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TO SPEND OR NOT TO SPEND: AN INVESTIGATION OF CONSUMER BEHAVIORS RELATED TO TAX REFUNDS

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ABSTRACT

This research is focused on exploring consumer behavior in relation to federal tax refunds. We constructed a survey questionnaire to examine the choices made by consumers; the patterns focused on spending vs. saving behaviors, types of purchases (luxury vs. necessity), and taxpayer confidence levels in tax preparation. The objective of the research is to determine the characteristics of consumers who spend (save) their tax refund, as well as gauge levels of inherent consumer responsibility. We recruited participants via MTurk (Amazon Mechanical Turk) in which participants self-select and complete the survey for compensation. This research used a scenario-based approach for data collection, in which we instructed consumers to respond as if they had received a $3,000 refund. Results indicate that consumers who describe themselves as tightwads save more of their refund and consider their use of the refund as more responsible than consumers who describe themselves as spendthrifts. Tightwads also perceive that they have more knowledge of tax rules and are less confused about tax reporting than spendthrifts. Our paper contributes to the literature on tax policy by providing insight into the consumer perspective on tax rules and response to tax refunds.

JEL: H24, G51, M30, Z18

KEYWORDS: Tax Refunds, Tax Policy, Saving, Consumer Behavior

INTRODUCTION

A filing citizen can claim a refund from the Internal Revenue Service (IRS) when they have paid too much tax throughout the year. The amount of tax owed is based on income, and is reduced by various credits, deductions, and exemptions, which can net a negative amount – thus the IRS owes a refund to the taxpayer. Tax payments are withheld from income, usually on paychecks of wages or salaries; if the total payments are more than the amount owed, then that is cause for a refund to be issued (Smith 2017). A common complaint among citizens has consistently been the distribution of taxes and high tax rates, yet tax rates need to be at a certain level to produce benefit for citizens. As Smith states "tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person," meaning payment of taxes is an expectation of basic citizens (Smith and Cannan 2003, p. 466); taxes are owed based on income levels with rates differing at each income bracket. While many citizens often complain about having to pay the government more funds when they file taxes, most citizens receive a tax refund from the government. As of 2003, close to eighty percent of citizens who filed a return received a refund, averaging about $2,400 (Bobek et al. 2007). In recent years, the percentage is still consistent, while the average tax refund has risen closer to $3,000, with seventy three percent of taxpayers receiving a refund of an average of $2,860 in 2016 (Wiles 2018). Each taxpayer is allowed certain deductions and credits based on individual circumstances, so gaining eligibility to receive a refund is not

an impossible task, based on the individual's financial situation of the year while filing. With a deadline of April 15 to file, taxpayers usually receive refunds from the US Treasury by direct deposit to their bank accounts within 21 days of processing by the IRS, or by mail by the end of May (Farrington 2019). As of February 2019, the average refund for 2018 is $1,865, which is 8% lower than the previous year (Alanis 2019); this is the first year that citizens are filing after Trump's 2017 tax reform.

In the United States, major tax reforms have occurred with each new administration to take office since the start of the twentieth century. Notable reforms have included Reagan's 1981 tax cut, Clinton's 1997 Taxpayer Relief Act, Bush's Reconciliation Act of 2001, Obama's Affordable Care Act of 2012, and the most recent, with Trump's 2018 Tax Reform (Huddleston 2019). With the constant changes and amendments to the tax code, it is no surprise that many taxpayers face uncertainty and confusion when filing their yearly taxes. Tax season is a source of headache and stress for most taxpayers, however since the majority end up receiving some amount in refunds, there is a net positive outcome. Following tax season, these consumers have funds to use at their own personal discretion.

In our study, we explore consumer behavior in relation to federal tax refunds by analyzing the behavior of consumers who have a predominantly "save" vs. "spend" mentality. We also analyze whether the difference in consumer attitudes affects self-reported knowledge or confusion about tax policy. Our paper is important because knowledge of consumer behavior can help guide tax reform policies. Tax rules that are too confusing can result in more errors in tax filings and more cost to the consumer (Scotchmer 1989). In addition, understanding consumer behavior can help both individuals and providers of financial education direct financial literacy efforts to individuals based on their spending preferences and their level of financial expertise. Studies have shown that financial education decays over time (Fernandes et al. 2014) and is only effective if it "enables consumers to … take the actions necessary for financial well-being today" (Willis 2009). This paper is organized as follows: in the next section, we review the relevant literature, followed by our research objective and hypotheses. We then describe our research method. We present results, followed by a discussion and conclusion.

