.112***	-0.012
	(0.034)	(0.038)	(0.035)	(0.032)
`CB`	-0.078**	0.060*	0.097***	-0.026
	(0.033)	(0.036)	(0.035)	(0.031)
`Video+CB+Media`	-0.040	-0.177***	0.135***	-0.018
	(0.034)	(0.038)	(0.034)	(0.031)
N	8601	8601	8601	8601
R^2	0.001	0.013	0.002	0.001

Notes: Estimates of the system (1); bootstrap standard errors based on 2,000 replications (sampling observations with replacement). In Col. II, *lower* values mean *more* support for CB independence.

Table 3: SUR estimates of the average treatment effects on fiscal beliefs

ments signal fiscal discipline that affects views simultaneously, or pieces of information affect other fiscal beliefs above and beyond views about monetary finance. Indirect effects operate through the two post-treatment variables related to monetary finance: the support for it and the degree of confidence in one's opinion on the matter, denoted by M_k, $k \in \{1, 2\}$. These two variables mediate a substitution mechanism analogous to a household budget constraint through which negative attitudes towards one funding source (monetary financing) induce support for another (taxes) or spending restrictions (fiscal discipline). They also mediate the reasoning that government control would induce monetary financing, hence fostering support for CB independence. For each mediator k, we estimate the following cross-sectional model:

would complicate the IV interpretation. For Tr. `Video+CB`, we report such IV estimates in App. Table D.10 and treat them as suggestive evidence of spillovers from more opposition to monetary finance to more support for CB independence: for instance, a one-point shift on the Likert scale towards more opposition to monetary finance makes respondents about 23% more likely to proceed to sign the petition safeguarding the ban on monetary finance in the ECB's mandate.

$$M_{k,i} = \alpha_k + \boldsymbol{\delta}_k \mathbf{Tr}_i + \boldsymbol{\gamma}_k \mathbf{X}_i + u_{k,i}, \tag{2}$$

and for each post-treatment outcome Y_i:

$$Y_i = a + \mathbf{c}\mathbf{Tr}_i + \sum_{k=1}^{2} b_k M_{k,i} + \mathbf{d}\mathbf{X}_i + \varepsilon_i, \tag{3}$$

where $\boldsymbol{\delta}_k$ gives the causal effects of each treatment on mediator M_k, b_k the effect of mediator M_k on outcome Y_i – conditional on treatment assignment, the other mediator, and pre-treatment controls $\mathbf{X}_i$ which includes prior narratives and the list of covariates in App. Table D.5, and $\mathbf{c}$ the direct treatment effects after accounting for the effects of the mediators. For a given treatment j, the total indirect effect through the two mediators is given by $\sum_{k=1}^{2} \delta_{k,j}\, b_k$, the direct effect by c_j, and the total effect by the sum of the two. Causal inference under a mediation framework requires no unobserved confounder of the mediator-outcome relationships (Imai et al., 2010a). Randomized treatment assignment and the inclusion of a rich set of covariates including prior narratives contribute to support the use of this framework in our study, and robustness to violations of sequential ignorability is assessed using robustness ratios (Imai et al., 2010b; Cinelli and Hazlett, 2020).

Results are presented in Table 4. The estimated indirect treatment effects on the support for CB independence amount to a maximum of 15% of the total treatment effects, in Tr. `Video+CB`, which provides evidence that a small share of respondents engage in reasoning that links government control to monetary financing. Trs. `Video` and `Video+CB+Media` directly foster the support for CB independence, and the largest effect comes from the video alone, perhaps translating the dilution of the video message when presented before other pieces of information. As discussed above, Tr. `CB` indirectly increases the support for CB independence via a decrease in the support for monetary finance but its direct effect does the opposite. Trs. `Video+CB` and `CB` increase the likelihood to sign the petition via their effect on the opposition to monetary finance, while the fairly large negative direct effect of Tr. `Video+CB+Media` probably reflects survey fatigue.

