Household Analogy Revisited: How do Japanese People Respond to Government Borrowing and Assets? *

Junpei Suzuki[†1], Susumu Annaka[‡2], Takaharu Saito[§3], and Gento Kato[¶4]

[1] *The University of Tokyo*
[2] *Hirosaki University*
[3] *Nagoya University of Commerce and Business*
[4] *Meiji University*

May 16, 2024

Abstract

'Household analogy' is a form of rhetoric that equates the government budget with a household one and is typically used to advocate fiscal consolidation through the emphasis on the threat of bankruptcy. The present paper sets its context in Japan and extends the survey experiment conducted by Barnes and Hicks (2021), which found the household analogy in the UK to be ineffective in persuading the public. Our results replicated their null findings in Japan. Additionally, we tested whether the household analogy helps persuasion in the opposite direction, to reduce concerns for government borrowing through the emphasis on the plentiful assets owned by the Japanese government, and found no evidence to support such a claim. Subgroup analyses suggested that advocating fiscal consolidation is more successful among those who endorse the analogy and women, but the explicit reference to the household does not increase the persuasiveness of the messages for these subgroups.

Keywords — household analogy, austerity, government debts and assets, survey experiment

*This work was financially supported by Waseda University Grants for Special Research Projects No.2021C-412 (Suzuki) and JSPS KAKENHI Grant-in-Aid No. JP20K22079 (Annaka). The research plan is registered at Open Science Forum (https://osf.io/fg9dz). The authors thank Jamie Scalera Elliott, Yutaka Harada, Kenneth Mori McElwain, Ayano Sato, Yutaro Takano and the participants of the 2022 Japan Public Choice Society Annual Meeting and the 2023 Southern Political Science Association Annual Meeting for their helpful comments.

[†]7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan. E-mail: jsuzuki@iss.u-tokyo.ac.jp
[‡]1 Bunkyo-cho, Hirosaki-shi, Aomori, Japan. E-mail: annaka_1@hirosaki-u.ac.jp
[§]4-4 Komenokicho-sagamine, Nisshin-shi, Aichi, Japan. E-mail: takaharu_saito@nucba.ac.jp
[¶]1-1 Kanda-surugadai, Chiyoda-ku, Tokyo, Japan. Email: gentok@meiji.ac.jp

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Introduction

A series of recent socio-economic turmoils, e.g., the Great Recession and the COVID-19 outbreak, are inflicting fiscal pressure on the developed world. According to some scholars, however, fiscal consolidation is politically costly in that 'painful' measures for this purpose, such as spending cuts and tax hikes, can jeopardize the electoral fortunes of incumbent governments (e.g., Jacques & Haffert, 2021; Pierson, 1996).[1] Politicians and the media sometimes persuade voters to accept them through the 'household analogy', in which a government budget is equated with a household one to provide intuitions on fiscal situations to the uninformed public. The following statement from the Heritage Foundation, an American-based conservative think tank, demonstrates an exemplary case of the household analogy:

> If a median-income American family spent money like the U.S. government, it would have spent all of its earnings, and then put over $46,000 on the credit card in 2020 even though it was already $474,000 in debt. (The Heritage Foundation, 2022)

To examine whether this household analogy successfully persuades the public, Barnes and Hicks (2021) ran a series of observational and experimental studies in the UK and concluded that the household analogy is not effective in changing public attitudes toward government fiscal management. This paper replicates and extends their experiment in the context of Japan. The case of Japan would be a valuable addition to the scholarship on the household analogy for three reasons. The first is Japan's highly deteriorated fiscal condition. Its general government debt amounts to 254% of GDP in 2022 (OECD, 2024). This percentage is by far the worst among the OECD countries, making Japan a highly relevant case for exploring public attitudes toward government fiscal management. The second is the pervasiveness of the household analogy in news reports and government-provided messages in Japan (e.g., Ito, 2019; Ministry of Finance, 2018). Given its popularity in elite discourse, examining the effectiveness of the household analogy has significant policy

[1] The empirical evidence on this 'electoral punishment' thesis is mixed (see Alesina et al., 2011; Peltzman, 1992, for the counterarguments).

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

implications in Japan.

The final benefit of focusing on Japan is the possibility to shed light on the role of government-owned assets. Barnes and Hicks (2021) focused solely on persuasive messages to increase the support for fiscal consolidation through the emphasis on the possibility of government bankruptcy. However, if a government (or a household) owns a large quantity of assets, such assets lend credibility to their solvency and should ease concerns about further borrowing. In the UK, as the failed 'mini-budget' proposal of Prime Minister Liz Truss ruined her political fortune, their vulnerability to the international financial market due to the paucity of government-owned assets makes this alternative mechanism implausible.[2] In contrast, the Japanese government owns plentiful assets and has been managing its budget despite the long-term imbalances. As a result, the Japanese case provides a critical opportunity to inspect whether the emphasis on government-owned assets reduces public concerns about fiscal imbalance (and whether the explicit reference to household makes this persuasion more successful).

In what follows, we describe our theoretical framework, introduce our experimental design, and then present analytical results. Our results revealed that, on average, the household analogy does not make messages more persuasive regardless of the message's emphasis on state bankruptcy or government-owned assets. Subgroup analyses further suggested that those in favour of the analogy, women, and the less educated were more susceptible to bankruptcy-emphasized messages. On the other hand, even for these persuadable subgroups, we found no evidence that the explicit reference to household makes the persuasion more successful. In the conclusion section, we discussed how our findings provided important insights to the previous scholarship on policy persuasion (e.g., Kawata et al., 2023) and political outcomes of fiscal consolidation (Hübscher et al., 2021).

[2]Official foreign exchange reserves that these two countries own illustrate this stark contrast: Japan's $1.3 trillion vs. UK's $173 billion (Central Intelligence Agency, 2024).

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

How the Household Analogy Theoretically Works: State Bankruptcy and Government-owned Assets

As clarified above, the household analogy is a rhetoric that analogizes government budgets with household ones. Typically, the analogy highlights the threat of bankruptcy to persuade the public to accept fiscal consolidation, stating that an excessive amount of government debt will spiral out of control just as a household with a huge borrowing goes bankrupt. It is expected that a simple emphasis on state bankruptcy causes a person to think of a government budget in an analogical manner and makes them fiscally hawkish. Explicit reference to *household* should strengthen this effect as it would actuate one's analogical reasoning. Thus, following Barnes and Hicks (2021), the first set of hypotheses focuses on the role of the household analogy in increasing support for fiscal consolidation:[3]

> **Hypothesis 1A:** The emphasis on the possibility of state bankruptcy increases the opposition to issuing national bonds.

> **Hypothesis 1B:** The explicit reference to household amplifies the effect of emphasizing the possibility of state bankruptcy.

Bankruptcy, however, is not the only way to analogize public finance with household finance. Along with debts, which may cause bankruptcy, assets appear in the balance sheets of any type of budget (including household ones), affecting borrowing decisions. A considerable amount of assets held by a household serves as evidence of its solvency and thus should embolden its members to increase its borrowing. In an analogical manner, the existence of ample government-owned assets, as in the case of Japan, should lead to fiscally dovish attitudes of the public because it reassures them that their government's fiscal management is sustainable. Similarly to the logic for bankruptcy, a mere reference to assets should invoke analogical reasoning, while explicit mention of the household can make the persuasion even more successful. Thus, our second set of hypotheses are summarized as follows:

[3]The expressions of the following hypotheses were slightly modified after the preregistration. See Appendix G for our pre-analysis plan.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Hypothesis 2A: The emphasis on the abundance of government-owned assets decreases the opposition to issuing national bonds.

Hypothesis 2B: The explicit reference to household amplifies the effect of emphasizing the abundance of government-owned assets.

The Experiment on Bond Issuance Preference in Japan

In order to test the hypotheses presented above, we fielded an online survey experiment in Japan between February 23 and 26, 2022. The experiment recruited voting-age respondents via a crowdsourcing platform *Lancers* and resulted in 1,251 eligible responses in total.[4] Given the complexity and technicality of our experimental treatments, one of the advantages of using crowdsourcing services is that registrants, particularly in the Japanese contexts, are relatively more attentive and are less likely to commit satisficing than those recruited from conventional online research company panels (Miura & Kobayashi, 2016).[5] Our sample, if not nationally representative, is fairly balanced with gender ratios of 53.5% male and 46.5% female, age cohort ratios of 20s or younger (17.2%), 30s (32.6%), 40s (30.4%), 50s (15.6%), and 60s or over (4.2%).

