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Gender differences in preferences for income tax refunds

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Abstract

The Tax Cuts and Jobs Act of 2017 (TCJA) provides a natural setting to examine taxpayer preferences for income tax refunds. An examination of the individual income tax formula reveals that an income tax refund is simply a function of the total tax owed (net of any tax credits) compared to the total tax already paid through withholdings and estimated tax payments. However, many taxpayers continue to focus on the size of their income tax refund, rather than the holistic picture of their total tax liability compared to their tax withholdings. Recent results examining the propensity for mental tax accounting and gender, and the economics literature focusing on female risk aversion, suggest that gender may play an important role in attitudes towards and preferences for certain tax behaviors. Thus, we investigate whether gender is a significant factor in preferences for income tax refunds. We survey U.S. taxpayers and find a significant gender difference related to receiving money as higher wages in a monthly paycheck or as a tax refund at the end of the year. Our results compliment prior studies in economics that document a consistent and significant relation between gender and risk-taking. Overall, we provide preliminary evidence that women may view income tax withholding as a low-risk investment and as a way to save.

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1. Introduction

The Tax Cuts and Jobs Act of 2017 (TCJA) modified, introduced, and eliminated many income tax laws, affecting the taxation of all individuals and entities in the U.S. As a result, the Internal Revenue Service (IRS) revised the individual income tax withholding tables to incorporate the effects of these tax law changes and aid taxpayers in having the correct amount of income tax withheld from their paychecks. As employers began using these updated withholding tables, the amount of federal income tax that employers withheld from each employee's paycheck automatically changed without any action from the employee, and often, without the employee's knowledge. Although taxpayers always have the option to update their tax withholding information by filing a new Form W-4 whenever their tax circumstances change, few individuals do so, and the majority of taxpayers were unaware of the changes to their withholdings.¹

The change to withholdings, coupled with other significant changes to individual income tax laws under the TCJA, resulted in "surprises" when taxpayers began filing their 2018 tax returns. Taxpayers realized that they would not be getting the same tax refund as they had in previous years, and in some cases, taxpayers that were expecting an income tax refund instead owed additional taxes with their tax return. Taxpayers were furious and blamed the Trump Administration for these reduced refunds, fueling hashtags across social media such as #neverowedbefore, #taxstory, #GOPTaxScam, and #GOPTaxScamStories.² Taxpayer frustration and anger were so significant that the tax preparation company H&R Block updated its annual training, stating "...this year, agents also underwent "empathy training," which included a "refund surprise training module" to coach their responses to clients shocked or upset by a lower tax refund or a surprise tax bill..." (Pesce 2019).

An examination of the individual income tax formula reveals that an income tax refund is simply a function of the total tax owed (net of any tax credits) compared to the total tax already paid through withholdings and estimated tax payments. Thus, even if an individual taxpayer has the same overall tax liability year-to-year, the amount of their refund could vary greatly solely due to tax withholdings. Generally, receiving little to no refund or owing little to no additional tax upon filing indicates that the taxpayer has properly withheld income tax and had access to all after-tax funds throughout the year. However, taxpayers continue to focus on the size of their income tax refund, rather than the holistic picture of their total tax liability compared to their tax withholdings. As Richard Thaler, the 2017 recipient of the Nobel Prize in economic studies, noted in a 2019 NPR interview "In a world of rational economic actors, [lowering withholding] would have made everybody happy, since they would be getting the money they would have to wait all year for, in each paycheck. But we don't live in that world, and people like refunds" (Walsh 2019).

Perhaps prospect theory and mental accounting offer an explanation. Prospect theory (Kahneman and Tversky 1979) assumes that individuals use reference points, such as an expectation, to evaluate decision outcomes. The reference point selected divides the value function into gain and

¹ A recent survey finds that about 50% of taxpayers admit they are unfamiliar with Form W-4 or have never heard of it (CPA Practice Advisor 2020).

² See Appendix A for examples from social media of taxpayer frustration resulting from tax refunds differing from expectations.

loss domains. Therefore, whether the outcome is perceived as a gain or a loss is highly subjective, and is based on the reference point selected. Taxpayers that expect a certain outcome (i.e. a tax refund) likely use the amount of their expected refund (i.e. their prior year tax refund) as their reference point, and the same refund as last year would be considered a neutral or normal outcome. A slightly larger refund than expected would represent a small gain, and a smaller refund, or even owing additional tax, would feel like a large loss. See Figure 1 for a reproduction of the value function in prospect theory.

