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Axe the Tax:

Taxes are Disliked More than Equivalent Costs

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AXE THE TAX: TAXES ARE DISLIKED MORE THAN EQUIVALENT COSTS

Abstract

Tax collection is critical for the proper functioning of society. However, many people strongly dislike paying taxes. Although a distaste for paying taxes could be rational on economic grounds, the authors show that this attitude extends beyond simply disliking the costs incurred and affects behavior in counter-normative ways. They demonstrate the phenomenon of tax aversion: a desire to avoid taxes, *per se,* that exceeds the rational economic motivation to avoid a monetary cost. Across five experiments, the authors provide evidence that individuals have a stronger preference to avoid tax-related costs than equal-sized (or larger) monetary costs that are unrelated to taxes. They show that tax aversion affects consumer preferences in a variety of domains, including standard store purchases, financial investments, and job selection. Furthermore, they show that this tendency is most prevalent among those identifying with political parties that generally favor less taxation. Finally, they show that encouraging participants who identify with "anti-tax" parties to consider positive uses of their tax payments mitigates tax aversion. The paper concludes by discussing implications of our results for consumer behavior research and tax policies.

Keywords: tax, decision-making, consumer financial choice, behavioral economics, political affiliation

Most countries depend on taxes to provide essential services ranging from highways to healthcare. Although people benefit from these services, most dislike paying taxes. For instance, people often travel far across state lines to avoid paying taxes on clothing or gasoline, or visit duty-free shops in order to stockpile items they might not otherwise purchase. Objections to taxes can be attributed in part to the pain that people experience from paying any expense (Meyvis, Bennett, and Oppenheimer, 2010). In economics, the prevailing view is that any decrease in utility resulting from a tax is entirely due to the monetary cost it imposes (e.g., Ramsey, 1927).

However, people may dislike taxes above and beyond their financial costs for cultural, political, or even moral reasons (Hardisty, Johnson, and Weber, 2010; Kirchler, 2007). Taxes are often perceived as a loss of personal financial freedom, as expenditures without a fair return, or as funds wasted by inefficient politicians (Kirchler, 1998). Each day in the news, more headlines highlight Americans' hatred of taxes —a hatred that seems aimed at the very concept of taxes. One man was so enraged that he flew a plane into an Internal Revenue Service office building, leaving a suicide note detailing his grievances with the tax code (Brick, 2010). In 2009, US citizens began participating in nationally coordinated Tea ("Taxed Enough Already") Party demonstrations, protesting taxation. Recent polls (April, 2010) suggest that 18% of Americans identify with the Tea Party, a movement marked by hostility towards taxes (CNN, 2010). The movement has gained government representation, with (currently) 52 elected members of the United States House of Representatives part of the Tea Party Caucus. Among the population more broadly, about half of Republicans and close to one-third of Democrats say that they are angry about the amount of taxes they pay (CNN, 2010).

This negative attitude towards taxes can have serious implications for public finances by spurring tax evasion. This behavior is estimated to cost governments about 20% of revenues in developed countries, with the numbers much higher in developing countries (Orviska and Hudson, 2002). Despite its prevalence, illegal tax evasion is publicly denounced. In contrast, legal forms of tax avoidance are widely accepted (Kirchler, Maciejovsky, and Schneider, 2003). Kirchler et al. (2003) gave participants a free association task and found that illegal tax evasion was negatively associated with fraud, criminal activity, and punishment, whereas legal tax avoidance was considered favorably, and associated with cleverness and an intention to save money. Research has also uncovered differences in tax-related behaviors across the political spectrum. For example, those identifying with more conservative ideologies are more likely to evade taxes (Wahlund, 1992).

Previous psychological research on taxes has shown that heuristics, biases, and framing effects, which are known to impact decision making generally, also affect how individuals evaluate tax policies (e.g., Hardisty, et al., 2010; McCaffery and Baron, 2006; Reimers, 2009; for literature reviews see Hill, 2010; Kirchler, 2007; McCaffery and Slemrod, 2006). People have been shown to prefer tax policies that are labeled as “bonuses” rather than as “surcharges”, to prefer hidden rather than explicit taxes, and to vary their view of the appropriate level and distribution of a tax depending on whether it is presented in absolute monetary or percentage terms (McCaffery and Baron, 2004, 2006; Reimers, 2009). Furthermore, McCaffery and Baron (2006) demonstrated that the “tax” label carries special meaning and can alter people’s attitudes in ways that vary with the nature of the expense. More recently, Hardisty et al. (2010) showed that framing a charge on carbon emissions as a tax rather than an offset reduces its favorability among Republicans, but not Democrats.

In this paper, we document the phenomenon of tax aversion[1], by which we mean a dislike of taxes, *per se*, that goes above and beyond their associated financial costs. This work goes further than describing attitudes toward tax policy and examines how the presence of a tax can alter decisions and behavior disproportionately relative to an equivalent alternative cost. In Experiments 1 and 2, we demonstrate that people are more willing to incur a cost (spending time traveling or waiting in line) to avoid paying taxes than to avoid other (and larger) tax-unrelated costs. We also begin to quantify the relative impact of tax aversion on consumer behavior. Experiment 3 extends these findings to the domain of financial decision making to show that tax aversion can help explain the overconsumption of tax-exempt municipal bonds by those in low marginal tax brackets. Experiment 4 shows that tax aversion is most prevalent among consumers who identify with anti-tax political parties. Finally, Experiment 5 demonstrates that having members of anti-tax parties consider positive uses of their tax payments diminishes their tax aversion, such that their subsequent preferences are indistinguishable from those of pro-tax party members.

EXPERIMENT 1

Method

Participants. 238 participants were recruited from 3 populations: (i) users of Amazon.com's Mechanical Turk service (www.mturk.com)[2] (N = 131), (ii) passers-by at a shopping mall in the northeastern United States (N = 65), and (iii) Princeton University undergraduates (N = 42). Participants completed the experiment for payment or course credit. For this and all experiments reported in this paper, we limited respondents to US residents. Prior

to analysis, we discarded 43 participants from the online sample who reported either living outside of the US or having previously taken the survey, and 4 from the shopping mall who were visibly distracted. Thus, our final sample consisted of 191 participants (62% female) who were 18-63 years old (M = 29.89, SD = 11.87).