LITERATURE REVIEW

Save or Spend Mentality

When receiving a sum of money, in such cases as a tax refund, consumers can use those funds in two different ways: save or spend. While most people would prefer to have the ability to save those funds for a rainy day, that is not always possible. Ideally, one would be able to use a refund to either pay off debt or save, but personal nature sometimes prevents the ideal circumstance. Instead of saving, consumers are also likely to treat themselves to an extravagant purchase, take a vacation, or even spend the funds on daily living expenses. As of 2018, based on a poll from the National Retail Federation in February, half of consumers surveyed reported the intent to save, while thirty-five percent intended to use it pay off debt; the remaining intended to spend their refunds (Wiles 2018). People tend to spend money based on predictable changes in income. For example, if someone is expecting to receive a raise in their salary of a certain percentage, and that raise is to be permanent, their consumption level would also rise due to the increased income level; because they earn more, they are willing to spend more (Mankiw 2000). That is part of the reason that people who make more money live in nicer houses and drive higher quality cars – their consumption level is reflective of their income level.

While tax refunds cause a temporary increase in personal funds, they are not a continuous source of income. However, when people become accustomed to a tax refund that stays consistent or increases in amount year after year, they begin to expect it and make plans for its yearly use, whether that be for saving or spending. Moreover, research suggests that taxpayers purposely plan to receive a refund. Bobek et al. (2007) investigate why taxpayers prefer refunds based on the theory of planned behavior (Ajzen 1991). Their

results show that taxpayers' attitudes, such as the desire to avoid uncertainty or avoid any chance of underpayment, influence taxpayers' withholding decisions. However, taxpayers also perceive emotional benefits ("enjoyment" of the refund check) from over-withholding that offset any financial costs. As such, taxpayers in the study who received refunds were more likely to go on a vacation (53.6%) or buy new electronics (37.9%), than they were to save their refund (32.9%) or use it to pay off bills (41.4%) (Bobek et al. 2007). Most consumers want to keep their spending level consistent or maintain a steady growth related to income growth throughout their lifetime; however, with unexpected expenses or different life stages that is not always possible. One of the main factors that contribute to an increase in spending is whether consumers believe the funds, such as a tax rebate or bonus, are a one-time contribution or a permanent source of income. Consumers are more likely to change their spending patterns if the contributions are permanent rather than temporary (Steindel 2001). A permanent tax cut, which results in refund amounts to be permanently higher, will cause consumers to spend more money. Likewise, rebates distributed in lesser amounts can conduct a stimulus more effectively than a lump sum (Spencer and Chambers 2012).Individual life status and demographic differences also have an impact on saving levels and motivation. Varied factors such as family history, financial history, proximity to retirement age, individual financial education, family structure and obligation to family, employment history, and access to financial institutions are all factors that influence motivation to save (Turner and Manturuk 2012). For example, older individuals closer to retirement as well as single parents are more likely to save, as they are more motivated to save for their futures. Meanwhile, families with young children are often likely to spend, because they associate a feeling of happiness with being able to provide their children with new toys or fun activities. The different life experiences of individuals contribute to their save or spend mentality. People who grew up wealthy are higher spenders, as they have never really had the motivation or example to save, while people who grew up in low-income families see the value in saving their funds in case of emergency.

Propensity to Spend Related to Tax Rebates or Refunds

The most common intent of tax rebate usage is to either save the funds or use them to pay off prior debts. In 2019, half of consumers report their intent to save refunds, while only 41% reported that intent in 2018 (Borodovsky 2019). When viewing a refund as a source of purely disposable income for a one-time tax break, the propensity to spend is low overall. Should consumers view this as a permanent tax cut or a continuous source of funds, the propensity to spend would be higher. In a 2001 study designed to measure the effects of changes to income tax withholding, Shapiro and Slemrod (2003) found results associated with the creation of the 10 percent income tax bracket that showed major differences in consumer propensity to spend compared to 1992 studies, with 2001 studies showing a much smaller group of consumers willing to spend (Shapiro and Slemrod 2003). Consumers are more likely to increase spending when they believe the tax policy, and resulting refunds/rebates, are permanent changes. If a tax cut is temporary, consumers are more likely to save greater amounts and spend gradually over time.