Figure 1
A Hypothetical Value Function

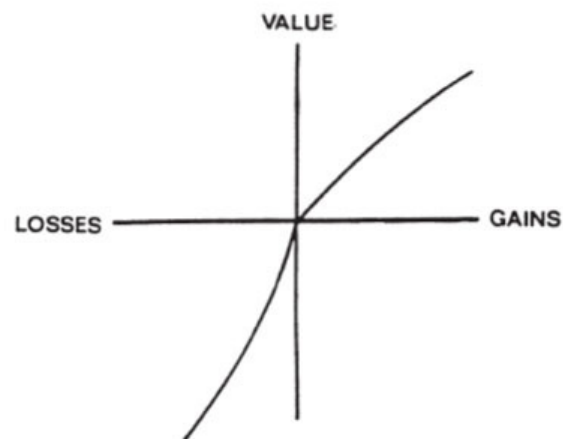


Figure 1 represents a Hypothetical Value Function, adapted from Kahneman and Tversky (1984). Under prospect theory, the Value Function is concave for gains (to the right of the reference point) and convex for losses (to the left of the reference point). The greatest effect on value of an incremental gain or loss occurs closest to the reference point (in the middle).

Mental accounting assumes that people perceive outcomes in terms of the prospect theory value function. Thaler (1999) defines mental accounting as "...the set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities" (p. 183). Mental accounting helps us to understand how individuals evaluate and experience outcomes, how individuals assign activities to specific accounts and constrain expenditure accounts in creating budgets, and how and when individuals evaluate (or balance) these accounts. Mental accounting violates the economic principle of fungibility in traditional economics, in that money in one mental account is not the same as money in another account.

Prior research on mental accounting for taxes has focused on tax refund size, frequency, and use, and tax compliance. For example, Chambers and Spencer (2008) examine tax refund frequency and use and find that monthly tax refunds are more likely to be consumed, while annual refunds are more likely to be saved or used to pay down debt. As part of a recent study, Muehlbacher and Kirchler (2019) conduct an explorative survey and find that the extent of engaging in mental accounting is positively correlated with several individual characteristics including being female, conscientiousness, and financial literacy, and is negatively related to education and non-planning impulsivity.

Prior studies in economics also suggest that gender is a significant factor in explaining investment behavior (Yakoboski and Silverman 1994; Lewellen, Lease, and Schlarbaum 1977). Studies have found that women are generally more risk averse than men (Bajtelsmit and Bernasek 1996), have increasing relative risk aversion (Bajtelsmit, Bernasek, and Jianakoplos 1996), and invest their pensions more conservatively than men (Bajtelsmit and VanDerhei 1996; Hinz, McCarthy, and Turner 1996). Finally, Zinkhan and Karande (1991) show that these gender differences exist cross-culturally.

Together, the recent results examining the propensity for mental tax accounting and gender, and the economics literature focusing on female risk aversion, suggest that gender may play an important role in attitudes towards and preferences for certain tax behaviors. Thus, we investigate whether gender is a significant factor in preferences for income tax refunds. We survey U.S. taxpayers about their preferences on the timing of receiving income and paying expenses to determine which characteristics drive taxpayer focus on income tax refunds. While we find no gender differences related to the timing of receiving money in general, we do find a significant gender difference related to receiving money specifically in the form of higher wages in a monthly paycheck or as a tax refund at the end of the year. This is perhaps puzzling as, on the surface, the thought process behind the preferences appears the same; either receive money as soon as it is available each month or wait and receive a larger amount later. However, in our sample we consistently find that women prefer to receive income tax refunds (i.e. a larger lump sum later) more than men. Overall, we provide preliminary evidence that some women may view income tax withholding as a low-risk investment and as a way to save.

Our results compliment prior studies in economics that document a consistent and significant relation between gender and risk-taking. Similar to prior studies (e.g. Grinstein-Weiss et al., 2015), we also find that taxpayers use their tax refunds for three primary purposes; saving, spending, and paying off debt. We also find significant gender differences in the use of taxpayer refunds as women are more likely than men to use their tax refund to pay off debt. This further supports the idea that some taxpayers can view annual tax refunds as a low-risk savings vehicle.