Treatment	Indirect effects (via MF support)	Indirect effects (via more certainty)	Direct effect	Total effect
Panel A. Support for CB independence (lower values mean more support)				
`Video`	-0.005	0.002	-0.261**	-0.265**
	[-0.016, 0.009]	[-0.001, 0.005]	[-0.324, -0.189]	[-0.332, -0.192]
`Video+CB`	-0.031**	0.003**	-0.164**	-0.192**
	[-0.041, -0.016]	[0.000, 0.006]	[-0.223, -0.096]	[-0.247, -0.123]
`CB`	-0.022**	0.000	0.082**	0.061**
	[-0.035, -0.009]	[-0.002, 0.002]	[0.032, 0.148]	[0.004, 0.121]
`Video+CB+Media`	-0.011	0.002	-0.155**	-0.165**
	[-0.021, 0.002]	[-0.000, 0.005]	[-0.221, -0.091]	[-0.234, -0.096]
Robustness ratio of the direct effect: 6.46 (with respect to political orientation)				
Panel B. Likelihood of signing the petition to safeguard CB independence (p.p.)				
`Video`	0.002		-0.094	-0.091
	[-0.004, 0.010]		[-0.240, 0.063]	[-0.237, 0.068]
`Video+CB`	0.014**		0.029	0.042
	[0.006, 0.024]		[-0.121, 0.172]	[-0.105, 0.186]
`CB`	0.010**		-0.084	-0.075
	[0.003, 0.019]		[-0.233, 0.057]	[-0.224, 0.065]
`Video+CB+Media`	0.005		-0.195**	-0.190**
	[-0.002, 0.014]		[-0.341, -0.056]	[-0.339, -0.049]
Robustness ratio of the indirect effect: 1.1 (with respect to income)				
Panel C. Support for fiscal consolidation via tax increase				
`Video`	-0.001	-0.002**	0.063	0.061
	[-0.003, 0.002]	[-0.005, -0.000]	[-0.001, 0.133]	[-0.002, 0.133]
`Video+CB`	-0.004**	-0.003**	0.114**	0.106**
	[-0.008, -0.001]	[-0.007, -0.001]	[0.047, 0.182]	[0.042, 0.175]
`CB`	-0.003**	-0.000	0.089**	0.086**
	[-0.006, -0.000]	[-0.002, 0.001]	[0.028, 0.167]	[0.023, 0.164]
`Video+CB+Media`	-0.001	-0.002**	0.116**	0.113**
	[-0.004, 0.000]	[-0.005, -0.000]	[0.055, 0.188]	[0.051, 0.185]
Robustness ratio of the direct effect: 1.02 (with respect to trust in the ECB)				
Panel D. Support for fiscal consolidation via budget cuts				
`Video`	0.000	0.006**	0.003	0.009
	[-0.001, 0.002]	[0.001, 0.012]	[-0.036, 0.067]	[-0.030, 0.072]
`Video+CB`	0.001	0.011**	-0.004	0.008
	[-0.002, 0.005]	[0.005, 0.019]	[-0.054, 0.055]	[-0.043, 0.070]
`CB`	0.001	0.001	-0.017	-0.014
	[-0.002, 0.003]	[-0.004, 0.006]	[-0.066, 0.047]	[-0.064, 0.050]
`Video+CB+Media`	0.000	0.007**	-0.017	-0.010
	[-0.001, 0.002]	[0.002, 0.013]	[-0.070, 0.049]	[-0.063, 0.054]
Robustness ratio of the direct effect: NA (since non-significant)				

Notes: Estimates of (2)-(3) using nonparametric bootstrap with 2,000 replications. Panel B only uses the support for monetary financing because effects are not additively separable with multiple mediators in nonlinear specifications, effects reported on the log-odds, indirect effects evaluated at the treatment, so that the indirect effect matches the difference between total and direct effects. The robustness ratios concern the effects of Tr. `Video+CB` and are defined relative to the strongest observed covariate given in brackets.

Table 4: Mediation results of the spillovers from views on monetary finance to other beliefs

All indirect treatment effects on the support for tax increase are negligible and overall treatment effects quasi-nonexistent on the support for spending cuts, which speaks against a substitution model by analogy with household finance. All treatments involving the CB blogpost directly fosters support for tax increases to a similar extent, which aligns with CB communication framing overall fiscal discipline. Higher-than-one robustness ratios indicate that these direct treatment effects are moderately to strongly robust to unobserved confounding, in particular for the support for CB independence.[20]

In the same vein, SUR estimates in App. Table D.13 reveal that Trs. `Video+CB` and `CB` increase post-treatment inflation concerns associated to monetary finance in line with their decrease of the support for this policy. App. Table D.12 further presents a mediation decomposition of the main treatment effects on the support for monetary finance between direct and indirect effects through these future tax and inflation concerns. Tax expectations can represent intertemporal reasoning via Ricardian equivalence, and inflation expectations can translate a form of general equilibrium reasoning through which an increase in the government's nominal resources feeds into the aggregate price level. Weak mediation shares reveal that these mechanisms do not drive the treatment effects on the support for monetary finance, and the bulk of the treatment effects is direct – and only significant in Trs. `Video+CB` and `CB`.