In the survey, we randomly assigned the respondents to five groups: one control group (Group 0), two treatment groups on state bankruptcy (Groups 1 and 2), and two treatment groups on government-owned assets (Groups 3 and 4). Regardless of their assigned groups, we first show respondents a general description of government bond issuance: '*Generally speaking, governments issue bonds when they spend more than tax revenue*'. Whereas texts stopped here for Group 0 to directly move on to the question below, we show additional texts to respondents in the treatment groups. For the first

[4]Lancers (https://www.lancers.jp) is one of the largest crowdsourcing platforms based in Japan, with more than one million registered users. We compensated each respondent by 200 yen, and the median response time was 11.55 minutes (thus, the payment was equivalent to an hourly wage of $200 * 60/11.55 = 1038.96$ yen, which is higher than the minimum wages of most Japanese prefectures and comparable to 1,041 yen minimum wage in Tokyo at the time). The original survey had 1,803 observations in total. The final number excludes (1) 75 respondents who dropped out from the survey before the experiment began, (2) 26 satisficers, (3) 213 respondents assigned to the control group where the question on the analogy endorsement was asked prior to the question on the bond issuance (see Appendix F) and (4) 238 respondents who were assigned to a separate experimental condition that is not part of this study.

[5]Satisficing refers to behaviour for respondents to minimize their efforts while responding (Krosnick, 1991).

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

group on state bankruptcy (Group 1), the texts contended that '*... if it continues to issue bonds to spend more than its tax revenue, it will become impossible to repay them and eventually result in fiscal collapse*'. For Group 2, we replaced it with an explicit reference to a household: '*... issuing bonds is the same as a household borrowing money, and if it continues to borrow money to spend more than its income, it will become impossible to repay them and eventually go bankrupt*'. For Groups 3 and 4, in contrast, we reminded respondents that governments can avoid problems in the repayment of bonds because of their assets. The Group 3 texts contended that '*... since the government has various assets (e.g. savings, stocks, and lands) independent of its tax revenue, even if it continues to issue bonds to spend more than its tax revenue, repaying them will never be a big problem*'. The Group 4 texts, again, differed in an explicit reference to a household: '*... issuing bonds is the same as a household borrowing money, but since the government has various assets (e.g., savings, stocks, and lands) independent of its income, even if it continues to borrow money to spend more than its income, repaying them will never be a big problem*'.

After displaying the treatment texts, we asked all the respondents to evaluate their own positions on government bond issuance. More specifically, we ask respondents which of the following positions their opinions are closer to: '*A: The government should actively issue bonds to provide better public services*'; and '*B: The government should avoid issuing bonds as far as possible, even if it leads to a reduction in public services*'. Respondents choose their opinions on a five-point scale: '*Closer to A*' (1: should issue bonds), '*Somewhat closer to A*' (2), '*Neither A nor B*' (3), '*Somewhat closer to B*' (4), and '*Closer to B*' (5: should avoid issuing bonds).[6] This variable served as a dependent variable in our empirical analysis. We then asked about the subjective perception of whether the household analogy is useful or not (five-point *analogy endorsement* variable) and the *preference toward household budget balancing* (additive scale based on five relevant sub-questions). The full details of experimental treatments, question-wording, and variable constructions are provided in Appendix A.

[6] A and B contents are flipped for random half of the respondents to avoid response option ordering effect.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

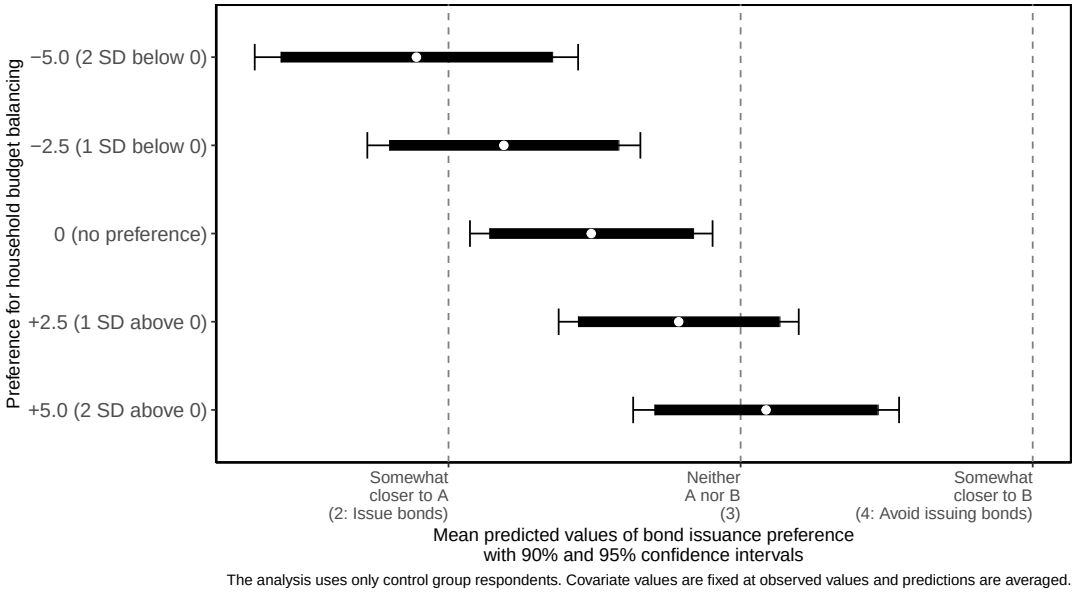

Figure 1: Preference for household budget balancing positively correlates with opposition to issuing government bonds among control group respondents

Analysis: Do Japanese Voters Buy Household Analogy?

We evaluated our hypotheses by ordinary least squares (OLS) regression with bond issuance preference as a dependent variable and experimental treatments as an independent variable. To reduce variance in estimation, all analyses controlled for respondents' gender, age, age-squared, education, ideology, economic evaluation, and government trust.[7] Before presenting results from the experiment, Figure 1 examines the baseline expectation regarding the connection between preferences for household budget balancing and government bond issuance. It plots the mean predicted values of bond issuance preferences from an OLS regression with household budget balancing preference as an independent variable, using only control group respondents. The result demonstrates a clear correlation between these two preferences: the stronger the preference for household budget balancing, the stronger the opposition to issuing government bonds.

Turn to the analysis of the experiment, Figure 2 summarizes our main findings through the mean OLS predicted values of bond issuance preference by experimental groups. In general, the results demonstrate null findings: Our treatments, whether on state

[7]We used robust standard errors to estimate uncertainties. See Appendix B for detailed regression tables behind Figures 1 and 2. The analysis without covariates yielded similar results.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

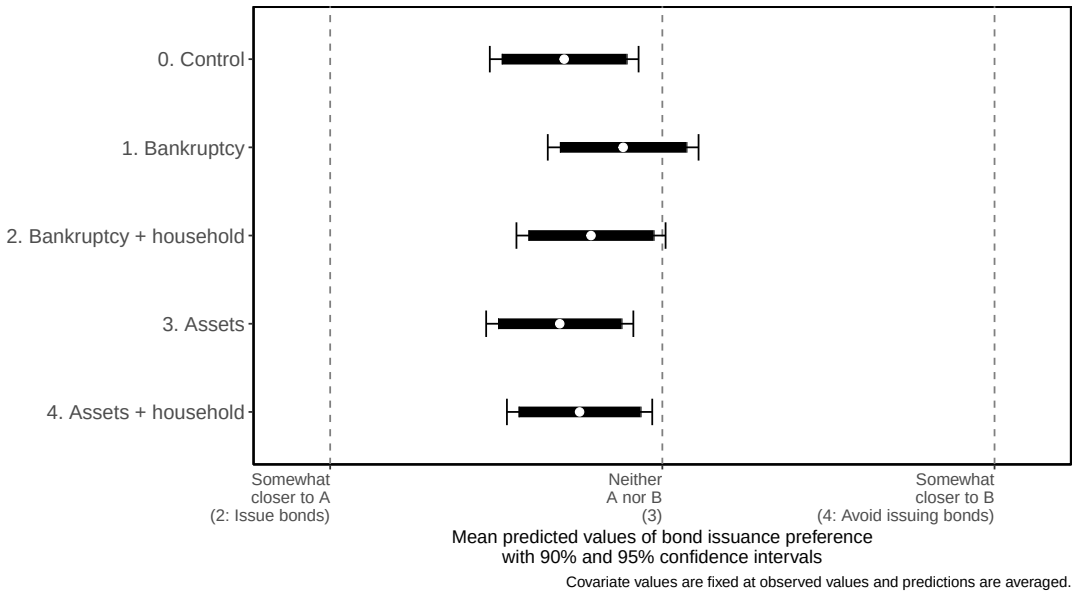

Figure 2: There is weak or no evidence that household analogy can persuade Japanese respondents to support fiscal consolidation

bankruptcy or on government-owned assets, seemed to have no impact on respondents' attitudes toward government bond issuance. The only exception is Group 1, with baseline bankruptcy treatment, which shows slightly stronger preferences for fiscal consolidation compared to the control group ($.05 < p < .10$). However, explicit reference to household (Group 2) does not amplify this tendency. In sum, even when there is an observational connection between preferences for household budget balancing and opposition to government bond issuance, our experimental results show weak or no evidence to support H1 and H2, which replicates and extends the findings made in the UK by Barnes and Hicks (2021) in Japan.