Thus, if the amounts in question are "small" amounts, meaning those that do not have a significant impact to the consumer or their wealth, and if the consumer views the tax cut as temporary, then the consumer will treat the rebate like ordinary income (Modigliani and Steindel 1977). On the other hand, other research shows that if the consumer perceives a rebate as a "windfall" – unanticipated money – it is more likely to be spent than other types of assets (Arkes et al. 1994). A specific example of public policy related to consumer spending occurred in 2008, when Congress tried to use tax rebates as a stabilization method for the economy. Economic Stimulus Payments (ESPs) were received by 130 million filers, ranging from $300-$1,200, depending on filing status; the average rebate received was $950 (Parker et al. 2013). The amount spent by the government on this program was $100 billion, in the hopes of avoiding an economic downturn (Broda and Parker 2008b). The goal of the payments was to increase consumer spending within the economy. Researchers found that the average household spent an average of 12 to 30 percent of the stimulus. Most of the spending occurred in the week that households received the rebates, with low-income households spending the most overall. The average family increased their spending by 3.5% (Broda and

Parker 2008a). Consumers spent lower amounts of their refunds on "necessities," and more on items such as electronics and furniture (Broda and Parker 2008a). Overall, the research based on 2008 rebates shows that given an influx of funds, consumers are likely to spend it quickly and on things that are not necessarily part of their daily lives. Given the goal of the payments, the government deemed the policy successful, as consumers spent their refunds at a significant rate (Broda and Parker 2008b).

Another factor related to consumer spending of tax refunds may be attributed to credit scores and credit card usage. Credit scores range from 300 (poor) - 850 (excellent), with only approximately 20% of Americans having a score over 800. The scores show a borrower's payment history on loans and debt (Andriotis 2019). As of 2018, the average credit score in America was 674, which ranks as "good" (Berger et al. 2018). Scores can depend on amount of debt, length of credit history, and promptness of payments. Higher credit scores reflect better financial habits and a higher likelihood of a consumer making prompt payments, and lower interest rates are often offered to applicants with higher credit scores. In addition, consumers with higher scores (above 800) tend to have multiple credit cards, with attempts to keep their spending low – below 10 to 30 percent of credit limit (McAllister 2019). A study featured in *The Journal of Political Economy* focused on distributing refunds over a period of ten weeks from July to September, with the idea that receipt of a rebate would not have an impact on spending. The authors found, in relation to consumption with credit cards, that spending tended to increase on average of $200 overall within nine months of consumers receiving their tax rebates (Agarwal et al. 2007). While consumers' first reaction was to save their rebates, it later leads to an increase in credit card spending. Usually, the consumer would spend either the amount received as a refund or slightly less.

Consumer Self Control

The save or spend mentality, which can also be viewed in relation to consumers' spending self-control (CSSC), is different depending on the individual consumer. Hoch and Loewenstein (1991) define consumer self-control as "a struggle between willpower and desire that arises from preferences that are inconsistent with respect to time." As an inherent trait, CSSC relates to the consumers' willingness to spend and their self-control. Those with a low CSSC tend to have poor control and spend excessive amounts of money, sometimes impulsively. Unawareness of future consequences often contributes to poor CSSC; those individuals do not often expect the financial effects of a current purchase. Poor control over personal spending can result in considerable amounts of debt and, in extreme cases, bankruptcy, especially in those individuals with a small amount of personal savings; as of 2011, the personal savings rate of the US has remained consistent at approximately 3%, one of the world's lowest (Haws et al. 2011). In fact, a recent report from CNBC.com states that more than 1 in 5 Americans do not set aside *any* of their annual income for short-term or long-term goals (Elkins, 2019). Elevated levels of CSSC relate to higher financial awareness and control. Consumers often spend money because they are motivated by the expected pleasure associated with a purchase (Lee et al. 2006). Instead of focusing on the immediate pleasure associated with spending, consumers can control this behavior by relying on thoughts of the pain of paying (Prelec and Loewenstein 1998; Rick et al. 2008). Similarly, credit cards elicit different attitudes and behaviors among consumers when it comes to spending (Awanis and Cui 2014). Research in credit card psychology and behaviors shows that consumers differ in the extent to which they exhibit fiscally responsible behavior when it comes using "plastic" money (Awanis and Cui 2014). Some consumers are more susceptible to negative financial outcomes because of the "credit card effect" which researchers operationalize as consumers' tendency to spend more, underestimate recent credit card expenditures, and overestimate available income (Awanis and Cui 2014).