These findings are illustrated in the directed acyclic graph (DAG) in Figure 7 that summarizes the causal structure underlying the effects of Tr. `Video+CB` in our experiment. Taken together, the direct effects do not provide strong evidence for activation of narrowly defined economic mechanisms such as household budget analogies, or precise economic reasoning regarding tax or inflation consequences associated to distinct fiscal policies. Instead, direct effects are compatible partly with direct message uptake in case of semantic overlap between treatment content and outcomes, notably when it comes to the direct effect of the video

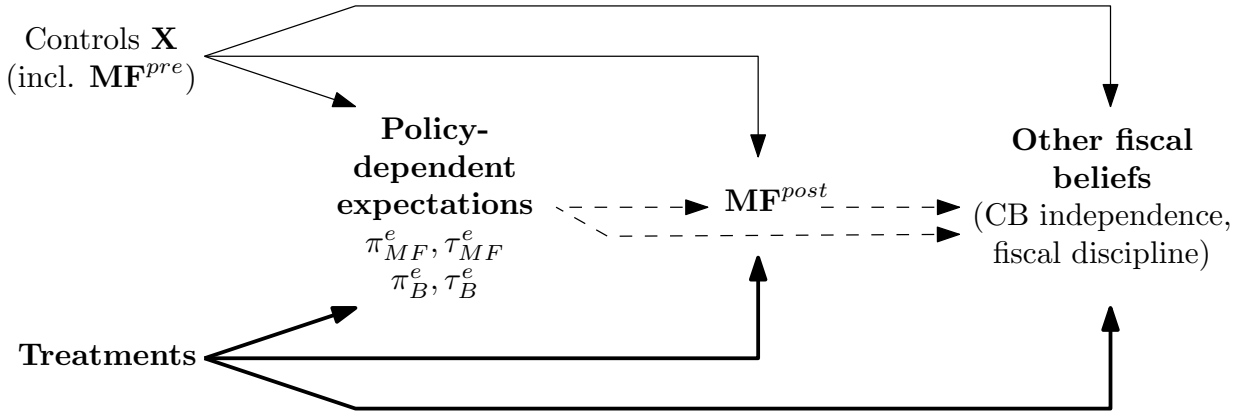
[20]Robustness ratios are the ratio of the partial R^2 required of an omitted confounder to render the effect insignificant to the largest partial R^2 observed among all covariates (VanderWeele, 2015; Cinelli and Hazlett, 2020). Given randomized treatment assignment and the weak mediation channels, a lack of robustness of the direct effect would not undermine the existence of a treatment effect, but rather its interpretation, since treatments may then operate through unobserved mediating mechanisms. In this respect, the direct treatment effects are also robust to including policy-dependent tax and inflation concerns elicited post-treatment as additional mediators; see App. Table D.11.

on CB independence or of the CB text on inflation consequences of monetary finance, and partly with simultaneous belief updating. An 'elite cue' mechanism is however unlikely to be the main driver of our results since it would predict stronger treatment effects among individuals with higher trust, which we do not observe. Instead, the treatments appear to induce a broad shift toward orthodox, technocratic, and institutional policy views, possibly by framing fiscal discipline and making the government budget constraint salient. Under this interpretation, lower support for monetary finance, greater support for fiscal discipline, and stronger support for CB independence do not arise from a causal chain between beliefs, but from the parallel application of this frame to different policy questions. This interpretation is compatible with mechanisms such as transfer learning based on a mental model (Esponda et al., 2023): people extract a general mental model of public finance – e.g., emphasizing binding budget constraints, real costs of money creation, and the role of institutions – and apply it across related domains. Under this view, it is possible that the combination of the video with CB communication favors the use of a fiscal "seriousness' heuristic that strengthens support for fiscal discipline despite the absence of explicit fiscal content. The observed cross-learning patterns from the SUR estimates in this treatment are compatible with joint belief updating driven by a common representation.

Finding 3 (Information provision and other fiscal beliefs)

- *CB communication coupled with the educational video shifts coherently and simultaneously multiple fiscal beliefs beyond the opposition to monetary finance, namely concerns about future inflation when implementing public spending, support for fiscal discipline, and for CB independence.*
- *We interpret these effects partly as direct information uptake, and partly through the lens of a broadly applied mental model of fiscal discipline, rather than through causal economic reasoning.*

Finally, we uncover persistent treatment effects using the recontact wave.