Finally, we provide evidence suggesting that taxpayers do not think of income tax refunds as household income and do not think of income tax payments as household expenses. We conclude that taxpayers are therefore either not mentally segregating income tax withholdings from their wages (similar to Muehlbacher, Hartl, and Kirchler 2017), or that taxpayers are not viewing tax withholdings as an expense, but instead potentially viewing them as savings. We leave this puzzle to future studies.

2. Data

We ran two studies using *Amazon Mechanical Turk* (MTurk), including a main study and a follow-up study. The main study includes one hundred and twenty-nine participants, surveyed in 2019. We do not exclude any participants from our study because all participants reported that they had previously filed income tax returns. Specifically, 70% of participants filed tax returns more than 10 times, 22% filed tax returns 5-10 times, and 7% filed tax returns less than 5 times. Demographic information for participant income, age, education, and political party affiliation is summarized in Table I. Participants in the main study responded to questions related to their preferences on various monetary transactions. For example, would they prefer to receive \$100

each month for a year, totaling \$1,200 after one year, or receive \$1,200 at the end of 12 months. Similarly, would they prefer to pay \$100 a month for a year or pay \$1,200 at the end of the year. In addition, we included several questions related to making income tax payments (survey instrument available upon request).

Table I

Participant demographics for the main study, including income, age, education, and political party affiliation.³

		Total Sample N=129 Frequency (Percent)	Male N=72 Frequency (Percent)	Female N=57 Frequency (Percent)
Income	\$0 - \$50,000	66 (51.16)	39 (54.17)	27 (47.37)
	\$50,001 - \$100,000	53 (41.09)	26 (36.11)	27 (47.37)
	\$100,001 - \$150,000	7 (5.43)	5 (5.56)	3 (5.26)
	\$150,001 - \$200,000	3 (2.33)	3 (4.17)	0 (0.00)
Age	18 - 29	19 (14.73)	11 (15.28)	8 (14.04)
	30 - 49	96 (74.42)	55 (76.39)	41 (71.93)
	50 - 64	12 (9.30)	6 (8.33)	6 (10.53)
	65 +	2 (1.55)	0 (0.00)	2 (3.51)
Education	High School	13 (10.08)	9 (12.50)	4 (7.02)
	Some college	36 (27.91)	24 (33.33)	12 (21.05)
	Undergraduate degree	59 (45.74)	27 (37.50)	32 (56.14)
	Graduate degree	18 (13.95)	11 (15.28)	7 (12.28)
	Beyond a Graduate degree	3 (2.33)	1 (1.39)	2 (3.51)
Political Party Affiliation	Democratic	69 (53.49)	31 (43.06)	38 (66.67)
	Republican	28 (21.71)	17 (23.61)	11 (19.30)
	Independent	29 (22.48)	21 (29.17)	8 (14.04)
	Libertarian	1 (0.78)	1 (1.39)	0 (0.00)
	Other	2 (1.55)	2 (2.78)	0 (0.00)

³ The survey participants differ (on average) from the U.S. population in the following ways: our survey participants are younger (in the U.S., 16.5% are 65 years and older), have lower income (in the U.S., median income is \$65,712), have higher educational attainment (in the U.S., 20.3% have a bachelors degree), and are more likely to have a Democratic political affiliation than the U.S. population (in 2019 when the survey was given, the percentage of Republicans and Democrats was approximately 30% each), (Source: United States Census Bureau and Gallup).

The follow-up study includes eighty-nine participants, surveyed in 2020, and focuses on the rationale behind income tax refund preferences, and taxpayer recognition of income tax refunds as income and income taxes as expenses. Specifically, we asked participants to explain why they preferred one withholding scenario in lieu of another (for example, having just the right amount of income tax withheld or over-withholding and receiving a refund), and to list different types of income and expenses in their household (survey instrument available upon request).

3. Results

3.1 Withholding and Refunds

Relying on mental accounting theory, we asked participants several questions about their preferences regarding the timing of receiving income and making payments, with the goal of being able to better understand taxpayer preferences for tax withholding and tax refunds. We asked participants four similar questions, and our results are consistent across all question formats. We find that a majority of taxpayers in our study report that they prefer to have exactly the correct amount of income tax withheld from their paycheck and are thus acting rationally according to economic fundamentals. For example, we asked:

Imagine you currently take home \$36,000 dollars per year after taxes. You also get a tax refund at the end of the year of \$1,200 making your total take home pay \$37,200. You can adjust your withholding so your take home pay is \$37,200 each year, but you will not get a refund. What do you prefer?