Materials and procedure. All three populations answered the central survey question followed by demographic questions. (i) Participants recruited through Amazon.com completed the survey online for a cash reward. (ii) Participants recruited from the shopping mall stopped at tables where various experiments were taking place. They were given a survey packet (which also contained unrelated questionnaires) and a seat to complete the survey for a cash reward. (iii) Princeton University undergraduates were recruited in a variety of locations on campus and followed a similar procedure to those at the shopping mall, except that some received course credit in lieu of cash.

Participants read and responded to the following hypothetical decision scenario:

You want to buy a new television and have a particular model in mind. Calling around, you find that only two stores, Bob's Electronics and Tom's Electronics, carry that model. Bob's Electronics is located very close, about a 5-minute drive, but offers no discounts on the television set. Tom's Electronics is located farther away, about a 30-minute drive, but offers the television set **[tax-free, which is equivalent to an 8% discount]/**(<u>with a 9% discount</u>). *Where do you go to make your purchase?*

□ *Bob's Electronics* □ *Tom's Electronics*

The experiment consisted of a between-subjects design with participants assigned to one of two conditions (8% tax-related discount vs. 9% tax-unrelated discount) in a non-biased, pseudo-random order (alternating or shuffled). The 8% value was chosen to resemble a plausible sales

tax rate in the US, and the 9% value was chosen to be larger while remaining a single-digit number. Participants assigned to the 8% tax-related discount condition saw the discount stated in brackets and bold above: "tax-free, which is equivalent to an 8% discount". Participants assigned to the 9% tax-unrelated discount condition instead saw the discount in parentheses and underlined above: "with a 9% discount"[3].

Results and Discussion

Although participants recruited online were somewhat less willing to travel to receive a discount regardless of condition, trends were consistent across the three populations surveyed. A binary logistic regression revealed no interaction between population and condition, either in the current experiment or in later experiments reported in this paper (all ps > .160). We therefore pool data across respondent populations throughout for simplicity.

Results supported our hypothesis that taxes receive special treatment. Participants were sensitive to the nature of the discount, and this reaction overpowered underlying economic factors. Significantly more participants preferred to travel 30 minutes to receive a discount when it was an 8% tax-related discount than when it was a 9% tax-unrelated discount (76% vs. 59%, χ^2 (1, N = 191) = 5.83, p = .016, ϕ = .18), despite the higher level of savings in the tax-unrelated condition. These results provide evidence not only that people dislike paying taxes, but also that they exhibit tax aversion, i.e., they are actually willing to make sacrifices to avoid taxes that they would not make for other, larger tax-unrelated costs.

EXPERIMENT 2

Experiment 1 showed that people are more willing to go out of their way to avoid a tax than a larger non-tax cost. One potential criticism is that, although the two televisions are described identically in both conditions, participants may have inferred that the one receiving a non-tax discount could be of inferior quality; for example, because there may be hidden flaws leading to the discount (e.g., Chernev and Carpenter, 2001; Lo, Lynch, and Staelin, 2007). The same reasoning would be less straightforward for a tax savings, as it is beyond the retailer's control.

In Experiment 2, we extend the central finding of tax aversion to a new context and compare purchasing behaviors when consumers are faced with one of two sales given different labels. Since the target product is described as being on sale in both conditions, participants should make similar inferences regarding its quality, allowing us to isolate the effect of contemplating a tax-related vs. non-tax savings. Additionally, Experiment 2 was designed to quantify consumers' willingness to trade the benefits of a sale with a cost (waiting in line) associated with the sale. Specifically, we measure how long people are willing to wait to avoid a tax-related vs. non-tax cost of equal value, as well as the complement: how much tax-related vs. non-tax savings people demand to wait in line for the same amount of time to make a purchase. If consumers are tax-averse, then they should be willing to wait longer for a tax-related sale than an equivalent tax-unrelated sale. Conversely, they should demand a higher discount to wait in line for a purchase when this discount is unrelated to taxes compared to when it is associated with taxes.

Method

Participants. 401 participants were recruited online through Amazon.com's Mechanical Turk service and took this survey as part of a larger questionnaire, which they completed in exchange for payment. Prior to analysis, we discarded data from 28 participants who failed to

complete the experiment, 2 who had previously completed the survey, 3 who were not US residents, 3 who were under 18, and 14 participants who spent less than 5 minutes completing the entire experiment (average completion time was 13.9 minutes). Thus, our final sample consisted of 351 participants (64% female) who were 18-78 years old (M = 35.18, SD = 12.56). In this and all future experiments reported in this paper, participants' median self-reported income category was $25,000–$50,000.

Materials and procedure. Participants saw two relevant pages of scenarios; on each page, a scenario was followed by a series of binary choice questions. These pages were interspersed within a larger set of 12 pages presented in random order, so the two relevant pages usually did not appear consecutively. The end of the questionnaire asked participants to report various demographic variables.

The experiment was divided into two parts (presented in random order), with each part presented on a separate page (as described above). The first part measured participants' willingness to wait in line for a given amount of savings. Specifically, participants read the following hypothetical decision scenario (the "waiting-time" titration question):

> *Imagine that you are walking through the mall looking for a particular jacket that you have seen advertised. You come across two closely located stores that carry it. The first store offers no discounts, but has no wait to purchase the coat. The second store is having a special [**"axe-the-tax" sale, with the store selling all items tax-free, equivalent to a 9% discount.**]/(<u>"customer rewards" sale, with the store selling all items at a 9% discount</u>). However, due to the popularity of the sale, there is a wait to purchase items there. How long would you wait in line to receive the discount?*

They then responded to a series of 12 binary titration choice questions that asked if they would be willing to wait X minutes to receive the 9% [**"axe-the-tax"**]/("customer rewards") savings, where X increased from 5 to 60 minutes, in 5 minute intervals.