Notes: Pre-treatment covariates gathered in vector X include all socio-economic, political, and demographic variables given in App. Fig. D.5, the narratives regarding monetary finance respondents may have been classified into, and the prior opinion on monetary finance (both the support and how certain the respondent is in their answer). Treatments are randomly assigned by design (see App. Table B.1). Policy-dependent expectations are the inflation and tax worries in case public spending would be debt- or money-financed. $\mathbf{M}^{post}$ is the posterior support of monetary finance (also including how certain the respondent is in their support). Thicker lines depict the main direct effects of the treatments on opinions as identified in the mediation analysis, and dashed lines show the weak mediation effects.

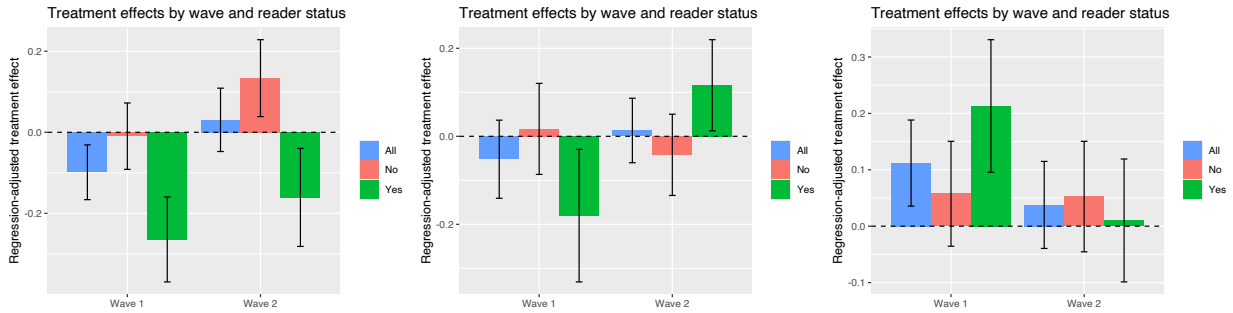
Figure 7: Directed acyclic graph of the effect of Tr. `Video+CB` on fiscal beliefs

4.3 Persistent treatment effects in the recontact wave

Fig. 8 compares the effects of Tr. `CB+Video` on respondents' opinions in the two waves, and we defer to App. Fig. D.9 the effects of the other treatments. Even after controlling for a wide range of socio-economic variables and prior narratives expressed in Wave 1,[21] the effects of the video combined with the CB text persist weeks later when it comes to opposing monetary finance and supporting CB independence,[22] and are concentrated among respondents with relatively higher engagement with the treatment content, measured as spending more than the median recorded time on the CB blogpost page (see Figs. 8a and 8b). While this measure is post-treatment and may reflect selection, the pattern is consistent with an engagement-based mechanism and estimates using pre-treatment predictors of engagement yield similar

[21] The minimum pvalue associated with the F-statistic of the joint significance of all socio-demographic controls (excluding prior narratives) on treatment assignment is 0.134 in Wave 2, which verifies randomization despite the smaller sample restricted to French respondents.

[22] The question in Wave 2 being posed in an opposite way compared to Wave 1, a positive number in Wave 2 signals more support for CB independence, while it signals *less* in Wave 1.



(a) MF (b) CB inde (c) Tax increase

Notes: All pre-treatment controls and prior narratives are included. Readers are defined as respondents who spent more than the median recorded time over all respondents on the CB text, which is taken as a measure of engagement with the treatment. Overall treatment effects are estimated in both waves $w = 1, 2$ as:

$$Y_i^{(w)} = \alpha^{(w)} + \theta^{(w)} \, Tr.\texttt{Video+CB}_i + \delta'^{(w)} X_i + \varepsilon_i^{(w)},$$

where $Tr.\texttt{Video+CB}_i$ is the treatment indicator and X_i is the vector of controls; and treatment effects among readers are estimated as:

$$Y_i^{(w)} = \alpha^{(w)} + \beta^{(w)} \, Tr.\texttt{Video+CB}_i + \gamma^{(w)} \left(Tr.\texttt{Video+CB}_i \times R_i\right) + \delta'^{(w)} X_i + \varepsilon_i^{(w)},$$

where R_i is an indicator for treatment engagement, β measures the treatment effect among non-readers, and $\beta + \gamma$ among readers. Wave 1-effects may differ from Section 4.1 since the samples vary.