Heterogeneity by Analogy Endorsement and Gender

To explore whether the different subgroups of respondents respond differently to experimental treatments, we examined two potential sources of heterogeneity in treatment effects, i.e., analogy endorsement and respondent's gender.[8] Analytically, we added categorical interaction terms between experimental treatment assignments and heterogeneity-inducing variables to our main model and estimated the marginal effects of experimental

[8]Analysis in this section was not proposed in the preregistration. Therefore, the current inquiries are purely exploratory.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

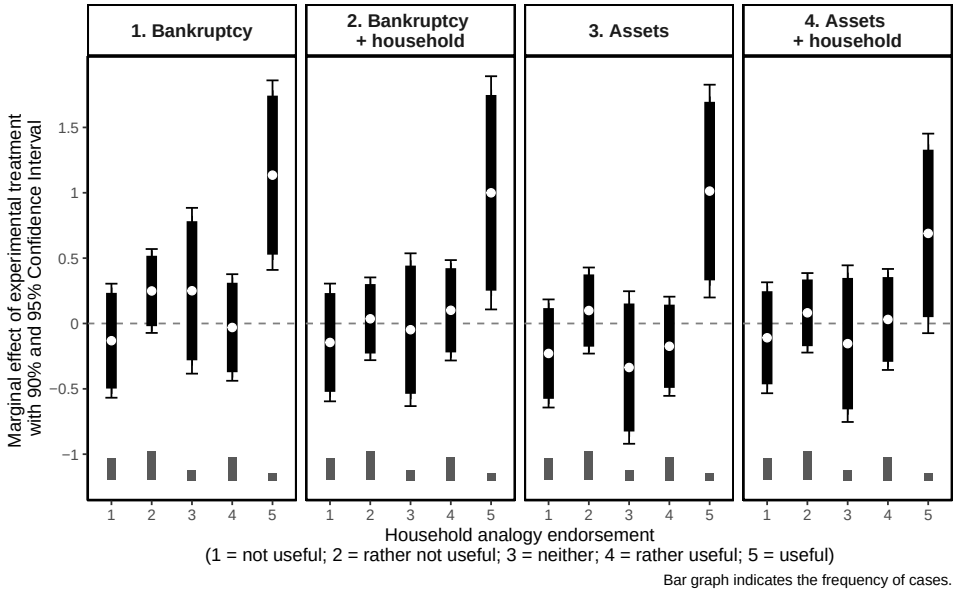

Figure 3: Among analogy endorsers, bankruptcy treatment functioned as hypothesized, but assets treatments and explicit reference to household did not

treatment by subgroups.

In Figure 3, we present the marginal effects of experimental treatments for those who find the household analogy not useful (24.0%), rather not useful (31.7%), neither (11.4%), rather useful (25.2%), and useful (7.7%) (see Appendix C for more analytical details). In the left and centre-left panels, we see evidence that those who clearly endorse the analogy were more obedient to the messages in bankruptcy treatments than others. This result, on its own, provides partial support for H1A. However, the figure also shows at least two tendencies that contradict our theoretical claims. To start, the centre-right and right panels show that asset treatments increased support for fiscal consolidation among analogy endorsers, evidence that directly counters H2A. Furthermore, the centre-left and right panels show that the explicit reference to a household does not make the persuasion more successful among analogy endorsers. This pattern is inconsistent with what we expected from H1B and H2B.

In addition to analogy endorsement, respondent's gender may also yield heterogeneity in experimental treatments. Figure 4 presents results in a parallel way as Figure 3 (see Appendix D for more analytical details). Here, female respondents show notable sensitivity to bankruptcy treatments, i.e., treated female respondents became more inimical to

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

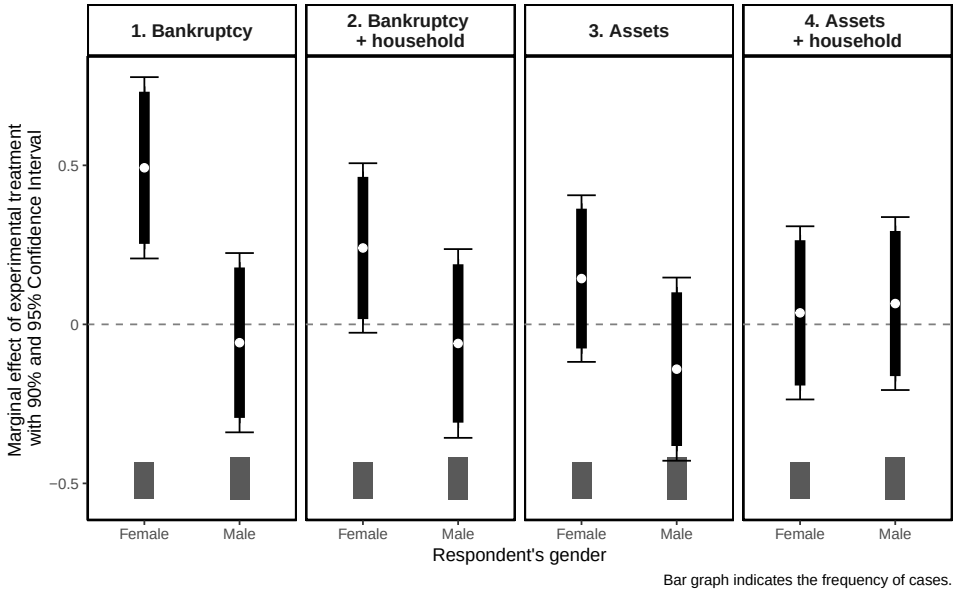

Figure 4: Compared to men, women are more responsive to bankruptcy treatments but no more responsive to assets treatments and explicit references to household

government bonds while treated male respondents did not. This result is consistent with well-documented empirical literature that shows women are more risk-averse than men (e.g., Croson & Gneezy, 2009), and supports H1A among female (but not male) respondents. However, this evidence does not necessarily imply that the household analogy is more effective among women than men. The comparison between the left and centre-left panels of Figure 4 indicates that explicit reference to household did not strengthen, and even weaken, the effectiveness of bankruptcy treatment (which is against H1B). Also, the centre-right and right panels show that asset treatments had no impact on bond issuance preferences of both genders (which does not support H2A and H2B).[9]

Ruling Out Pretreatment Effects and Reverse Causation

To better understand the logic behind the null findings, we conducted supplemental analyses to assess the possibilities of pretreatment effects and reverse causation. For the former, we examined whether the respondent's level of education and exposure to political news moderates the effectiveness of experimental treatments. If there are pretreatment effects, experimental treatments should be more successful in persuading those who are

[9]The effect of gender here is unlikely to be driven by the gendered levels of analogy endorsement. The separate set of analyses showed that the level of analogy endorsement is no higher among women compared to men (see Appendix F).

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

less educated and less attentive to political news. Here, Appendix E analyses revealed no evidence that treatment effects vary by education and political news exposure, except that bankruptcy treatment (without reference to household) weakly functioned as expected among non-university graduates ($p < .10$) but had no effect among university graduates ($p > .10$). Overall, the null findings are unlikely to be the product of the pretreatment effect.