The second part of the experiment measured the amount of savings required for participants to be willing to spend a given amount of time waiting in line. Specifically, participants read the following scenario (the "savings" titration question):

> *Imagine that you are walking through the mall looking for a particular jacket that you have seen advertised. You come across two closely located stores that carry it. The first store offers no discounts, but has no wait to purchase the coat. The second store is having a special [**"axe-the-tax" sale, with the store selling all items tax-free**]/("customer rewards" sale, with the store selling all items at a discount). However, due to the popularity of the sale, there is a 15 minute wait to purchase items there. How high would the [**tax**] savings have to be for you to wait 15 minutes in line?*

They then responded to a series of 8 binary titration choice questions that asked if they would be willing to wait 15 minutes to save X percent on their purchase, where X increased from 5 to 12 percent, in 1 percent increments. This range of values was chosen to make the size of the tax savings seem realistic (sales taxes in the US generally fall within the 5-12 percent range).

The experiment consisted of a between-subjects design with participants randomly assigned to one of two conditions (tax vs. non-tax). Participants in each condition completed both the waiting-time and savings titration questions. Those in the tax condition saw the sale as described in brackets and bold for each of the scenarios above (the "axe-the-tax" sale). Those in the non-tax condition instead saw the sale as described in parentheses and underlined above (the "customer rewards" sale).

Results and Discussion

Prior to analyzing the data, responses to the titration questions were examined for consistency. Participants indicating incompatible preferences (e.g., being willing to wait 30 minutes, but not 25 minutes, for the 9% discount; being willing to wait 15 minutes for a 6% discount, but not for a 7% discount) were marked as inconsistent and their data were removed from the analysis (but only for the titration set to which they provided inconsistent responses). In all, we removed data from 10 participants for each set of titration questions.

Figure 1 shows, for each set of titration questions, the proportion of participants who preferred waiting in line as a function of the titrated variable (discount size or waiting time). Across the full ranges of waiting times and discount sizes, participants in the tax condition were consistently more likely to prefer waiting in line than those in the non-tax condition.

Insert Figure 1 about here

Next, an average score was calculated for each participant and titration set to determine her minimum willingness to save or maximum willingness to wait, which equaled the total number of "yes" responses divided by the total number of titration questions asked. All subsequent analyses were based on these proportions, which we then translated back to wait times and savings amounts (when providing descriptive statistics) based on their corresponding meanings from the question choices. For example, someone who responded "yes" to 3 of the 12 waiting-time questions (i.e., indicating a willingness to wait 5, 10, or 15 minutes, but not 20 minutes or more, for the 9% discount) received a score of .25, which we translated into a willingness to wait of 15 minutes. To avoid making unwarranted assumptions about the distributional properties of participants' responses, and given that the titration method only

provides ranges on indifference points, we used a rank-based, non-parametric (Mann-Whitney U) approach to test the null hypothesis that preferences did not differ between conditions.

Consistent with our predictions, participants in the tax condition were willing to wait 25% longer (roughly equivalent to 32 minutes, on average) to receive the 9% discount than those in the non-tax condition (26 minutes, on average). The corresponding difference in "yes" responding was significant: .53 vs. .43, Mann-Whitney U = 3.11, p = .002. Similarly, analysis of the savings titration questions showed that participants in the non-tax condition demanded a higher savings amount (roughly equivalent to 7.2%, on average) to spend 15 minutes in line than those in the tax condition (6.7%, on average). The corresponding difference in "yes" responding was marginally significant: .72 vs. .79, Mann-Whitney U = 1.81, p = .070.

Results from Experiment 2 show that consumers are willing to wait longer for a tax-related discount than for a tax-unrelated discount of the same size. Similarly, they demand a lower savings amount to wait in line if this savings is derived from a tax-themed sale compared to a non-tax sale. Our first two experiments demonstrate tax aversion in the context of typical store purchases. However, taxes permeate a wide range of consumer purchase decisions that extend beyond tangible store items. Experiment 3 examines how tax aversion influences financial investment preferences; specifically, the decision to purchase a taxable versus tax-exempt bond.

EXPERIMENT 3

Existing empirical research in finance indicates that, contrary to normative investment models, a significant number of households in low marginal tax brackets hold tax-exempt municipal bonds

(Feenberg and Poterba, 1991). From a rational economic perspective, an investor faced with the choice of investing in either a taxable corporate bond or a tax-exempt municipal bond with identical credit quality and terms, other than yield, should choose the bond with the higher after-tax yield determined by her own marginal tax rate. This means that the benefits to investors from holding tax-exempt municipal bonds increases as their marginal tax brackets increase. As Feenberg and Poterba (p. 98) show, however, nearly one-fifth of tax-exempt municipal bond interest is received by households for whom these bonds appear to be sub-optimal investments given those households' (low) marginal tax rates. Feenberg and Poterba speculate that several potential factors could explain this behavior, including sluggishness of portfolio adjustments to changing tax brackets and a desire to avoid paying taxes, even at economic cost.

The present study uses an experimental paradigm to examine the latter possibility. We hypothesized that people are motivated to purchase tax-exempt bonds specifically to achieve tax savings, even when these bonds do not yield better after-tax returns. First, Experiment 3a uses a between-subjects design to compare willingness to invest money in a bond over a savings account when the bond is tax-exempt versus taxable. Then, Experiment 3b makes the trade-off explicit by having participants directly compare the two types of bonds.

Experiment 3a

Method

Participants. 126 participants were recruited online through Amazon.com's Mechanical Turk service and paid for their participation. Prior to analysis, we discarded data from 1 participant who had previously completed the survey, from 2 who were under 18, and from 6 who were not US residents. Our final sample consisted of 117 participants (59% female) who were 18-77 years old (M = 35.21, SD = 12.45).