Figure 8: Persistent effects of Tr. `Video+CB` in Wave 2 and treatment engagement

results, albeit less precisely estimated (see App. Fig. D.10). No other treatments exerts any persistent effects on the support for monetary financing (see App. Fig. D.9a and D.9d).

Concerning CB independence, about one-third of the effect of the video alone significantly persists across all respondents (see App. Fig. D.9b). About one-half of the direct effect of the CB blog post alone also remains (see App. Fig. D.9e), but none of the treatment spillovers on the support for fiscal consolidation persists (see Figs. 8c, D.9f and D.9c). However, between 540 and 590 respondents per treatment took part in the recontact wave compared to 1,720 in the main wave, which makes it hard to disentangle a true null effect from a lack of statistical power.

Finding 4 (Treatment effects several weeks later) *CB communication coupled with the educational video has lasting effects, these effects being strongest and most precisely identified among relatively more engaged respondents.*

5 Conclusion

This paper explores what people believe regarding public finance trade-offs, in particular monetary finance, which regularly receives media coverage and political attention but remains understudied in the academic literature. We conduct an innovative experiment with educational content within our own survey of a representative sample of 8,601 Europeans across three diverse OECD countries. We rely on OE questions and LLM-assisted textual analysis to identify the main narratives that people attach to monetary finance. We find that people do have opinions, even on this apparently complex matter, but we also identify knowledge gaps where educational communication may be beneficial to enhance the legitimacy of CBs, which are non-elected institutions. For instance, people do not necessarily relate CB independent mandates with the inflation risks of monetary financing. Furthermore, concerns about higher future taxes do not prevail, no matter the public funding option considered, and we find little support for intertemporal or general equilibrium reasoning, such as Ricardian equivalence. These observations have implications for policy design and modeling since myopia undermines the benefits of fiscal and monetary policy coordination, but also attenuates the costs of policy conflicts compared to the predictions of rational expectation models.

Next, in our RCT, like in reality, the CB communication arguing against monetary finance may compete with a news article from a renown economic expert making the opposite point. A consistent pattern emerges across all specifications: the combination of the CB blogpost with the educational video produces robust and coherent effects, namely more opposition to monetary finance – even among respondents initially aligned with MMT or with low trust or knowledge of CBs – heightened inflation concerns with this policy, and more support for fiscal discipline and CB independence. These effects persist over time among relatively more engaged respondents.

These findings show that, with appropriate educational context, CB communication can lodge in people's minds even on seemingly more complex and broader policy matters than the inflation-related questions usually considered in the related literature and among practitioners. How beliefs about future consequences of policy options are formed and may be

influenced by CB communication deserves further investigation. While many RCTs find that CB communication can affect opinions through numerical information, we add that it can do so through powerful punchlines ("there is nothing magic"), which may work not only through content, but also through salience and recall: by explicitly anchoring communication in a familiar narrative ("magic money") and overturning it, the treatment can be thought as providing a simple associative cue, or heuristic, that facilitates retention and reuse. Along this interpretation, CB communication affects opinions more when it directly connects to respondents' narratives than when priors are diffuse, in which case competing narratives may dominate. Our results are compatible with direct message uptake and substantial learning beyond opposing monetary finance to inflation expectations, support for CB independence and fiscal discipline. Limited evidence of economic reasoning in our data has also implications for macroeconomic models, which typically rely on agents' optimization and model-consistent belief updating.

While the two pieces of information debating monetary finance do so in the context of the COVID-19 pandemic government rescue plans, the relevance of the questions addressed in this paper goes well beyond this particular event. There is no shortage of challenges potentially requiring large government intervention and public adhesion. As memories of the recent inflation surge fade and large amounts of public debt have been accumulated, monetary finance, or its weaker form fiscal dominance, may regain prominence in the public debate. Economic education and CB communication are therefore likely to remain first-order concerns for policy makers. While opposition to monetary financing often originates from CBs, and these institutions devote substantial resources to engaging with the public, they need not bear the sole responsibility for such communication. In practice, monetary financing sits at the intersection of fiscal and monetary authorities, and a clearer delineation of roles between CBs and Treasuries remains an open question. More broadly, our findings raise important questions about the institutional context of communication on policies in general. Our experimental design abstracts from some features of real-world information environments. In particular, households are typically exposed to dispersed messages and the strong effects of the educational video highlight the importance of context, which may suggest that communication may be less effective without such framing. These considerations point to the need for further work on how policy communication can operate in the real world,

and how institutional design shapes both its credibility and its impact.

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