- a) To receive \$36,000 in after-tax pay and receive a tax refund of \$1,200
- b) To receive \$37,200 in after-tax pay (with no tax refund)

Overall, 64.34% of participants selected option b, representing more money in each paycheck and no income tax refund. However, a significantly higher percentage of men, 73.24%, indicated this was their preference compared to women. Women were close to evenly split on their preference; 52.63% indicated a preference for more money in each paycheck and no refund (option b) and 47.37% indicated a preference for slightly less in each paycheck with a refund at the end of the year (option a), ($X^2(1, N = 129) = 5.8323, p=.0157, t\text{-value} = 2.45, p=0.02$).

To further investigate how the individual taxpayer demographics are associated with refund status, we estimate the following logit model:

$$\begin{aligned} \text{Logit}(TR_i) = & B_0 + B_1\text{Gender} + B_2\text{Income}2 + B_3\text{Income}3 + B_4\text{Income}4 + B_5\text{Age}2 \\ & + B_6\text{Age}3 + B_7\text{Age}4 + B_8\text{Education}2 + B_9\text{Education}3 \\ & + B_{10}\text{Education}4 + B_{11}\text{Education}5 + B_{12}\text{Political}2 + B_{13}\text{Political}3 \\ & + B_{14}\text{Political}4 + B_{15}\text{Political}5 + e \end{aligned}$$

where TR_i represents the dependent variable in the model and is equal to 1 if the participant prefers to receive an income tax refund, and 0 otherwise. The independent variables are described as follows: *Gender* is equal to 1 if the participant is female, and 0 if male. *Income2* is equal to 1 if the participant's annual household income is between \$50,001 - \$100,000, *Income3* is equal to 1 if between \$100,001 - \$150,000, and *Income4* is equal to 1 if between \$150,001 - \$200,000 and 0 otherwise. *Age2* is equal to 1 if the participant is between 30-49, *Age3* is equal to

1 if between 50-64 and *Age4* is equal to 1 if 65 or above, and 0 otherwise. *Education2* is equal to 1 if the participant has some college, *Education3* is equal to 1 if an undergraduate degree, *Education4* is equal to 1 graduate degree, and *Education5* is equal to 1 if beyond a graduate degree, and 0 otherwise. *Political2* is equal to 1 if the participant is Republican, *Political3* is equal to 1 if the participant is Independent, *Political4* is equal to 1 if the participant is Libertarian, and *Political5* is equal to 1 if the participant is “other”, and 0 otherwise. The baseline result represents a male, with household income between 0 and \$50,000, age 18-29, with a high school degree and a Democratic party affiliation. We report the results in Table II. We find that females are significantly *more* likely to prefer an income tax refund ($p = 0.02$). The association between conservative savings mechanisms and gender is consistent with prior literature. We do not find any significant differences in withholding preferences related to income, age, education, or political party affiliation.⁴ However, we cannot rule out the possibility that one (or more) of these variables plays a role in refund preferences and leave that question to future studies.⁵

Table II

The results of a logistical regression using a dichotomous dependent variable (refund preference = 1 or 0) with the taxpayer demographic variables as independent variables.

Variable	Coefficient Estimate	Standard Error	Wald Chi-Square	P > ChiSq
Intercept	-0.34	0.79	0.19	0.67
Gender	0.94	0.42	5.10	0.02
Income2	-0.26	0.44	0.35	0.55
Income3	-0.26	0.93	0.08	0.78
Income4	-1.23	1.84	0.44	0.51
Age2	-0.45	0.56	0.65	0.42
Age3	-0.64	0.83	0.59	0.44
Age4	-2.00	1.98	1.02	0.31
Education2	0.52	0.72	0.51	0.48
Education3	-0.17	0.71	0.06	0.81
Education4	0.81	0.86	0.89	0.34
Education5	0.00	1.46	0.00	1.00
Political2	-0.75	0.54	1.95	0.16
Political3	-0.37	0.51	0.51	0.48
Political4	-133.90	0.00	0.00	1.00
Political5	-0.39	1.54	0.07	0.80

We find similar results when we phrase the question in terms of monthly take home pay (*Imagine you currently take home \$5,000 per month. Your tax withholding can be reduced so that you take home \$5,100 per month. However, if you reduce your tax withholding, you will not get the tax refund of \$1,200 that you got last year. What would you prefer?*), when we phrase the question in terms of income tax payments (*Imagine you currently pay taxes of \$11,520 per year*

⁴ We also investigate the effect of race/ethnicity on tax refund preferences in a third study using 199 MTurk participants, and find no significant differences.