Materials and procedure. Participants read and responded to an online decision scenario, in which they had to choose between investing in a bond and keeping their money in a bank account. The scenario read as follows:

> *Imagine that you have just inherited some money. You are trying to decide whether to put the money in your bank account or to invest in a [**municipal**]/(corporate) bond. Your bank account will pay you $100 per year in interest, with no risk attached. The bond will pay you [**$120**]/($160) per year in interest, but carries risk, and you cannot withdraw your initial investment for 10 years. You will pay tax on the interest [**from the bank account**] at 25%, [**but interest from the bond will be tax free**]/(in either case). Consequently, if you put money in the bank account you will pay $25 of tax and will keep $75 each year. If you put money in the bond, you will [**not pay tax**]/(pay $40 of tax) and will keep $120 each year. What would you do with your money?*
>
> □ *I would put my money in my bank account* □ *I would put my money in the bond*

Following the scenario, they responded to various demographic questions. The experiment consisted of a between-subjects design, with participants randomly assigned to one of two conditions (tax-exempt vs. taxable). Participants in the tax-exempt condition saw the bond described in brackets and bold: a tax-exempt municipal bond. Those in the taxable condition instead saw the bond described in parentheses and underlined above: a taxable corporate bond. Note that in *both* conditions, the savings account offered (riskless) after-tax returns of $75 per year, while the bond offered (risky) annual after-tax returns of $120. In other words, the tax-exempt and taxable bonds yielded equivalent after-tax returns, so the decision that participants faced was identical in economic terms.

Results and discussion

Consistent with our hypothesis, significantly more participants preferred to invest in the municipal bond that offered a $120 annual tax-free return than in the corporate bond that offered a $160 annual return requiring a $40 tax payment (82% vs. 18%, χ^2 (1, N = 117) = 48.03, p < .001, ϕ = .64). This preference held even though the two bonds provided identical after-tax returns, effectively ruling out any (standard) economic reason to prefer one more strongly than the other.

One limitation of the current design is that the tax-free bond is described as a municipal bond and tied to the government, while the taxable bond is tied to a corporation. Our participants may have preferred government-issued financial products over corporate ones, independently of their tax-exempt status. Furthermore, although both bonds are described as having "risk", the specific amount is never quantified, and participants may have inferred that the taxable bond carried greater risk. To address these concerns, Experiment 3b extends the previous study by using a direct comparison scenario that allows for an explicit statement of equal risk across the two products and makes no mention of corporations or the government.

Experiment 3b

Method

Participants. 52 participants were recruited online through Amazon.com's Mechanical Turk service and paid for their participation. Prior to analysis, we discarded data from 4 participants who had previously completed a similar survey, and 1 who was under 18. Our final sample consisted of 47 participants (38% female) who were 18-58 years old (M = 31.04, SD = 10.81).

Materials and procedure. All participants read and responded to the following decision scenario (before proceeding to demographic questions):

Imagine that you have just inherited some money that you are planning to invest. You are deciding between two different bond options. Both have the same risk and 10 year maturities. The first bond is expected to pay $400 per year, but you will also be taxed $100 on these earnings each year. The second bond's return is lower, $300 per year, but it will not be taxed. Which bond would you invest in?

□ *I would put my money in the first bond* □ *I would put my money in the second bond*

Results and Discussion

Despite eliminating mention of the bond issuer and explicitly equating risk in addition to the expected after-tax return, we found that a significant majority (77%) of our participants preferred investing in a tax-free bond over a taxable one (binomial test: $z = 3.50$, $p < .001$, with the null hypothesis that participants are equally likely to prefer either bond). This result is consistent with the one obtained in Experiment 3a. Together, these studies suggest that tax aversion could be at least partly responsible for certain counter-normative consumer financial investment choices that have been observed in the field, such as the suboptimal tendency of lower tax-bracket investors to purchase tax-exempt bonds over taxable bonds that provide superior after-tax yields (Feenberg and Poterba, 1991).

The experiments reported thus far have demonstrated an aversion to paying taxes among the US population overall. However, identifying groups of individuals who particularly dislike paying taxes could help marketers segment consumers in order to target tax-free sales directly at populations where such discounts would be most appreciated (and thus most effective).

EXPERIMENT 4

Since attitudes toward taxes often seem to go hand-in-hand with political views, the next experiment examines whether the tendency to exhibit tax aversion (as opposed to merely disliking taxes) varies with political affiliation. We hypothesized that individuals who identified with anti-tax parties were primarily responsible for the pattern of preferences documented in our previous experiments. Polls show that Republicans generally hold more negative views of taxes (American National Election Studies, 2004; CNN, 2010) and several studies have found that political affiliation correlates with attitudes towards taxes (Hardisty et al., 2010; Wahlund, 1992). Additionally, we sought to determine whether tax aversion extended to a different type of tax and to an alternative time cost.

Method

Participants. 213 participants were recruited online through Amazon.com's Mechanical Turk service. The responses of 17 participants were discarded prior to analysis, because they either lived outside of the US or were repeat survey-takers. After these eliminations, our sample consisted of 196 US residents (58% female) who were 18-67 years old (M = 33.47, SD = 11.42).

Materials and procedure. Participants completed the survey online for a cash reward. They read and responded to the following hypothetical decision scenario:

> *Imagine you have been working for an American company and your yearly salary is $50,000 (before taxes). One day, you are offered the chance to lead one of the company's two European branches, each of which is located in a different European country. Regardless of which country you choose to live in, your duties will be the same and your salary will be raised to $75,000. However, in Country A, your daily commute will be 30 minutes shorter each way. On the other hand, while most expenses are the same in both countries,* **[taxes are higher]**/(<u>food is more expensive</u>) *in Country A, and you would have*

to **[pay $4,000 more in taxes]/(**<u>spend $5,000 more on food</u>) *there, each year, than you would in Country B. The two countries are similar in every other respect. Which country would you choose to live in?*

□ *Country A* □ *Country B*

The experiment consisted of a between-subjects design with participants assigned to one of two conditions ($4,000 tax cost vs. $5,000 food cost) in alternating order. Participants assigned to the $4,000 tax cost condition saw the additional cost stated in brackets and in bold above, while those assigned to the $5,000 food cost condition instead saw the additional cost stated in parentheses and underlined.