While affective reactions to spending money may be partially circumstantial, the pain associated with paying is considered an individual trait (Rick et al. 2008). Therefore, researchers have also examined how consumers may differ in their psychological and behavioral reactions to spending. In general, researchers have also suggested that while some individuals have a propensity to indulge, others find it more difficult

(Ameriks et al. 2003). The marketing literature categorizes those that do not feel pain sufficient to consider the consequences of overspending as s*pendthrifts*, and those whose affective reactions to spending "lead them to spend less than their deliberative selves prefer" as *tightwads* (Rick et al. 2008, p. 768). These terms are used to also describe the emotions related with spending money, as tightwads feel a pain associated with purchasing, while spendthrifts are more likely to feel a thrill. Those who experience minimal levels of stress (or pain) when spending may not expect the outcomes of spending. For example, when faced with a potential purchase at a retail store, the spendthrift who feels the thrill of buying an expensive designer handbag now does not behave as though the extravagant shopping spree will force them to give up something else in return. Meanwhile, the tightwad contemplates what he must give up when making this purchase. In this case, the thought of buying a handbag equivalent in value to a monthly car payment may cause them emotional pain, thinking of what else they must give up to be able to afford the car payment. The expected emotions throughout the decision process aid in defining which category a consumer will fall in. The spendthrift, showing poor spending self-control, will buy the bag, while the tightwad refrains, as their higher level of self-awareness and spending control leaves them unable to justify the purchase.

Taxpayer Confusion and Uncertainty

With the introduction of tax preparation and filing assistance services, such as H&R Block in 1955 and TurboTax in the 1980s, consumers now have greater ease in filing yearly taxes, as well as greater access to tax advice with the expansion of the internet (Silva 2019). TurboTax and H&R Block are two of the most popular filing assistance services, both known for their user friendliness and ease of use. However, in years prior, taxpayers were forced to navigate preparation and the complex tax code by either seeking tax advice from a Certified Public Accountant, or trying to figure it out on their own, which increases the degree of uncertainty for most taxpayers. Even to this day, the tax code is continuously changing and becoming more complex, and so often that a clear answer to questions cannot always be easily discovered. It has been argued that taxation should be a component of financial literacy, considering the high complexity of tax law and its potential to have a direct impact on financial wellbeing (Cvrlje 2015). Tax literacy can extend to comprehension of tax policy, tax calculations and preparation, understanding tax reports, or managing personal taxation (Fallan 1999; Razman and Ariffin 2000; Bhushan and Medury 2013).

However, it may be in the better interest of the government to keep the tax code at a high complexity level, as taxpayer confusion may ultimately benefit the government and IRS, as a complex tax code can create added costs for the taxpayer (Scotchmer 1989). The complexity of the law leaves taxpayers unsure about their actual tax liability and how much they would owe or be owed from the IRS, and therefore they may inaccurately report income. With that information incorrect, taxpayers may not receive a tax refund when they may in fact be eligible for one, or a refund may be delayed if elements of the return were not correctly reported. Additionally, the consumers may not be taking full advantage of all deductions or credits they may be eligible for, simply because they are unaware the credit even exists (Krause 2000). In this case, the IRS can collect extra revenue, while the taxpayer suffers.

Research Objective and Hypotheses

The purpose of this study is to identify factors that predict consumers' decisions and behaviors related to use of their tax refunds. Specifically, we seek to examine how individual traits consistent with those exhibited by spendthrifts and tightwads are associated with how people choose to allocate their tax refund in terms of saving versus spending. We also examine how such factors are associated with consumers' level of knowledge related to tax laws and preparation as well as the extent of their confusion on such matters. An additional focus includes the types of expenditures made by average consumers with their tax refunds, as well as the confidence level of the taxpayers in their tax return preparation. Based on the literature describing tightwads vs. spendthrifts, we propose that these individual characteristics are another indicator of planned behavior that applies to the use of a taxpayer's refund. Although there is conflicting

evidence about the saving (Borodovsky 2019; Shapiro and Slemrod 2003) as opposed to spending (Modigliani and Steindel 1977; Bobek et al. 2007) of tax refunds, we believe that the characteristics of a tightwad support our first hypothesis, which follows:

> *H1: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will save (spend) a greater proportion of their tax refund.*

Further, along with saving (as opposed to spending) behavior, we expect that if tightwads spend their refund, they will do so responsibly. This ability to spend responsibly is enhanced by tightwads' fiscally responsible behavior. For example, spendthrifts are more likely than tightwads to carry credit card debt, an effect which is independent of income (Rick et al., 2008) and may thus instead be the result of a lack of awareness associated with falling into the "ensnarling traps" of the credit card effect (Awanis and Cui 2014, p. 412). On the other hand, tightwads may be more financially savvy as they are more likely to be educated and choose areas of study which are more quantitative than those chosen by spendthrifts (Rick et al. 2008). We propose our second hypothesis as follows:

> *H2: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will use their refund in a more (less) responsible manner.*

We also propose to investigate whether tightwads' fiscal responsibility applies to tax literacy. Given this, we predict that consumers who skew more towards a spendthrift mentality will be more confused when it comes to tax regulations and filing protocol, while those who exhibit tightwad characteristics will be more knowledgeable on these matters. Our hypotheses are stated as follows:

> *H3a: Spendthrift (tightwad) characteristics will be negatively (positively) associated with knowledge related to tax regulations and filing protocol.*

> *H3b: Spendthrift (tightwad) characteristics will be positively (negatively) associated with confusion related to tax regulations and filing protocol.*

METHODOLOGY

A survey-based research design was used to evaluate hypotheses 1 and 2. Hypothesis 1 predicts that individual traits associated with tightwads will positively predict the proportion of the tax refund that is saved, while traits consistent with the spendthrift construct will be negatively associated with the proportion of the refund saved. Again, because we asked consumers to allocate their refund to spending or saving using a percentage totaling one hundred, the spending and saving variables are complements of one another and we thus only include the percentage saved in the model. Specifically, we used a hypothetical tax refund scenario which asked consumers to assume they had received a $3,000 tax refund, a figure based upon the national refund amount (Loudenback 2019). We then asked participants questions related to how they planned to allocate this refund in terms of spending or saving. We also captured respondents' psychological and behavioral relationships with spending and saving to determine the impact of this individual characteristic on the variables of interest.

Sample Selection and Procedure

The survey used to collect empirical data was posted electronically to Amazon Mechanical Turk (MTurk) in November 2018 and was posted through February 2019. MTurk is a crowd-sourcing platform commonly employed by market researchers as it allows for the electronic sourcing of consumer data found to be of equal or better quality than that offered by student samples or professional panels (Kees et al. 2017). MTurk allows respondents to self-select into surveys they want to complete. Our sample included one hundred

ninety-four MTurkers (57% Male/M_{Age} = 45.81) who received nominal compensation ($1.25) in return for survey completion. At the start of the survey, participants were presented with the following hypothetical scenario: *Imagine after submitting your taxes you receive a refund of $3,000. Based upon this scenario, please answer the questions that follow*. We chose to use a hypothetical scenario given respondents may not have been comfortable disclosing their tax refund figure and/or been unable to accurately recall the exact amount they received. These factors increased the risk of respondent drop off, and more importantly, biased data. After we exposed participants to the hypothetical scenario, they were asked to complete the scale items capturing the dependent measures of interest which are detailed in the following section.

Measures

Percentage of Refund Saved (%SAVE): The first dependent measure was designed to capture how consumers would allocate a tax refund. Specifically, respondents were told to estimate the percentage of the $3,000 refund they would spend or save, ensuring that the total of these two options was 100%. We used the following language: *Please estimate the percentage of this $3,000 refund you would spend or save. The total of both percentages must add up to 100 percent*. We ran all analyses using the percentage consumers indicated they would save, as the spend percentage was simply the complement of this figure.

Tightwad-Spendthrift Score (T-S): To capture this construct, we used an eight-item, seven-point (1 = *does not describe me at all* / 7 = *describes me very much*) scale adapted from Rick et al. (2008). Four of the scale items measured participants' tendency to exhibit characteristics and behaviors consistent with spendthrifts: *Spending money makes me happy; It is hard for me to deny myself the things I want; I have trouble limiting my spending; Sometimes I regret my how much money I have spent*. The other four scale items captured consumers' tendency to think and behave in a manner consistent with tightwads: *I have difficulty spending money*; *Parting with money makes me anxious; I think carefully about a purchase before I make it; I only spend money on things I need.* We reverse-coded the items capturing the tightwad construct and combined these with the spendthrift items ($\alpha = 0.82$) to create a mean score. Therefore, higher (lower) scores on this measure indicate a greater tendency towards spendthrift (tightwad) characteristics.