⁵ We test for significant interactions between gender and the other independent variables: income, age, education, and political party affiliation. As we do not have specific predictions about the interactive effects, and we do not find any of the interactions significant, we do not include the results in our analysis.

but get a \$1,200 refund when you file in February of the following year. You could adjust your withholding to pay a total of \$10,320 taxes per year but then you will not get a refund. Which would you prefer?), and when we phrase the question in terms of a refund expectation (*Imagine that last year you received a \$1,200 tax refund at the end of the year. You also expected to receive a \$1,200 tax refund at the end of this year. However, this year you only received a \$600 tax refund. You found out that each month your paycheck was \$50 more than it should have been, but you hadn't noticed the extra \$50 each month. (a) I like this or (b) I don't like this*). In the first two questions, female taxpayers indicated significantly more often than males that they preferred to receive a tax refund, and in the last, females indicated they didn't like this significantly more often than males. We re-estimate our logit model, substituting the binary response from each question above as our dependent variable and find consistent results.

To aid in our interpretation of the results from the main study, in our follow-up study we asked participants to explain the rationale behind their responses. Table III provides examples of the responses provided by participants for their preferences related to income tax withholding and tax refunds. The participants seem to recognize that refunds act as savings by the government on their behalf. However, participants preferring to receive a tax refund explain their preference in terms of risk aversion; they prefer the government save for them as this process is easy, prevents them from being tempted to spend the extra money, and prevents them from owing money at the end of the year. Participants that prefer the extra money in their monthly paycheck explain their preference in terms of economics; they prefer to have access to/control over the money throughout the year, earn interest on the money, and some fear a one-time lump sum may be spent unwisely. These anecdotal responses suggest that generally, the preference for tax refunds is related to risk aversion, consistent with our expectations based on mental accounting and economics literature.

Table III

We asked participants: Imagine you currently take home \$36,000 dollars per year after taxes. You also get a tax refund at the end of the year of \$1,200 making your total take home pay \$37,200. You can adjust your withholding so your take home pay is \$37,200 each year, but you will not get a refund. What do you prefer?

- a) To receive \$36,000 in after-tax pay and receive a tax refund of \$1,200*
- b) To receive \$37,200 in after-tax pay (with no tax refund)*

Below is a sample of participant explanations for why they prefer option (a) or (b).

Example responses for why taxpayers preferred option (a).	It is safest. I always take the largest withholding just in case, as it ensures I won't have unexpected tax bill due. That happened to us one year...and we learned our lesson. Besides, I like the big tax refund once a year.
	I like getting refunds because it feels like "unexpected money" that I get at the beginning of the year.
	I think this option is better because I am likely to not spend that extra money.
	I like the thought of getting the refund so I can expect that money at the end of the year and use it for savings. Otherwise I would spend all I made and never be ahead.
	because it's like having a savings account that you don't have to make an effort to use.
	Overpaying in tax to get a refund is a great way to "save" and get it back.
	I would like to have a tax refund of 1200

Example responses for why taxpayers preferred option (b).	so i can make my own interest off my own money
	It would allow me to have more money available each month as opposed to waiting once per year to get it as a refund. This would be more convenient to me.
	Its my money, I need it to live and pay bills.
	I'm less likely to frivolously spend the \$1200 if I don't get it at once.
	I prefer to have access and control of my funds versus having to wait to receive some in form of a tax return.
	I would rather have more throughout the year. Large sums of money generally do not get spent wisely.
	I would rather have money spread out across the whole year rather than one random big payment that will likely get misused to some extent

3.2 Refunds and Savings

Given our empirical findings that women in our sample generally prefer to receive a refund and the anecdotal responses that suggest refunds are a way to save money, we next investigate who typically receives a refund and whether they view refunds as a way to save. Perhaps, not surprisingly, when we asked taxpayers about their usual tax refund status (*When I file my taxes I usually: (a) Receive a refund, (b) Owe taxes and pay when I file, (c) Am even or very close to even (have to pay just a little or receive just a little)*), 59.65% of women report they usually receive a refund - a significantly higher percentage than men, 36.62%, ($X^2 (1, N = 129) = 6.7411, p=.0344, t \text{ value} = -2.65, p<0.01$).