The final page of the questionnaire asked participants to report demographic variables, including political affiliation, for which they selected one or more of the following options: Democrat, Republican, Independent, Libertarian, Communist, Green, Socialist, and Other/None.

Results and Discussion

Prior to analyzing the data, we grouped participants based on their political party affiliation. Specifically, we identified whether each political party is traditionally considered (relatively) pro- or anti-tax. We considered the Democrat, Communist, and Socialist parties to be pro-tax and the Republican and Libertarian parties to be anti-tax. The remaining categories (Independent, Green, and Other/None) were not grouped. These classifications were chosen prior to viewing the data and were based on the parties' platforms (e.g., the Republican Party platform states: "Republicans advocate lower taxes, reasonable regulation, and smaller, smarter government." – Republican National Committee, 2008). The participants in our sample divided themselves almost equally into the three categories: 38% aligned with pro-tax parties, 29% with anti-tax parties, and 33% remained ungrouped[4]. Since our hypothesis concerned only individuals

who identify with parties that are traditionally associated with pro- or anti-tax policies, our analyses were restricted to subjects from these two groups. Our final sample of interest consisted of 132 participants (58% female) who were 18-67 years old (M = 34.22, SD = 11.94).

Results of this experiment revealed differences across political parties in their constituents' preferences (see Figure 2). Those identifying with anti-tax parties demonstrated tax aversion: they were more than twice as likely to prefer living in the country with a longer daily commute when it enabled them to avoid a $4,000 tax than when it enabled them to avoid a $5,000 food cost ($\chi^2$ (1, N = 57) = 7.34, p = .007, ϕ = .36), despite the $1,000 lower absolute savings amount in the tax condition. In contrast, the preferences of pro-tax party members showed no significant effect of condition. If anything, they demonstrated a (non-significant) directional preference for the longer commute when it meant avoiding the higher additional food cost than when it meant avoiding the lower additional tax cost (χ^2 (1, N = 75) = 2.33, p = .127, ϕ = .18).

Insert Figure 2 about here

A binary logistic regression (with country preference as the dependent variable) was performed to further examine these effects. We entered condition, party affiliation, and their interaction as predictors. Condition was coded as 0 for tax-unrelated (food cost) and 1 for tax-related (tax cost), while political affiliation was coded as 0 for anti-tax and 1 for pro-tax. The model was significant overall (χ^2 (3, N = 132) = 9.81, p = .020), and revealed main effects of condition and party affiliation on country preference: random assignment to the tax condition increased the odds of preferring the country with the longer commute by 354% for those affiliating with anti-tax parties ($exp\ \beta$ = 4.54, p = .008), while identifying with pro-tax parties

(relative to anti-tax parties) did so by 184% for those in the food condition ($exp\ \beta = 2.84$, $p = .041$). Furthermore, the interaction between these two variables was also significant ($exp\ \beta = .11$, $p = .003$), meaning that condition assignment had a different impact on the preferences of pro- and anti-tax party respondents, as suggested by Figure 2 and the results reported above.

Experiment 4 further proves the existence of tax aversion and demonstrates that this phenomenon is strongest among members of anti-tax parties[5]. Republican and Libertarian respondents showed stronger preferences for avoiding a tax-related cost than a tax-unrelated cost, even though the latter was 25% higher. In contrast, members of pro-tax parties showed no such tendency.

In the next experiment, we examined a potential moderator of tax aversion; namely, the salience of agreeable or disagreeable uses of tax payments and its variation across political lines. We also sought to understand how deeply ingrained tax aversion is among members of anti-tax parties. Would it be possible to make them less tax averse, thereby bringing their preferences closer to those of pro-tax party members? We investigated these questions by reminding participants either that taxes are used in ways that they approve of *or* that taxes are used in ways that they disapprove of.

EXPERIMENT 5

Method

Participants. 1,029 participants were recruited from 3 populations: (i) users of Amazon.com's Mechanical Turk service ($N = 887$), (ii) users of craigslist.com, an online community forum ($N = 53$), and (iii) passers-by at a shopping mall in the northeastern United

States (N = 89). Participants completed the experiment for payment or as volunteers. Prior to analysis, we discarded 86 participants who reported either living outside of the US or having previously taken the survey. After these eliminations, our sample consisted of 943 US residents (62% female) who were 18-75 years old (M = 33.66, SD = 12.43).

Materials and procedure. The procedures for the online (i, ii) and mall (iii) participants were similar to those used in Experiment 1, although the materials differed, as described below.

The experiment consisted of a between-subjects design with participants assigned to one of three conditions (positive list, negative list, no list) in alternating order. In the positive list condition, participants first read the following instructions:

> *"Many of us pay taxes because they are mandatory, but without appreciating how tax dollars benefit the tax-payer. Take a moment to consider the different ways in which your tax dollars are well spent. For example, taxes are necessary for maintaining paved roads and bridges. Please write down the first three examples of positive uses of your tax dollars that come to mind. Please make sure to only list examples involving uses of your tax dollars that you approve. Do not list examples involving uses that you disapprove."*

In the negative list condition, participants instead saw:

> *"Many of us pay taxes because they are mandatory, but without believing that tax dollars benefit the tax-payer. Take a moment to consider the different ways in which your tax dollars are badly spent. For example, taxes are used for bailing out big banks and funding lobbyists who are advancing specific political agendas. Please write down the first three examples of negative uses of your tax dollars that come to mind. Please make sure to only list examples involving uses of your tax dollars that you disapprove. Do not list examples involving uses that you approve."*

In both the positive and the negative list conditions, participants responded according to the instructions, by listing three positive or negative uses of their tax payments, respectively. Participants in the no list condition did not complete the listing task, and instead moved directly to the next part of the experiment.