Another relevant mechanism is reverse causation: the mere exposure to the question of government bond issuance preference may increase the endorsement of the household analogy (whereas the exposure to the question of analogy endorsement does not increase the opposition to bond issuance). Barnes and Hicks (2021) contended that this mechanism could explain both the null findings from the experiment and the observed connection between preferences for household budget balancing and government bond issuance. We followed Barnes and Hicks (2021) and created an additional control group (which is outside of the main experiment) and asked the government bond issuance preference question and the analogy endorsement question in a flipped order. If the reverse causation thesis holds, asking the analogy endorsement question first should reduce the endorsement of the household analogy but not have an influence on bond issuance preference (and this is what Barnes and Hicks (2021) found). The analysis in Appendix F, however, provided no evidence to support reverse causation. On the contrary, we found evidence that among those who find the analogy to be useful, asking the analogy endorsement question first induced slightly stronger opposition to bond issuance. This pattern indicates that priming about analogy does heighten the support for fiscal consolidation, but this happens only for a limited group of respondents who expressed conscious support for analogical reasoning. As a result, there remains a puzzle as to why our household analogy treatments were ineffective in persuading Japanese voters even when there is an observational tendency that those who prefer a balanced household budget oppose government bond issuance.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Conclusion

To conclude, our experimental evidence from Japan contributes to the studies of household analogy by replicating and extending the Barnes and Hicks (2021)'s findings in the UK. In Japan, given its worst debt-to-GDP ratio among developed countries, the household analogy is highly prevalent in elite discourse in order to gain public support for fiscal austerity. However, our evidence shows that the threat of state bankruptcy, on average, does not make Japanese voters more fiscally hawkish, and even when it does for specific subgroups (i.e., analogy endorsers and women), the explicit juxtaposition of government budgets with household ones does not make the persuasion more successful. Also, analogizing the Japanese government with a household holding a considerable amount of assets does not make Japanese voters more fiscally dovish either, regardless of whether the analogy contains explicit reference to a household or not. Supplementary analyses imply that our findings are unlikely to be driven by pretreatment effect or reverse causation.

Demonstrating the external validity and expandability of the Barnes and Hicks (2021)'s argument, the current study throws out a further caveat to policymakers and pundits who use the household analogy as a persuasion tool. At the same time, the mechanism behind the observed correlation between household and government budgeting attitudes is still uncertain, as our analysis with Japanese respondents did not find support for the reverse causation mechanism proposed by Barnes and Hicks (2021). It requires further cumulation of inquiries under different institutional and policy environments to fully understand when and why voters do not buy the logic of the household analogy.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

References

Alesina, A., Carloni, D., & Lecce, G. (2011). *The electoral consequences of large fiscal adjustments* (Report).

Barnes, L., & Hicks, T. (2021). Are policy analogies persuasive? the household budget analogy and public support for austerity. *British Journal of Political Science*, 1–19.

Central Intelligence Agency. (2024). The world factbook. https://www.cia.gov/the-world-factbook/

Croson, R., & Gneezy, U. (2009). Gender Differences in Preferences. *Journal of Economic Literature*, *47*(2), 448–474.

Hübscher, E., Sattler, T., & Wagner, M. (2021). Voter responses to fiscal austerity. *British Journal of Political Science*, *51*(4), 1751–1760.

Ito, Y. (2019). Zaisei saiken rongi ni kakeru mono. (what debates on fiscal consolidation lack) [April 28, 2019]. *Asashi Shimbun*, p. 8.

Jacques, O., & Haffert, L. (2021). Are governments paying a price for austerity? fiscal consolidations reduce government approval. *European Political Science Review*, *13*(2), 189–207.

Kawata, K., McElwain, K. M., & Nakabayashi, M. (2023). Narrative premiums in policy persuasion. *Political Psychology*.

Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. *Applied Cognitive Psychology*, *5*(3), 213–236.

Ministry of Finance. (2018). *Zen 15kai shiriizu de Nihon no zaisei ni tsuite kantanni goshokai shiteimasu. Honjitsuha, dai 5kaime 'Nihon no zaisei wo kakeini tatoeruto, shakkin wa ikura?' desu (We introduce Japan's finances in 15 episodes. Today is the 5th episode: If Japan's finances were household ones, how much is their debts?)* [In Japanese]. Retrieved May 6, 2024, from https://x.com/MOF_Japan/status/1022048374239850496

Miura, A., & Kobayashi, T. (2016). Exploring tips to detect "satisficing" in an online survey: A study using university student samples. *Japanese Journal of Social Psychology*, *32*(2), 123–132.

OECD. (2024). General government debt (indicator) [Accessed: 2024-04-30]. https://doi.org/10.1787/a0528cc2-en

Peltzman, S. (1992). Voters as fiscal conservatives. *The Quarterly Journal of Economics*, *107*(2), 327–361.

Pierson, P. (1996). The new politics of the welfare state. *World Politics*, *48*(2), 143–179.

The Heritage Foundation. (2022). U.S. budget vs. family budget. *Federal Budget in Pictures*. Retrieved June 14, 2022, from https://federalbudgetinpictures.com/us-budget-vs-family-budget/

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Appendix:
Household Analogy Revisited:
How do Japanese People Respond to Government Borrowing and Assets?

Contents

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

A Research Design

A.1 Treatment Texts

First, we provided all the respondents with a general description of government bond issuance as follows:

> 政府は一般的に、税による収入以上にお金を使いたい場合、その不足を補うために国債を発行します。(Generally speaking, governments issue bonds when they spend more than tax revenue)

The description above is followed by five experimental treatments with nothing in a control group and additional texts on state bankruptcy and government-owned assets in four treatment groups, respectively:

1. **Control:** N/A. ($N = 251$)
2. **Bankruptcy:** ここで、税収よりも多く支出するために国債を発行し続けると、最終的に返済できなくなり財政破綻してしまう、という考え方があります。(According to some notions, **if it continues to issue bonds to spend more than its tax revenue, it will become impossible to repay them and eventually result in fiscal collapse.**)($N = 244$)
3. **Bankruptcy+Analogy:** ここで、家計でいうと国債は借金と同じなので、収入よりも多く支出するためにお金を借り続けると、最終的に返済できなくなり破産してしまう、という考え方があります。(According to some notions, **issuing bonds is the same as a household borrowing money, and if it continues to borrow money to spend more than its income, it will become impossible to repay them and eventually go bankrupt.**)($N = 239$)
4. **Assets:** ここで、政府には税収とは別に様々な資産（預金・株券・土地など）があるので、税収よりも多く支出するために国債を発行し続けても、返済するのに大きく困ることはない、という考え方があります。(According to some notions, **since the government has various assets (e.g. savings, stocks, and lands) independent of its tax revenue, even if it continues to issue bonds to spend more than its tax revenue, repaying them will never be a big problem.**)($N = 249$)
5. **Assets+Analogy:** ここで、家計でいうと国債は借金と同じですが、政府には収入とは別に様々な資産（預金・株券・土地など）があるので、収入よりも多く支出するためにお金を借り続けても、返済するのに大きく困ることはない、という考え方があります。(According to some notions, **issuing bonds is the same as a household borrowing money, but since the government has various assets (e.g., savings, stocks, and lands) independent of its income, even if it continues to borrow money to spend more than its income, repaying them will never be a big problem.**)($N = 268$)

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

A.2 Government Bond Issuances Preferences

The questionnaire finally moved on to a question of interest in which respondents were asked to place themselves between two extreme opinions on government bond issuance on a five-point scale:

> このことを踏まえてお聞きします。(Let us ask you with the above in mind.)
> 国債の発行について、あなたのお考えは以下のＡ・Ｂのどちらに近いでしょうか？(To which is your opinion on government bond issuance closer, A or B?)
>
> A：国民により良いサービスを提供するためには、政府は積極的に国債を発行するべきだ。 (The government should actively issue bonds to provide better public services.)
> B：国民へのサービスが制限されるとしても、政府は国債の発行をできるだけ控えるべきだ。 (The government should avoid issuing bonds as far as possible, even if it leads to a reduction in public services.)
> (Note: The order of A and B is randomized in an actual survey.)