Similar to prior surveys (Warren 2018), almost half of all women, 49.12%, say that they use their tax refund to pay off debt, a higher percentage than men (33.80%). Men are more likely to “buy yourself something nice” ($X^2 (5, N = 129) = 12.9368, p=.0240$). We find consistent results when asking about other saving preferences, such as saving for a vacation; 72.87% of all participants want someone else to save their vacation money for them. However, significantly more women, 84.21%, want someone else to save for them than men (63.38%) ($X^2 (1, N = 129) = 6.9053, p=.0086, t\text{-value} = -2.76, p<0.01$). This is consistent with our anecdotal survey responses indicating that taxpayers view refunds as a way to save; however, as we find preliminary evidence that women are more likely than men to prefer income tax refunds, this suggests these individuals appreciate someone else saving for them, reducing the risk of unintentionally spending the money themselves.

We also investigate whether taxpayers consider tax refunds a low-risk way to save by asking our survey participants “Do you ever worry that the government will not be able to pay a tax refund? (a) Yes, (b) No.” We find that only 17.05% of participants worry that the government will not be able to pay tax refunds. However, significantly more women, 24.56%, worry about this than men, 11.27%, possibly because they are the ones receiving the refunds ($X^2 (1, N = 129) = 3.9257, p=.0476, t \text{ value} = 1.93, p=0.06$). In addition, it is possible that although women consider government debt to be low risk, women still see the debt as riskier than men because women are more risk adverse.

3.3 How do Taxpayers Mentally Account for Taxes?

In our follow up survey, we asked participants to “think about all of your income and expenses for the year. In general terms, list all of the types of income you receive in your household. For example, wages from my job, interest on my bank account balance, and lottery winnings.” We also instructed them to “think about all of your income and expenses for the year. In general terms, list all of the types of expenses you have in your household. For example, groceries, rent or mortgage, and car payments.” For many taxpayers, income tax refunds are likely an important source of cash inflows during the year, and income taxes are likely to be a significant annual cash outflow.⁶ Yet due to the infrequency of receiving this cash inflow (i.e. receiving an income tax refund just once a year) and the automatic, passive method for collecting income taxes through paycheck withholdings, we predict that many taxpayers do not include income tax refunds or payments as a source of household income or as an item of expense.

Our results are consistent with our predictions. In our survey of taxpayers, not one included a description related to income tax refunds as a source of household income, and not one respondent included a description of an expense related to income taxes. Participants were often very specific with their list of income and expenses. For example, one response listing expenses included “Mortgage, groceries, insurance, utilities, student loan, home maintenance and improvement, car maintenance and fuel, clothes, toiletries, streaming services.” Even the three participants that included property taxes as a household expense did not include income taxes. Perhaps correctly, the participants do not view tax refunds as income, consistent with the thought that the tax refund is their money already, with someone else (i.e. the government) saving it for them. However, the expense side is more puzzling. It is unclear whether participants are not mentally segregating income tax withholding from their wages or whether taxpayers do not view tax withholding as an expense, and instead potentially view it as savings. We leave this puzzle to future studies.

4. Discussion and Conclusion

Our findings may be of interest to taxpayers, the government, regulators, and tax professionals. We provide preliminary evidence that women may view income tax withholdings as a low-risk investment and as a way to save. Although our survey finds that participants do not think of tax refunds as income, women appear to think of their tax refunds as a lump-sum they could lose (or would spend) if they had access to the money during the year. This compliments prior studies in economics that find women favor more conservative investments, by suggesting that women have a stronger preference for the government to hold their money during the year so that the intended use for the money – savings – is successful. As women have been shown to invest more conservatively (i.e. accept lower returns) than men in their retirement accounts, the same mechanism could apply here, as women may use income tax withholdings as a saving mechanism, and are willing to accept a lower return (0%). We caution that these results are preliminary and further research is needed to determine whether individual traits and specific financial situations also affect tax refund preference. For example, whether an individual’s salary is received through consistent payments, such as a paycheck, or through more volatile payments,

⁶ Based on the 2020 Update, The Tax Foundation calculates an “average” tax rate of 16% for the top 50% of taxpayers, and 4% for the bottom 50%, and an average rate of 14.6% (The Tax Foundation 2020).

such as commissions, and whether an individual has a large or small amount of debt. Furthermore, additional demographic and financial traits of the taxpayer, including whether they financially support others, and whether there are other taxpayers in their household, may influence preferences for an income tax refund.