After the listing task, all participants saw and responded to the decision scenario that was used in the tax condition in Experiment 4, which essentially asked whether they would be willing to pay an additional yearly sum in taxes in order to avoid a 30-minute longer daily commute. However, in the current experiment, the tax amount was changed to $5,000 (the scenario was otherwise identical). The final page of the questionnaire asked participants to report demographic variables, including political affiliation, which also paralleled Experiment 4, except that participants could only select one political affiliation from the list of options.

Results and Discussion

Prior to analyzing the data, we eliminated responses from 23 participants who failed to list three positive or negative uses of their tax payments when asked to do so. While a wide range of responses were considered acceptable, omitted participants generally left the section blank or inserted unrelated words rather than tax uses. Some common (and acceptable) examples of positive uses of tax payments included: education, road maintenance, police departments, and fire departments. Common (and acceptable) examples of negative uses included: welfare, government bailouts, high salaries for politicians, and funding the Iraq war.

We then grouped participants based on their political party affiliation, using the same procedure as in Experiment 4: 37% aligned with pro-tax parties, 25% with anti-tax parties, and 38% remained ungrouped. Since our hypothesis concerned only individuals who identify with parties that are traditionally associated with pro- or anti-tax policies, our analyses were restricted

to subjects from these first two groups. Our final sample of interest consisted of 565 participants (62% female) who were 18-75 years old (M = 33.44, SD = 12.52).

Aggregating across listing conditions, members of anti-tax parties were more likely than members of pro-tax parties to prefer a longer commute in order to avoid paying additional taxes (60% vs. 48%, χ^2 (1, N = 565) = 7.26, p = .007, ϕ = .11). However, as Figure 3 shows, the listing task differentially affected the preferences of pro- and anti-tax party members. Members of anti-tax parties were less likely to prefer the longer commute (and more likely to prefer paying the additional taxes) in the positive list condition than in the negative list condition (χ^2 (1, N = 142) = 4.12, p = .042, ϕ = .17). In contrast, the listing task had no effect on the preferences of pro-tax party members (χ^2 (1, N = 215) < .01, p = .98).

Insert Figure 3 about here

Following the negative listing task, members of anti-tax parties were significantly more likely than members of pro-tax parties to prefer the longer commute over the higher tax (χ^2 (1, N = 176) = 6.41, p = .011, ϕ = .19). A similar result was obtained in the no list condition, but at a marginal level of significance (χ^2 (1, N = 208) = 2.74, p = .098, ϕ = .12). However, the effect of party affiliation disappeared in the positive list condition, where members of anti- and pro-tax parties were equally likely to prefer a longer commute over higher taxes (χ^2 (1, N = 181) = .10, p = .748). This effect could have been driven either by the descriptions presented in the listing tasks themselves or by the examples that participants generated in response to these tasks (or a combination of the two). In either case, the listing task generated negative or positive associations with the use of tax payments.

A binary logistic regression was used to further examine the effects of political party affiliation, listing task, and their interaction. Participants identifying with anti-tax parties were coded as 0; those with pro-tax parties as 1. Those assigned to the negative list condition were coded as -1; the no list condition as 0; the positive list condition as 1. The model was significant overall (χ^2 (3, N = 565) = 11.43, p = .010) and revealed main effects of both variables (listing condition: $exp\ \beta$ = .70, p = .043; political party identification: $exp\ \beta$ = .64, p = .009). Although we found evidence suggesting that participants who identify with anti-tax (relative to pro-tax) parties were somewhat more affected by the listing task, the statistical interaction only approached marginal significance ($exp\ \beta$ = 1.42, p = .115).

These results suggest several interesting differences between members of pro- and anti-tax parties, in terms of the accessibility and acceptability of tax uses. First, the results suggest that members of pro-tax parties are generally more aware and accepting of the fact that their tax payments are used in both positive and negative ways. This would explain why the listing task had no effect (in either direction) on their preferences. In contrast, the results suggest that negative uses of taxes are more accessible (and less acceptable) to members of anti-tax parties than are positive uses. This would explain why reminding participants of positive uses of their tax payments (in the positive list condition) increased acceptance of the higher tax among anti-tax party members, bringing their responses in line with the preferences of pro-tax party members. Furthermore, the results suggest that anti-tax party members may also be more receptive to additional examples of negative tax usage, thereby enhancing their dislike of taxes, as we see in the negative list condition.

A follow up survey was conducted on a separate sample of respondents[6] to determine whether pro-tax party members are more aware of positive uses of tax payments, more accepting

of the government using their tax payments in ways that they disapprove of, or both. When asked whether they believed their tax dollars were used in ways that they approve of or in ways that they disapprove of, significantly more pro-tax than anti-tax party members responded that this money was used in ways they approve of (43% vs. 7%, χ^2 (1, N = 125) = 17.85, $p < .001$, ϕ = .38). However, when asked to rate how they feel when their tax dollars are used in ways that they *dis*approve of on a 1 to 5 scale (where 1 = "*very angry*" and 5 = "*very satisfied*"), pro- and anti-tax party members reported similar emotions (1.95 vs. 1.86, $t < .7$, $p = .524$). This suggests that, compared to members of anti-tax parties, those who identify with pro-tax parties either approve of a higher portion of the ways that their tax payments are spent or that these positive uses may be more salient to them. The pattern of results obtained in Experiment 5 thus appear to be driven by differing beliefs about tax usage rather than differing affective reactions to disapproved uses.

In sum, pro-tax party members may be more aware of the fact that their tax payments are used in ways that they both approve and disapprove of. In contrast, positive tax uses may come as a comforting surprise to anti-tax party members, while negative tax uses may reinforce their existing skepticism. As a result, it would seem that members of anti-tax parties may actually have more malleable attitudes toward tax policies. The fact that we can alter their preferences by merely reminding them of some positive (or negative) functions of taxes suggests that their views on taxes are not entirely based on stringent, deeply-held principles.