- Aに近い(Closer to A)
- どちらかと言えばAに近い(Somewhat closer to A)
- どちらとも言えない(Neither A nor B)
- どちらかと言えばBに近い(Somewhat closer to B)
- Bに近い(Closer to B)

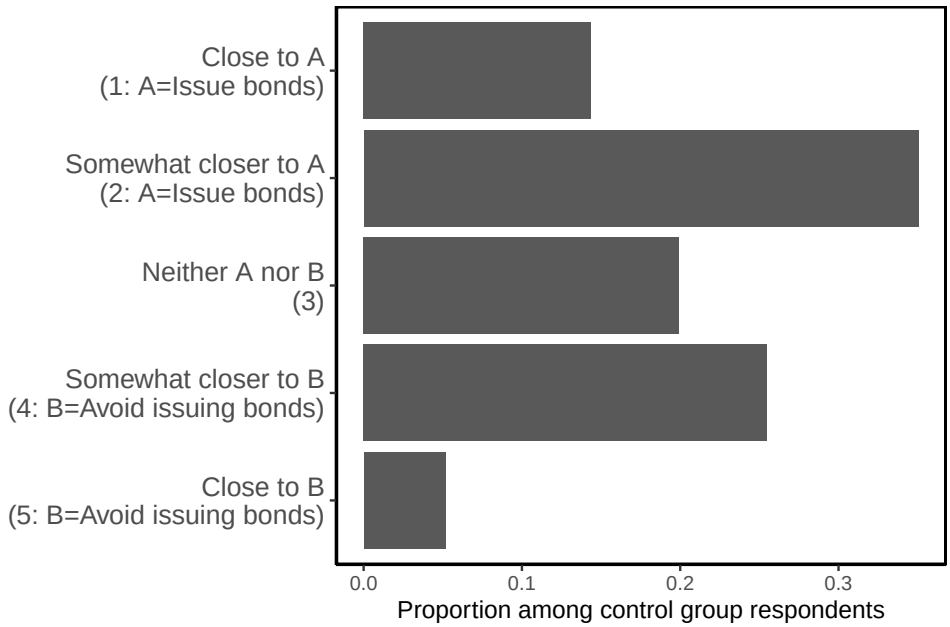

Figure A.1: Distribution of bond issuance preference among control group respondents

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

A.3 Analogy Endorsement

In order to measure respondents' endorsement of the household analogy, our questionnaire included a question as follows:

> 政府の予算、つまり、税収に対して何をどれくらい支出するかについては、様々な考え方があります。あなたのお考えは以下のA・Bのどちらに近いでしょうか？(People have different views about how we should think about government budget balance, that is, what the government spends compared to its income from taxes. To which is your opinion closer, A or B?)
>
> > A：家庭の予算について考えることは、政府の予算を考える時にも役に立つ。(The way we think about household budgets shows us how we should think about government budgets.)
> > B：家庭の予算について考えることと、政府の予算を考えることは別のことだ。(The way we think about household budgets is irrelevant to how we should think about government budgets.)
> >
> > (Note: The order of A and B is randomized in an actual survey.)

- Aに近い(Closer to A = Useful)
- どちらかと言えばAに近い(Somewhat closer to A = Rather useful)
- どちらとも言えない(Neither A nor B = Neither)
- どちらかと言えばBに近い(Somewhat closer to B = Rather not useful)
- Bに近い(Closer to B = Useful)

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

A.4 Household Budget Balancing

In order to measure their attitudes toward household borrowing, our questionnaire asked respondents to evaluate the five opinions below on a four-point scale: 'そう思う (Agree)', 'ややそう思う (Somewhat agree)', 'あまりそうは思わない (Somewhat disagree)', 'そうは思わない (Disagree)'.

> こんにちの日本では人々はさまざまな理由で借金をします。例えば、ある人の借金は将来の投資であり、また別の人の借金は支出を増やすためであり、またさらに別の人の借金はお金がないときの帳尻合わせです。借金に関する次の考えについてそれぞれどのように思いますか？(In Japan today, people borrow money for many different reasons. For example, people may borrow to invest for the future, to increase their personal spending, or to make ends meet when times are hard. How important should each of the following considerations be when households are thinking about borrowing money?)
>
> > 借金することでビジネスや学資ローンや住宅ローンなど、長期的にみて有益な買い物ができる (It allows for purchases that are beneficial in the long run, for example in the form of business or student loans, or mortgages)
> > 借金することでしばらくお金がなくてもしのげる (It allows people to get through temporary hard times)
> > 借金は短期的には有益だが、長期的には有害だ (It seems like a good idea in the short run, but leads to difficulties later on)
> > 借金は制御不能な支出をうながす (It encourages spending at unsustainable levels)
> > 理由や結果がなんであれ、できるだけ借金しないのがよい (Whatever the underlying reasons or consequences, it is better to avoid borrowing if possible)

For the first two items, we recoded responses as follows: Agree = -1.5, somewhat agree = -0.5, somewhat disagree = 0.5, disagree = 1.5. For the last three items, we recoded responses as follows: Agree = 1.5, somewhat agree = 0.5, somewhat disagree = -0.5, disagree = 1.5. We then aggregated responses to all four items, resulting in a theoretical scale ranging from -7.5 to 7.5, with zero indicating a neutral preference.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

B Main Result Tables

Table B.1: Relationship between household budget balancing preference and the opposition for issuing government bonds (OLS regression table behind Figure 1)

	Baseline	Full
(Intercept)	2.545 (0.081)***	2.530 (0.248)***
Household budget balancing preference	0.098 (0.027)***	0.120 (0.029)***
Gender (male)		−0.108 (0.140)
Age (by SD)		0.175 (0.080)*
Age (squared)		0.013 (0.048)
Conservative ideology (by SD)		0.028 (0.082)
Evaluation of economy (by SD)		−0.002 (0.086)
Trust Prime Minister (by SD)		0.132 (0.073)$^{+}$
R^2	0.044	0.101
Adj. R^2	0.041	0.067
Num. obs.	251	247
RMSE	1.123	1.104

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$. Also controlled for treatment conditions, omitted from the output.

Table B.2: The effect of household analogy treatments on opposition to government bond issuance (OLS regression table behind Figure 2)

	Baseline	Full
(Intercept)	2.721 (0.072)***	2.808 (0.125)***
Bankruptcy treatment	0.148 (0.105)	0.178 (0.103)†
Bankruptcy + household analogy	0.099 (0.103)	0.081 (0.102)
Assets treatment	−0.042 (0.103)	−0.013 (0.100)
Assets + household analogy	0.036 (0.098)	0.046 (0.099)
Gender (male)		−0.344 (0.065)***
Age (by SD)		0.100 (0.034)**
Age (squared)		0.007 (0.025)
Education (junior college)		0.089 (0.100)
Education (university)		0.057 (0.083)
Conservative ideology (by SD)		−0.085 (0.035)*
Evaluation of economy (by SD)		0.013 (0.044)
Trust Prime Minister (by SD)		0.143 (0.034)***
R^2	0.003	0.058
Adj. R^2	0.000	0.049
Num. obs.	1251	1238
RMSE	1.144	1.116

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

C Result Table: Heterogeneity by Analogy Endorsement

Table C.1: The effect of household analogy treatments on opposition to government bond issuance, moderated by analogy endorsement (OLS regression table behind Figure 3)

	Baseline	Full
(Intercept)	2.526 (0.164)***	2.661 (0.187)***
Bankruptcy treatment	−0.160 (0.228)	−0.132 (0.222)
Bankruptcy + household analogy	−0.119 (0.243)	−0.145 (0.230)
Assets treatment	−0.254 (0.224)	−0.229 (0.211)
Assets + household analogy	−0.171 (0.220)	−0.109 (0.216)
Household analogy rather not useful	0.224 (0.201)	0.146 (0.197)
Household analogy neither	0.397 (0.287)	0.292 (0.288)
Household analogy rather useful	0.442 (0.213)*	0.381 (0.209)†
Household analogy useful	−0.318 (0.298)	−0.257 (0.304)
Bankruptcy * analogy (rather not useful)	0.345 (0.281)	0.381 (0.277)
Bankruptcy * analogy (neither)	0.313 (0.391)	0.382 (0.394)
Bankruptcy * analogy (rather useful)	0.137 (0.309)	0.101 (0.304)
Bankruptcy * analogy (useful)	1.431 (0.433)***	1.267 (0.432)**
Bankruptcy + household * analogy (rather not useful)	0.155 (0.293)	0.181 (0.282)
Bankruptcy + household * analogy (neither)	0.001 (0.377)	0.098 (0.375)
Bankruptcy + household * analogy (rather useful)	0.242 (0.307)	0.246 (0.302)
Bankruptcy + household * analogy (useful)	1.268 (0.530)*	1.145 (0.509)*
Assets * analogy (rather not useful)	0.313 (0.281)	0.328 (0.270)
Assets * analogy (neither)	−0.151 (0.367)	−0.107 (0.365)
Assets * analogy (rather useful)	0.043 (0.296)	0.055 (0.286)
Assets * analogy (useful)	1.358 (0.467)**	1.242 (0.465)**
Assets + household * analogy (rather not useful)	0.242 (0.266)	0.191 (0.266)
Assets + household * analogy (neither)	−0.105 (0.370)	−0.045 (0.375)
Assets + household * analogy (rather useful)	0.220 (0.293)	0.140 (0.293)
Assets + household * analogy (useful)	1.046 (0.435)*	0.798 (0.445)†
Gender (male)		−0.284 (0.065)***
Age (by SD)		0.091 (0.034)**
Age (squared)		0.000 (0.026)
Education (junior college)		0.096 (0.101)
Education (university)		0.050 (0.083)
Conservative ideology (by SD)		−0.060 (0.035)†
Evaluation of economy (by SD)		−0.003 (0.043)
Trust Prime Minister (by SD)		0.137 (0.034)***
R^2	0.061	0.101
Adj. R^2	0.042	0.077
Num. obs.	1251	1238
RMSE	1.120	1.100