The relation between mental accounting and income taxes is complex, as income taxes seem to violate or conflict with some of the assumptions of mental accounting. For example, when taxpayers have income taxes withheld from their paychecks they are incurring a cost. The federal government spends the tax revenue collected on items such as major health programs (Medicare and Medicaid), Social Security, national defense, interest on the national debt, various safety net programs, transportation, and infrastructure (Intuit Turbo Tax). In mental accounting, costs are generally not viewed as losses (Kahneman and Tversky 1984; Thaler 1985), but rather costs are associated with acquisition utility (the value of the good received relative to the price paid) and transaction utility (the difference between the amount paid and the “reference price” for the good, the “value”). This is more challenging when considering income tax costs. Many taxpayers are likely incurring tax costs that are providing minimal amounts of acquisition or transaction utility, if any. This is the nature of taxes, as the very definition of a tax implies that payments are not directly tied to any benefit received by the taxpayer.⁷ The fact that the consumer (taxpayer) incurring the cost of income taxes is generally not directly responsible for deciding exactly how to spend the tax revenue to maximize utility suggests that income tax costs may have a more complex relation with utility (acquisition and transaction) than other costs.

Income taxes may also be an unusual expense for mental accounting when considering when the (mental) account is opened and closed. For some taxpayers the account likely opens and closes annually, with the filing of the tax return resulting in the evaluation and closing of the account. However, for others, the account may open when they receive their first paycheck and notice federal income tax is withheld, reducing their take home pay. The account may stay open for the remainder of the taxpayer’s life, as the taxpayer continues to have income taxes withheld from their paycheck, and into retirement, when the taxpayer is eligible to receive funds or benefits paid for with tax revenue (for example, Social Security or Medicare). Other demographic factors and events that occur over the taxpayer’s life may contribute to the balance of their mental tax account, such as income tax refunds or additional payments due, children attending public schools, safety provided by national defense, or the benefits of a new bridge shortening commute time. In the case of income taxes, the account may have a negative balance for the taxpayer’s entire life. We believe future research is needed to fully explain how taxpayers mentally account for income taxes, and we leave these intriguing ideas to future studies.

⁷ The OECD Glossary of Tax Terms states “The OECD working definition of a tax is a compulsory unrequited payment to the government.” (OECD)

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Appendix A

Examples from social media of taxpayer frustration with tax refunds

Feb 10 #NeverOwedBefore I have not owed federal taxes in the last 20 years...this year I owe \$4000 !!! WTF ? My situation has not changed...how is this possible?

Feb 10 I too.....owe for the first time in my life! Just plain craziness #NeverOwedBefore

Feb 17, 2019 I am so mad! We always recieved tax refund money back...but this year we owe! What a scam! THE WORST PRESIDENT EVER!!!! #TaxScam #TaxScamStories #taxes #GOPTaxSCAMStories #GOPTaxScam

Feb 21, 2019 I got \$33 more in each bi-monthly paycheck! That's \$792 a year!! Of course, it cost me \$6,430 out of my annual refund. #TaxScamStories #TaxScam #GOPTaxSCAMStories

Mar 12, 2019 I have to do "more with less" because my taxes went way up thanks to the #GOPTaxScam ...Savings? HA! #GOPTaxSCAMStories

Mar 17, 2019 Wow, my 2018 tax bill is the highest I've ever had...ouch! The little bit of extra I got in my paycheck is now going right back to the IRS in a check for thousands. Time to update my W4 #taxes #GOPTaxScam #GOPTaxScamStories

Apr 5, 2019 How Accountants Break the Bad News About Tax Refunds: With Chocolate and Tissues - The Wall Street Journal #GOPTaxSCAMStories #MAGA

Apr 15, 2019 My joint tax return went from +2100 to -8100 in one year #GOPTaxSCAMStories

Apr 15, 2019 I would have been fine with no refund but instead we owed over \$5000 from your tax scam. Maybe if I got a private jet I'd get some tax breaks. #GOPTaxSCAMStories