One aspect of our sample worth noting is that, despite equal assignment to the listing conditions, a higher number of pro-tax party members completed the positive list condition than the negative list condition (N = 116 vs. 99), while a higher number of anti-tax party members completed the negative list condition than the positive list condition (N = 77 vs. 65). Although neither of these distributions is significantly different from chance (both binomial test ps > .27,

with the null hypothesis that members of pro- and anti-tax parties are equally likely to complete the positive and negative listing task), a modest selection bias may have been present and could have partly influenced our results. Far from negating our findings, however, such a bias would be consistent with our basic hypothesis regarding party affiliation. It would imply that members of pro- and anti-tax parties hold such different attitudes concerning taxes that even their willingness to *consider* positive and negative tax uses is correlated with their political affiliation.

GENERAL DISCUSSION

Across five experiments, we demonstrated that individuals exhibit tax aversion –a tendency to avoid taxes more than other equivalent (or even larger) costs. These experiments were conducted over two years (from February, 2009 to January, 2011), suggesting that the (economically) counter-normative patterns of preferences we observed were not the result of an isolated political event. In Experiment 1, we found that participants were more willing to travel to a distant store for a tax-free discount than for a larger discount that was unrelated to taxes. Experiment 2 demonstrated that they were also willing to spend more time waiting in line for an "axe-the-tax" sale than for an equivalent sale that was unrelated to taxes. Similarly, the smallest discount for which they were willing to spend a given amount of time waiting in line was lower for an "axe-the-tax" sale than it was for a tax-unrelated sale. In Experiment 3, we found that participants strongly preferred investing in tax-exempt bonds over taxable bonds that were equally profitable –a result that may help explain the puzzling (and suboptimal) tendency for households with low marginal tax brackets to purchase tax-exempt bonds. In Experiment 4, we found that tax aversion was most prevalent among respondents who identified with anti-tax

political parties, even though, crucially, the political relevance of their choices was not made explicit in our scenarios (political affiliation was always elicited *after* participants revealed their preferences regarding tax avoidance). Finally, in Experiment 5, we found that instructing members of anti-tax parties to consider positive uses of their tax payments led them to make the same (hypothetical) choices as members of pro-tax parties, thereby mitigating tax aversion. Our results show that people dislike taxes for reasons that extend beyond monetary costs, and relate to political and ideological factors. Although all participants in the experiments we reported were from the US, we also found some evidence of tax aversion in a separate population with a different political system; namely, UK residents (see footnote 5). Thus, tax aversion does not seem to be a uniquely American tendency.

Alternative Accounts and Possible Mechanisms

Readers may wonder about alternative accounts for our findings that are unrelated to tax aversion. In Experiment 1, participants might have inferred that the TV discounted by the store was of lower quality than the one being sold tax-free. In the case of store-based sales, retailers could mark up the base price of goods before placing them on "sale", or the goods could be on sale because they have hidden flaws (e.g., Chernev and Carpenter, 2001; Lo, Lynch, and Staelin, 2007). However, Experiment 2 referred to a store-based sale in both conditions ("axe-the-tax" vs. "customer rewards"), thereby eliminating this confound. In addition, since the sale in Experiment 2 was on all items in the store, it seems less likely that it would have implied that any specific product was inferior. Similarly, in Experiment 4, participants may have thought they could control their food costs, but not their taxes, and therefore considered their own food costs to be lower than the stated amount. However, the moderating impact of political party on tax aversion makes this account implausible unless one can explain why members of anti-tax parties would be

more likely (than pro-tax party members) to interpret food costs as more malleable than taxes. Furthermore, neither of these concerns extends to Experiment 5, where only the tax scenario was used, yet differences in tax aversion were still observed across party members and in response to the listing task. Finally, these alternative accounts do not explain the results of Experiments 2 and 3.

Concerning the mechanism(s) driving tax aversion, we believe several factors may be involved. One possible factor could be beliefs about government efficiency. If people believe that the government is inefficient, they may assume that their tax payments are largely wasted, and therefore unlikely to benefit them. However, this would not explain the results of Experiments 1 and 2 since, in the non-tax conditions, participants were willing to pay more for the good even though this money would go to the store and therefore not benefit them anyway. Furthermore, we did not find any interactions between self-reported measures of trust towards government, or attitudes regarding government efficiency, and condition (ps > 0.28).

Alternatively, the mental accounting phenomenon of decoupling (Thaler, 1999; Soman and Gourville, 2001) may be playing a role, since the payment of taxes generally seems disconnected from the ways the government uses that money. Again, decoupling does not seem to explain the findings from Experiments 1 and 2: it is not clear why participants would prefer to give their money to a retailer rather than the government, given that they do not know how it would be used in either case. However, in an attempt to examine this possibility, we included a question in the demographics section of Experiment 3 asking participants: “To what extent do you feel like you know how your tax dollars are being used?” (1-7 scale). Again, we did not find any significant interaction between this covariate and condition (p > .26). Nonetheless, we do not claim that these null results rule out the possibility that the above factors may also contribute to

tax aversion. Uncovering the mechanisms underlying tax aversion will be an important goal for future research.

Implications for Marketing

Marketers stand to benefit from understanding tax aversion and its impact on consumer behavior. The use of nominal tax-free sale strategies may be more effective than discounts taken directly from the pre-tax cost of a good, as we showed in Experiments 1 and 2. Consequently, stores may actually lure more customers by advertising "tax-free" sales than they would through equal, or even larger, tax-unrelated discounts taken off the face price of goods. In a "tax-free" sale, customers are led to feel as though they have avoided the sales tax entirely, when in fact, the store is still responsible for paying this tax to the government. Furthermore, as Experiments 4 and 5 demonstrated, this strategy may be most effective in politically conservative areas, where there is strong support for anti-tax parties, and the Tea Party movement in particular.