Responsible use of tax refund (RESP): This variable captures whether consumers consider their intended use of the hypothetical tax refund to be responsible in nature, versus more frivolous or indulgent. The variable was captured using a three-item, seven-point bipolar scale ($\alpha = 0.96$): *Please categorize your planned use of the $3,000 refund as…indulgent/responsible, frivolous/sensible, impractical/practical.* Thus, the higher the score, the more responsible the participants considered their planned use of the refund.

Tax Knowledge (KNOW): This research operationalizes tax knowledge as respondents' self-reported understanding of tax regulations and filing preparation. Specifically, we asked respondents to complete a two-item scale indicating their level of agreement (1 = *Strongly Disagree* / 7 = *Strongly Agree*): with the following statements: *I am knowledgeable about tax regulations; I feel confident completing my own tax returns without error* ($\alpha = 0.83$).

Tax Confusion (CONFUSE): Respondents were asked to report their level of confusion concerning the tax code. Specifically, participants were instructed as follows: *Thinking about the current U.S. tax regulations and rules, please indicate your level of understanding or confusion by completing the scale below*. Participants were then directed to a three-item, seven-point bipolar scale (*I am very clear* / *I am very confused*; *I feel informed* / *I feel uniformed*; *I feel confident* / *I lack confidence;* $\alpha = 0.94$).

Credit Score (CS): Respondents were requested to disclose credit score as a proxy for financial responsibility. The scale was a self-reported, five-point interval scale (1 = *300-570*, 2 = *580-669*, 3 = *670-739*, 4 = *740-799*, 5 = *800-850*). Therefore 1 (poor) indicates a lower credit score and lower financial responsibility, while 5 (excellent) indicates a higher credit score and greater financial responsibility. We

also included a "don't know" and "would rather not say" option in this question. Therefore, the regression analyses in the additional testing section which explore the implications of credit score have 174 (vs. 194) participants, all of whom responded to the credit score question.

See Appendix A for a detailed overview of the questions and scale items used to capture the constructs of interest.

Descriptive Statistics

Table 1 presents all descriptive statistics and correlations for measures captured in this study. Panel A provides means, standard deviations, and scale reliability, while Panel B shows the correlation matrix. While it is beyond the scope of the current research to explore general consumer habits related to financial responsibility, overall, the standardized means indicate that our sample consumers have a relatively solid grasp of tax regulations and self-categorize as more restrictive in their spending behavior than one may have guessed. However, there is no reason to believe that our sample characteristics are any different than would be reported by the U.S. population at large.

Table 1: Descriptive Statistics and Pearson Correlations

Panel A: Means, Standard Deviations and Scale Reliability of Constructs					
Construct	**Variable**	**Min/Max**	**Mean**	**SD**	**α**
Tightwad - Spendthrift Score	TS	1/7	3.54	1.20	0.82
% of Refund Saved (vs. Spent)	%SAVE	0/100	58.50	28.43	N/A
Responsible Use of Refund	RESP	1/7	5.38	1.51	0.96
Tax Knowledge	KNOW	1/7	4.60	1.65	0.83
Tax Confusion	CONFUSE	1/7	3.72	1.78	0.94
Credit Score	CS	1/5	3.36	1.48	N/A

Panel B: Correlation Matrix					
Variable	**TS**	**%SAVE**	**RESP**	**KNOW**	**CONFUSE**
TS	1.00				
%SAVE	-0.38**	1.00			
RESP	-0.42**	0.37**	1.00		
KNOW	-0.13	0.08	-0.07	1.00	
CONFUSE	0.140	-0.05	-0.10	-0.73**	
CS	-0.21**	0.28**	0.24**	0.06	-0.07

Table 1 shows descriptive statistics and correlations. Panel A displays descriptive statistics for all variables used in the analyses. Panel B reports the correlations between all variables and indicates whether these correlations were significant at the 1 (***), 5 (**) or 10 (*) percent levels respectively. In this table n = 194 for all variables except Credit Score (CS) where n = 174 since some participants were unable or unwilling to report their credit score.