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

D Result Table: Heterogeneity by Respondent's Gender

Table D.1: The effect of household analogy treatments on opposition to government bond issuance, moderated by respondent's gender (OLS regression table behind Figure 4)

	Baseline	Full
(Intercept)	2.830 (0.097)***	2.691 (0.135)***
Bankruptcy treatment	0.412 (0.145)**	0.492 (0.145)***
Bankruptcy + household analogy	0.201 (0.135)	0.240 (0.136)†
Assets treatment	0.094 (0.135)	0.144 (0.134)
Assets + household analogy	−0.006 (0.139)	0.036 (0.139)
Gender (male)	−0.197 (0.142)	−0.131 (0.142)
Bankruptcy * gender (male)	−0.450 (0.205)*	−0.550 (0.205)**
Bankruptcy + household * gender (male)	−0.261 (0.204)	−0.300 (0.203)
Assets * gender (male)	−0.273 (0.201)	−0.285 (0.199)
Assets + household * gender (male)	0.073 (0.196)	0.029 (0.196)
Age (by SD)		0.103 (0.033)**
Age (squared)		0.007 (0.025)
Education (junior college)		0.085 (0.100)
Education (university)		0.064 (0.083)
Conservative ideology (by SD)		−0.087 (0.035)*
Evaluation of economy (by SD)		0.008 (0.044)
Trust Prime Minister (by SD)		0.146 (0.034)***
R^2	0.037	0.067
Adj. R^2	0.030	0.054
Num. obs.	1251	1238
RMSE	1.127	1.113

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

E Analyses on Pretreatment Effects

E.1 University education

Table E.1: The effect of household analogy treatments on opposition to government bond issuance, moderated by university education (OLS regression table)

	Baseline	Full
(Intercept)	2.710 (0.117)***	2.807 (0.150)***
Bankruptcy treatment	0.354 (0.173)*	0.325 (0.173)†
Bankruptcy + household analogy	0.111 (0.161)	0.040 (0.156)
Assets treatment	−0.081 (0.161)	−0.077 (0.158)
Assets + household analogy	0.023 (0.156)	−0.007 (0.157)
Gender (male)		−0.338 (0.065)***
Age (by SD)		0.101 (0.034)**
Age (squared)		0.005 (0.025)
Education (junior college)		0.088 (0.100)
Education (university)	0.001 (0.149)	0.044 (0.159)
Bankruptcy * university	−0.320 (0.218)	−0.238 (0.216)
Bankruptcy + household * university	−0.004 (0.211)	0.074 (0.207)
Assets * university	0.085 (0.209)	0.110 (0.205)
Assets + household * university	0.042 (0.201)	0.094 (0.202)
Conservative ideology (by SD)		−0.086 (0.035)*
Evaluation of economy (by SD)		0.016 (0.044)
Trust Prime Minister (by SD)		0.142 (0.034)***
R^2	0.008	0.061
Adj. R^2	0.000	0.049
Num. obs.	1247	1238
RMSE	1.144	1.116

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{\dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

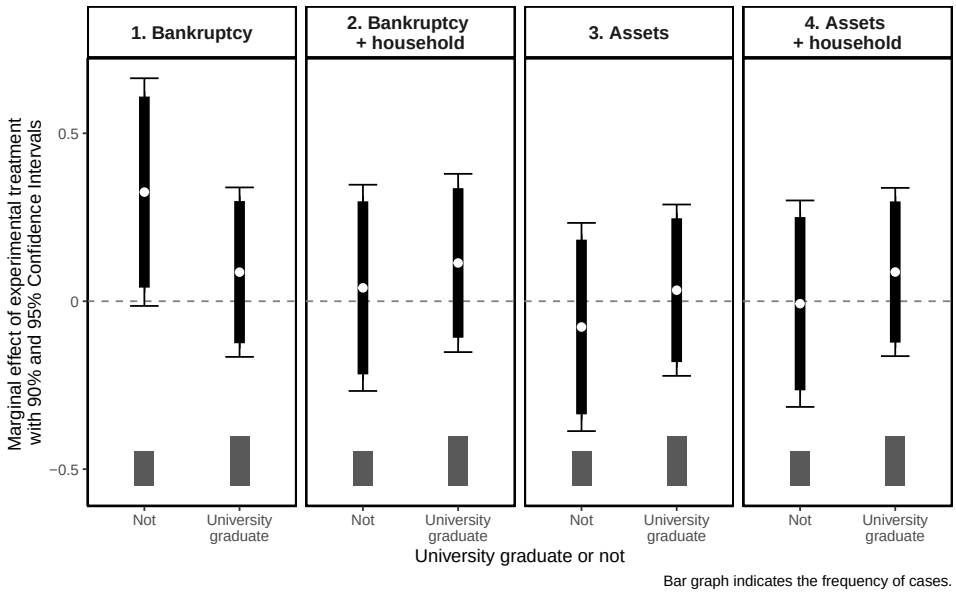

Figure E.1: Compared to university graduates, university non-graduates are slightly more responsive to standalone bankruptcy treatments, but less or not responsive to assets treatments and explicit reference to household

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

E.2 Political news exposure

Table E.2: The effect of household analogy treatments on opposition to government bond issuance, moderated by political news exposure (OLS regression table)

	Baseline	Full
(Intercept)	2.810 (0.157)***	2.912 (0.198)***
Bankruptcy treatment	0.124 (0.237)	0.127 (0.245)
Bankruptcy + household analogy	0.283 (0.223)	0.230 (0.239)
Assets treatment	−0.216 (0.250)	−0.199 (0.252)
Assets + household analogy	0.077 (0.217)	0.141 (0.229)
Political news exposure: 2-3 days in a week	−0.060 (0.238)	−0.102 (0.242)
Political news exposure: 4-5 days in a week	−0.091 (0.271)	−0.174 (0.280)
Political news exposure: Almost everyday	−0.140 (0.187)	−0.144 (0.197)
Bankruptcy * 2-3 days	0.066 (0.340)	0.157 (0.337)
Bankruptcy * 4-5 days	−0.125 (0.371)	−0.005 (0.379)
Bankruptcy * everyday	0.071 (0.284)	0.052 (0.289)
Bankruptcy + household * 2-3 days	−0.229 (0.324)	−0.148 (0.329)
Bankruptcy + household * 4-5 days	−0.105 (0.367)	0.019 (0.382)
Bankruptcy + household * everyday	−0.254 (0.271)	−0.241 (0.280)
Assets * 2-3 days	−0.002 (0.344)	0.077 (0.341)
Assets * 4-5 days	0.136 (0.385)	0.185 (0.389)
Assets * everyday	0.336 (0.289)	0.317 (0.288)
Assets + household * 2-3 days	0.155 (0.324)	0.139 (0.332)
Assets + household * 4-5 days	−0.161 (0.353)	−0.289 (0.366)
Assets + household * everyday	−0.106 (0.258)	−0.169 (0.266)
Gender (male)		−0.340 (0.066)***
Age (by SD)		0.118 (0.036)**
Age (squared)		0.010 (0.026)
Education (junior college)		0.087 (0.102)
Education (university)		0.077 (0.084)
Conservative ideology (by SD)		−0.086 (0.035)*
Evaluation of economy (by SD)		0.005 (0.044)
Trust Prime Minister (by SD)		0.145 (0.035)***
R^2	0.014	0.069
Adj. R^2	−0.002	0.048
Num. obs.	1243	1230
RMSE	1.146	1.117