More broadly, this paper highlights political orientation as an effective dimension for segmenting consumers. Although consumer political orientation has received relatively limited attention among marketing researchers (outside of direct political marketing), we have shown how this variable critically moderates the impact of taxes on various purchasing preferences. This paper thus adds to recent work demonstrating the added utility of using political data to model consumer demand (Roos and Shachar, 2010), as well as previous research examining how consumption behavior is an expression of political ideology (Crockett and Wallendorf, 2004) and how political attitudes relate to the acceptance of innovative trends (Baumgarten, 1975). Future investigations should continue to examine the possible role of political affiliation in purchasing decisions. For example, the weight placed on certain attributes, such as the fact that a product is "Made in the USA", organic, or environmentally friendly, will likely differ considerably between

right-leaning and left-leaning consumers. Similarly, consumer attitudes towards advertising campaigns themselves may vary across the political divide. Many conservative consumers may be averse to campaigns or slogans that have sexual undertones, while liberal consumers may shun campaigns or slogans that they perceive as reinforcing negative gender stereotypes. Understanding the dominant political orientation of a target audience could improve the effectiveness of a marketing strategy and thus prove quite profitable.

Implications for Policy

Policy-makers and governments may also benefit from considering tax aversion as a driver of financial behavior. While standard economic theories concerning the behavioral impact of taxation assume decision-makers "rationally" adjust their behaviors to the financial costs of taxes, our results suggest that many people have an (economically) irrational aversion to taxes that can alter their preferences disproportionately relative to financial cost. Economists may consider including tax aversion in their models; for example, by adding a parameter to adjust for a behavioral avoidance of taxes that extends beyond their monetary costs. Policy-makers and academic theorists interested in predicting the impact of tax legislation on behavior, and projecting corresponding tax revenues, could similarly gain from incorporating this non-monetary factor into their models. In certain cases, the government could make use of tax aversion for policy purposes, such as promoting the sale of tax-exempt municipal bonds, or limiting behaviors that are deemed harmful (e.g., through sin taxes on cigarettes, alcohol, or gambling). Conversely, a new tax expected to raise revenue from a region with a disproportionately large Republican population might result in greater behavior modification, and correspondingly lower tax revenues, than a conventional model would project.

However, our findings also suggest that tax aversion may not create an intractable obstacle, or even a permanent difference in tax avoidance behavior across party lines. Instead, governments may be able to mitigate tax aversion and minimize these political differences. Recent research shows that allowing consumers to determine how some of their taxes are spent can increase their satisfaction with paying taxes (Lamberton, 2010). The results of Experiment 5 suggest an even simpler approach, requiring no change in legislation: using public advertising and other outreach efforts to raise awareness and increase the salience of some widely favored uses of tax money. This might be a productive way to increase tax revenue, particularly if these initiatives are targeted at Republicans and Libertarians in contexts where they must make tax-related decisions (e.g., at the beginning of tax return instructions). Dedicating resources to educating citizens about the positive roles the government plays and how it works could similarly reduce tax aversion. Such initiatives would be natural extensions of the work carried out by the Internal Revenue Service's Taxpayer Advocate Service. One goal of this branch of the IRS is to increase voluntary taxpayer compliance. In fact, they have explicitly stated that "[a]n understanding of the factors impacting taxpayer compliance is crucial to effective tax administration", and have made this issue one of their areas of emphasis for 2011 (Taxpayer Advocate Service, 2010, p. 23).

Conclusions and Future Directions

Future research examining the mechanisms that lead to tax aversion and how they interact with political affiliation could prove fruitful in designing marketing strategies and predicting behaviors. Additionally, it will be important to extend this research to the field, in order to evaluate how effective "axe-the-tax" sales are in practice, or the extent to which such sales have greater success in predominantly Republican areas. While the findings reported here

spark further research questions, the core results indicate a clear behavioral tendency with regard to taxes (relative to other costs). Both marketers and policy-makers can benefit from recognizing this unique, and economically irrational, propensity to avoid taxes, as well as how it varies across population segments.

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FOOTNOTES

1. Although this term has previously been used in varied contexts to mean several different things, we re-define it here. Our use of the term is most closely related –but not identical– to the one discussed by McCaffery and Baron (2006).

2. For evidence and a discussion of the validity of results obtained from this platform, see Paolacci, Chandler, and Ipeirotis (2010).

3. These differences between scenarios are highlighted for the reader only, to ease comparison across conditions. The actual text that participants saw was written in the same font for all conditions. This holds for all the scenarios presented in this paper.

4. No participants identified with multiple parties that were incongruent regarding tax policy (e.g., both "Libertarian" and "Democrat"). Participants who listed one party from the pro-tax (or anti-tax) category and another from the ungrouped category were labeled pro-tax (or anti-tax).

5. We replicated these results with UK residents ($N = 512$) who saw scenarios similar to those in Experiment 4. Tax aversion was highest among right-leaning (anti-tax) respondents and absent among left-leaning (pro-tax) ones, while centre-leaning respondents (moderates) fell in between.

6. We recruited respondents following the approach used in Experiment 4. Focusing on US residents affiliating with pro-tax (40%) or anti-tax (22%) parties produced a sample of 125 participants (67% female) aged 18-74 years ($M = 34.32$, $SD = 13.23$).

FIGURES

Figure 1: The proportion of participants in each condition preferring to wait in line for a 9% discount as a function of waiting time (left graph), or for 15 minutes as a function of discount size (right graph) (Experiment 2). If there were no differences between the tax and non-tax conditions, then we would expect the two lines in each graph to overlap or crisscross. Instead, the line for the tax condition is consistently above the line for the non-tax condition, demonstrating a greater willingness to wait for the discount in the tax condition, across the full ranges of waiting times and discount sizes. Note that the vertical axes in each graph span different ranges.

Figure 2: The proportion of participants preferring a longer daily commute rather than a higher annual food or tax cost, as a function of political party affiliation (Experiment 4). Numbers below the bars represent the sample sizes for each condition and political group.

Figure 3: The proportion of participants preferring a longer daily commute rather than a higher tax cost, as a function of political party affiliation and listing task (Experiment 5). Numbers below the bars represent the sample sizes for each condition and political group.