RESULTS

Table 2 presents a summary of the results of our hypotheses testing. H1 predicts that consumers with higher scores on the TS scale, indicating that they have a greater inclination towards spendthrift versus tightwad behaviors, will save (vs. spend) a smaller portion of their income. A linear regression model run with tightwad/spendthrift characteristics as the independent variable, and percentage of the tax refund saved as the dependent variable, shows support for H1, and produces the below, statistically significant regression equation ($F(1, 192) = 32.84$, $p < 0.001$).

$$\%SAVE = -9.02TS + 90.45 + \epsilon \quad (1)$$

More specifically, the regression coefficient for TS variable is negative and statistically significant (β = -9.02, $p < 0.001$), indicating that as consumers' scores on the tightwad/spendthrift scale increase (i.e., move away from tightwad and towards spendthrift), the percent of the refund saved is reduced and the percent spent increases. These findings suggest that consumers exhibiting characteristics consistent with tightwads will be more likely to save a greater portion of their tax refund, while the opposite is true for spendthrifts. Consistent with previous research indicating spendthrifts find joy in spending (Rick et al. 2008), our research suggests that consumers who exhibit spendthrift characteristics will spend (vs. save) a larger portion of their tax refund. A second linear regression analysis finds confirmatory support for H2. Specifically, when TS was regressed on how responsible participants felt their planned use of the hypothetical refund was, the regression equation below was found to be significant (F (1, 192) = 41.09, $p < 0.001$), and the coefficient for TS was both negative and significant (β = -0.53, $p < 0.001$). Thus, the relationship between the TS score and responsible use of tax refunds is expressed as follows:

$$RESP = -0.53TS + 7.25 + \epsilon \quad (2)$$

These findings indicate that, as predicated, spendthrifts, relative to tightwads, planned to use their hypothetical tax refund in a less responsible manner. To explore the influence of consumers' tendencies towards spendthrift or tightwad characteristics on knowledge (KNOW) and confusion (CONFUSE) related to tax regulations we ran two regressions. First, we regressed the TS variable on tax knowledge, the measure capturing how well consumers felt they understood tax regulations and were confident in their ability to file taxes. This analysis produced the below equation which was significant at the 90% confidence level (F (1, 192) = 3.27, $p = 0.07$).

$$KNOW = -0.18TS + 5.23 + \epsilon \quad (3)$$

Further, the negative and significant coefficient (β = -0.18, $p = .07$) for the independent variable indicates that as spendthrift characteristics increase, tax knowledge decreases. Alternatively, tightwad characteristics are positively associated with tax knowledge. These findings offer confirmatory evidence for H3.

H3 also predicts a positive influence of spendthrift characteristics on tax confusion. We investigate this relationship in a follow up linear regression. Specifically, we regressed the TS variable on participants' confusion (CONFUSE) related to understanding tax regulations and filing returns. This analysis produced a significant equation (F (1, 192) = 3.76, $p = 0.05$), as well as a positive and significant beta coefficient for the independent variable (β = 0.20, $p = 0.05$) as shown below:

$$CONFUSE = 0.20TS + 3.00 + \epsilon \quad (4)$$

Therefore, confirming H3, the more consumers identified with a spendthrift (vs. tightwad) mentality, the more confused they tended to be when it came to understanding and filing taxes. The beta values in the two previous regression models indicate a relatively equal sized effect of the TS variable on tax knowledge and confusion, but in opposite directions. Consistent with H3, spendthrifts tend to be more confused and less knowledgeable, while tightwads are less confused but more knowledgeable on tax matters.

Additional Testing

Although not specifically hypothesized, we conducted additional testing to gain insight into the relationship between credit score and spending / saving behavior. As previously noted, our sample size for these tests was slightly smaller than in previous analyses. This is because some respondents were either unwilling to provide their credit score or were unable to do so because they did not know it. Therefore, the following analyses were conducted with a sample of 174 participants. First, we ran a regression analysis that used %SAVE as the dependent variable and CS as the independent variable. A significant regression equation

was found (F (1, 172) = 20.18, $p < 0.001$), as was a positive, significant relationship between credit score and %SAVE (β = 7.38, $p < 0.001$).