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

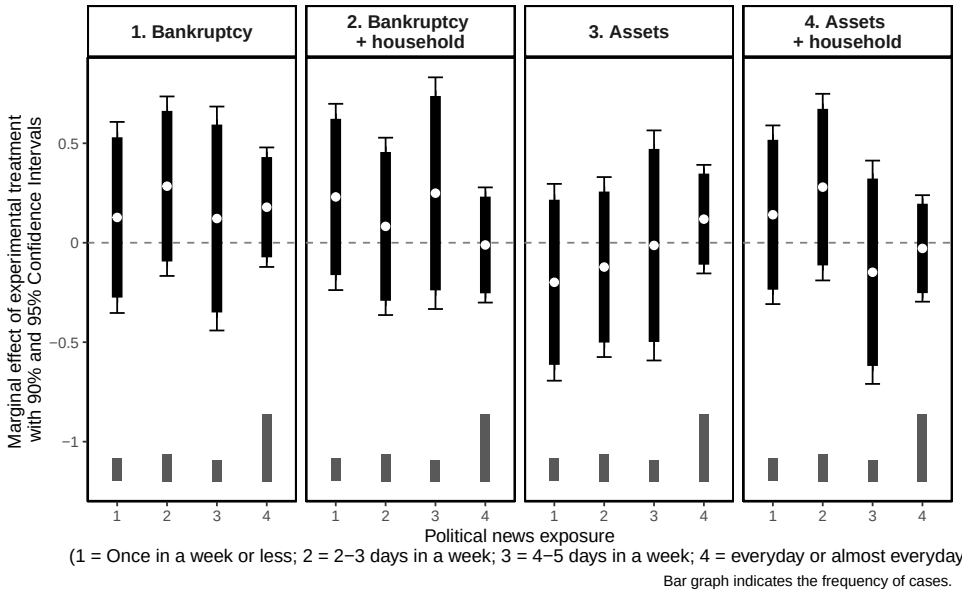

Figure E.2: Less frequent exposure to political news does not make respondents more responsive to household analogy treatments

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

F Analyses on Reverse Causation

Table F.1: Priming about the bound issuance preference does not make people endorse household analogy more (regardless of their preference on bond issuance) but priming about the household analogy makes people oppose more to government bond issuance (only for those who endorse analogy) (OLS regression table, baseline models)

	Analogy Useful	Analogy Useful	Oppose Bonds	Oppose Bonds
(Intercept)	2.521 (0.090)***	2.733 (0.441)***	2.721 (0.072)***	2.208 (0.248)***
Bond issuance asked first	0.152 (0.123)	−0.195 (0.586)		
Somewhat oppose bonds		−0.085 (0.475)		
Neither support nor oppose bonds		−0.172 (0.470)		
Somewhat support bonds		−0.256 (0.471)		
Support bonds		−0.642 (0.526)		
Bonds first * Somewhat oppose		0.406 (0.632)		
Bonds first * Neither		0.113 (0.631)		
Bonds first * Somewhat support		0.411 (0.625)		
Bonds first * Support		0.715 (0.707)		
Analogy usefulness asked first			0.162 (0.105)	1.092 (0.554)*
Analogy rather useful				0.760 (0.283)**
Analogy neither				0.715 (0.342)*
Analogy rather not useful				0.542 (0.274)*
Analogy not useful				0.318 (0.298)
Analogy first * Rather useful				−1.029 (0.584)†
Analogy first * Neither				−1.515 (0.660)*
Analogy first * Rather not useful				−0.893 (0.580)
Analogy first * Not useful				−0.904 (0.599)
R^2	0.003	0.016	0.005	0.041
Adj. R^2	0.001	−0.003	0.003	0.022
Num. obs.	464	464	464	464
RMSE	1.321	1.324	1.133	1.122

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Table F.2: Priming about the bound issuance preference does not make people endorse household analogy more (regardless of their preference on bond issuance) but priming about the household analogy makes people oppose more to government bond issuance (only for those who endorse analogy) (OLS regression table, full models)

	Analogy Useful	Analogy Useful	Oppose Bonds	Oppose Bonds
(Intercept)	2.624 (0.225)***	2.810 (0.486)***	2.787 (0.171)***	2.410 (0.299)***
Bond issuance asked first	0.143 (0.124)	−0.056 (0.603)		
Somewhat oppose bonds		−0.061 (0.475)		
Neither support nor oppose bonds		−0.153 (0.471)		
Somewhat support bonds		−0.225 (0.469)		
Support bonds		−0.608 (0.528)		
Bonds first * Somewhat oppose		0.244 (0.649)		
Bonds first * Neither		−0.055 (0.650)		
Bonds first * Somewhat support		0.265 (0.640)		
Bonds first * Support		0.562 (0.723)		
Analogy usefulness asked first			0.186 (0.103)†	1.058 (0.537)*
Analogy rather useful				0.639 (0.301)*
Analogy neither				0.604 (0.360)†
Analogy rather not useful				0.438 (0.295)
Analogy not useful				0.260 (0.309)
Analogy first * Rather useful				−0.938 (0.570)
Analogy first * Neither				−1.444 (0.641)*
Analogy first * Rather not useful				−0.870 (0.564)
Analogy first * Not useful				−0.831 (0.583)
Gender (male)	0.006 (0.125)	0.030 (0.128)	−0.288 (0.104)**	−0.266 (0.107)*
Age (by SD)	−0.037 (0.063)	−0.038 (0.063)	0.076 (0.054)	0.066 (0.054)
Age (squared)	0.064 (0.042)	0.059 (0.043)	0.057 (0.039)	0.048 (0.040)
Education (junior college)	−0.157 (0.207)	−0.138 (0.211)	−0.065 (0.173)	−0.059 (0.174)
Education (university)	−0.175 (0.177)	−0.175 (0.178)	0.000 (0.146)	−0.019 (0.146)
Conservative ideology (by SD)	−0.027 (0.063)	−0.013 (0.065)	−0.103 (0.059)†	−0.105 (0.058)†
Evaluation of economy (by SD)	−0.019 (0.076)	−0.026 (0.079)	0.015 (0.068)	−0.009 (0.068)
Trust Prime Minister (by SD)	0.044 (0.063)	0.026 (0.065)	0.104 (0.056)†	0.094 (0.056)†
R^2	0.012	0.024	0.054	0.082
Adj. R^2	−0.007	−0.013	0.036	0.046
Num. obs.	460	460	460	460
RMSE	1.328	1.332	1.113	1.106

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{dagger}p < 0.1$.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

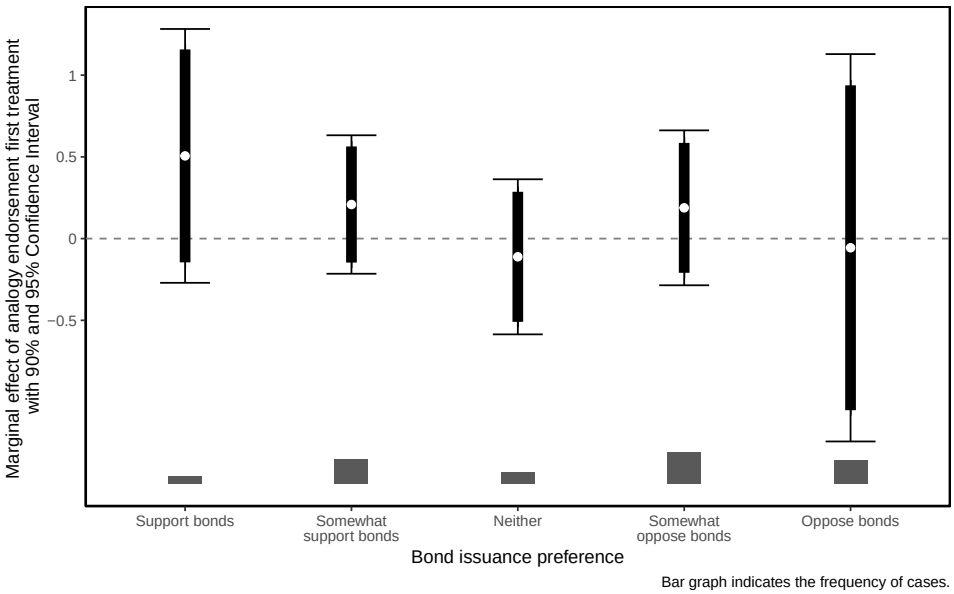

Figure F.1: Even when they strongly oppose the issuance of government bonds, priming about bond issuance preference does not make respondents endorse household analogy more

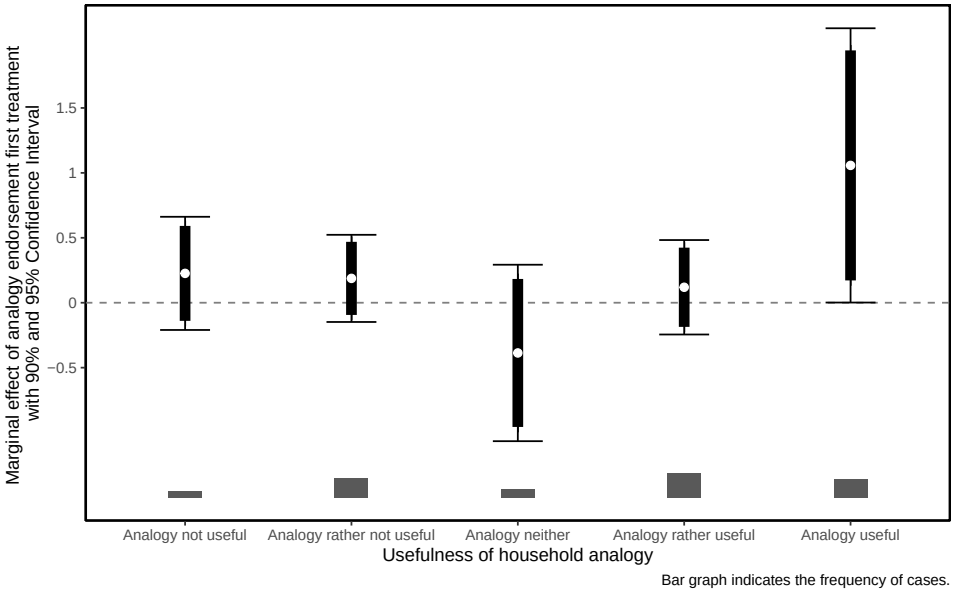

Figure F.2: When they think the analogy is useful, priming about analogy makes respondents oppose more to the issuance of government bonds

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

G Pre-analysis Plan

Study Information

Hypotheses

Hypothesis 1: The emphasis on the possibility of bankruptcy increases the opposition to issuing national bonds.

Hypothesis 2: The emphasis on the ample government assets decreases the opposition to issuing national bonds.

Hypothesis 3: The use of household analogy strengthens the persuasiveness of bankruptcy and government assets primes, respectively.

Design Plan

Study type

Experiment - A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials.

Blinding

For studies that involve human subjects, they will not know the treatment group to which they have been assigned.

Is there any additional blinding in this study?

No response

Study design

We show respondents descriptions of the government bond issuance and then ask their opinion on issuing government bonds. There are five different versions of the description, each of which the respondents are randomly assigned. First, we show the general information on government bond issuance:

Generally speaking, governments issue bonds when they spend more than tax revenue. (政府は一般的に、税による収入以上にお金を使いたい場合、その不足を補うために国債を発行します。)

Then, we add each of the following texts to the general information for treatment groups:[10]

1. According to some notions, if the governments continue to issue bonds, they will become unable to pay debts and eventually go bankrupt. (ここで、税収よりも多く支出するために国債を発行し続けると、最終的に返済できなくなり財政破綻してしまう、という考え方があります。)

[10]The English translations in the pre-registration were tentative. In the manuscript, we revised translations so that they better match the nuances of the original Japanese texts.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

2. According to some notions, issuing bonds is the same as a household borrowing money. Therefore, if the governments continue to issue bonds,[11] they will become unable to pay debts and eventually go bankrupt. (ここで、家計でいうと国債は借金と同じなので、収入よりも多く支出するためにお金を借り続けると、最終的に返済できなくなり破産してしまう、という考え方があります。)

3. According to some notions, because governments have various other assets (e.g., savings, stocks and lands) than tax revenue, it is not problematic to repay bonds issued to spend more than tax revenue. (ここで、政府には税収とは別に様々な資産（預金・株券・土地など）があるので、税収よりも多く支出するために国債を発行し続けても、返済するのに大きく困ることはない、という考え方があります。)

4. According to some notions, issuing bonds is the same as a household borrowing money. However, because governments have various other assets (e.g., savings, stocks and lands) than tax revenue, it is not problematic to repay bonds issued to spend more than tax revenue. (ここで、家計でいうと国債は借金と同じですが、政府には収入とは別に様々な資産（預金・株券・土地など）があるので、収入よりも多く支出するためにお金を借り続けても、返済するのに大きく困ることはない、という考え方があります。)

After showing these descriptions, we ask the respondents about their preference on issuing government bonds:

To which is your opinion on government bond issuance closer, A or B?

> A: The government should actively issue bonds to provide better public services.(国民により良いサービスを提供するためには、政府は積極的に国債を発行するべきだ。)
>
> B: The government should avoid issuing bonds as long as possible, even if it leads to a reduction in public services.(国民へのサービスが制限されるとしても、政府は国債の発行をできるだけ控えるべきだ。)

- Closer to A. (Aに近い)
- Somewhat closer to A. (どちらかと言えばAに近い)
- Neither A nor B. (どちらでもない)
- Somewhat closer to B. (どちらかと言えばBに近い)
- Closer to B. (Bに近い)

Note: The order of A and B is randomized.

Sampling Plan

Existing Data

Registration prior to the creation of data

[11] Here, the translation was inappropriate in the pre-registration. The original Japanese wording says 'borrow money', not 'issue bonds'.

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Explanation of existing data

No response

Data collection procedures

We recruit 18 or above respondents via Lancers, an online cloud sourcing service. According to Miura & Kobayashi (2016), registrants of cloud sourcing services are less likely to commit satisficing, i.e., minimizing efforts in responding (Krosnick, 1991), than respondents from other forms of online surveys. Moreover, they are more diverse than student participants, which have been used so far in survey experiments in terms of demographic characteristics, political preferences, and social status. Thus, the sample is more helpful in investigating preferences on government bond issuance. Nevertheless, the registrants of cloud sourcing services are not randomly sampled from the population of Japan, so we must be aware that inference on the treatment effects cannot be generalized.

Sample size

We assign about 250 people to each treatment group.

Sample size rationale

No response

Stopping rule

No response

Variables

Manipulated variables

No response

Measured variables

Find details in the attached file.

Analysis Plan

Statistical models

We implement analyses by t-test and multivariate OLS regressions. Here are independent variables (IV), dependent variables (DV), and control variables (CV) in each model.

t-test: IV=treatment groups; DV=opinion on bond issuance (5-point scale)

OLS: IV = treatment groups; DV=opinion on bond issuance (5-point scale); CV=sex, age, income, education, employment, party support, ideology, cabinet support, trust for Ministry of Finance

Transformations

No response

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

Inference criteria

No response

Data exclusion

No response

Missing data

No response

Exploratory analysis

It is supposed that endorsement of household analogy negatively affects public attitudes toward government bond issuance. According to the original study by Barnes & Hicks (2021), however, there is a possibility of reverse causality that the attitudes themselves affect the analogy endorsement. In order to take into account this causation, we add a question of analogy endorsement for the control group and then randomly adjust the order of the bond issuance question and the analogy endorsement question. If this reverse causality exists, respondents who answer the bond issuance question first are more likely to endorse the household analogy than those who do not. Also, this effect is expected to be stronger among those who have more hostile attitudes toward bond issuance. To sum up, we have the following additional hypotheses:

> Hypothesis A1: Answering the bond issuance question first increases analogy endorsement but has no effect on attitudes toward bond issuance.
>
> Hypothesis A2: When respondents have negative attitudes toward bond issuance, they are more likely to adjust their analogy endorsement than otherwise.

The analogy endorsement question asks:

People have different views about how we should think about government budget balance, that is, what the government spends compared to its income from taxes. To which is your opinion on government bond issuance closer, A or B? (政府の予算、つまり、税収に対して何をどれくらい支出するかについては、様々な考え方があります。政府の予算の考え方について、あなたのお考えは以下のA・Bのどちらに近いでしょうか？)

> A: The way we think about household budgets shows us how we should think about government budgets.(家庭の予算について考えることは、政府の予算を考える時にも役に立つ。)
>
> B: The way we think about household budgets is irrelevant for how we should think about government budgets.(家庭の予算について考えることと、政府の予算を考えることは別のことだ。)

As in the main question, respondents choose one of the following choices:

- Closer to A. (Aに近い)

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0

- Somewhat closer to A. (どちらかと言えばAに近い)
- Neither A nor B. (どちらでもない)
- Somewhat closer to B. (どちらかと言えばBに近い)
- Closer to B. (Bに近い)

Other

Other

Barnes, L., & Hicks, T. (2021). Are Policy Analogies Persuasive? The Household Budget Analogy and Public Support for Austerity. British Journal of Political Science, 1-19. doi:10.1017/s0007123421000119

https://doi.org/10.33774/apsa-2024-6r28m **ORCID:** https://orcid.org/0000-0003-2701-742X Content not peer-reviewed by APSA. **License:** CC BY 4.0