$$\%SAVE = \ 7.38CS + 35.48 + \epsilon \quad (5)$$

In a second regression, our intent was to discover the influence of the tightwad / spendthrift behavior on credit score, using CS as the dependent variable and TS as the independent variable. The results again produced a significant regression equation (F (1, 172) = 9.60, $p < 0.01$). Further, our results show that, as would be expected, TS negatively and significantly predicts credit score (β = -0.24, $p < .001$).

$$CS = -.24TS + 3.92 + \epsilon \quad (6)$$

Table 2: Summary of Regression Results

Hypothesis	Regression Equation	α	*B*	R^2
H1: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will save (spend) a greater proportion of their tax refund.	%SAVE = -9.02TS+90.45+ ϵ	90.45***	-9.02***	0.142
H2: Consumers who exhibit characteristics typical of tightwads (spendthrifts) will use their refund in a more (less) responsible manner.	RESP = -0.53TS+7.25+ ϵ	7.25***	-0.53***	0.172
H3a: Spendthrift (tightwad) characteristics will be negatively (positively) associated with knowledge related to tax regulations and filing protocol.	KNOW = -0.18TS+5.23+ϵ	5.23***	-0.18*	0.012
H3b: Spendthrift (tightwad) characteristics will be positively (negatively) associated with confusion related to tax regulations and filing protocol.	CONFUSE = 0.20TS+3.00+ ϵ	3.00***	0.20**	0.014
Additional findings (not hypothesized): Credit score significantly and positively predicts the percentage of a tax refund consumers will save.	%SAVE = 7.38CS+35.48+ ϵ	35.48***	7.38***	0.100
Additional findings (not hypothesized): Spendthrift (tightwad) characteristics negatively (positively) predict credit score.	CS = -0.24TS+3.92+ ϵ	3.92***	-0.24***	0.047

Table 2 presents the estimated regression equation for the hypotheses. The alpha, and beta coefficients for the independent variables in the equation, are listed in the third and fourth columns, respectively. The adjusted R-square for equation is displayed in the last column. Values that are significant at the 1 (***), 5 (**), or 10 (*) percent levels are noted as such. For all equations, n = 194, except for the final equation capturing credit score (CS) where n = 174 since some participants were unable or unwilling to report this metric.

CONCLUSION

This study was conducted in comparison to similar research conducted in 1992, 2001, and 2008. The previous studies were done in response to major tax reforms within the United States. Tax law and policy has a substantial impact on taxpayers, in terms of their financial standing and resulting behaviors. While tax law can affect the spending habits of consumers, their overall behavior can also be attributed to their individual characteristics. Because spendthrifts are more likely to view their refund as a windfall – they spend a higher proportion it. Spendthrifts also have higher levels of confusion and lower credit scores. On the other hand, tightwads tend to save more of their refunds and have higher levels of tax knowledge. These behavioral findings support a tax policy that allows for refunds. However, in contrast to the findings by Bobek et al. (2007), tightwads in our study who receive a refund anticipate saving it or spending it responsibly, as opposed to viewing it as a windfall and spending it for enjoyment.

Tax law needs to be comprehensive enough for the government to achieve the funds necessary to meet all obligations, yet simple enough for the average consumer to understand. Confused tax filers are more likely to make mistakes, which slows the efficiency. If financial literacy is defined in terms of credit score,

responsible use, and tax knowledge, tightwads tend to show more characteristics of being financially literate due to higher levels of tax knowledge and higher level of responsible use and spendthrifts exhibit qualities of lower financial literacy with lower credit scores. Consumers tend to bear higher costs of tax preparation, in terms of software or outsourcing to a CPA firm. It is a balancing act for legislators to balance consumer costs of tax payments and tax preparation with revenue generation. Consumers will be willing to pay their fair share but must receive some sort of benefit. Government intention is for citizens to receive a tax refund, although not an excessive amount, and then to bring those funds back into the economy. By understanding these differences in consumer behavior, policy setters can consider the type and timing of a rebate or refund program that is meant to spur the economy, yet also contribute to taxpayers' financial well-being.

APPENDIX A: Construct Items and Measurement

Construct	Question / Items	Scale
Tightwad-Spendthrift	Spending money makes me happy. It is hard for me to deny myself the things I want. I have trouble limiting my spending. Sometimes I regret my how much money I have spent. I have difficulty spending money. * Parting with money makes me anxious* I think carefully about a purchase before I make it. * I only spend money on things I need. * *Items reverse-coded.	1 = Does not describe me at all / 7 = Describes me very much
Percentage of Refund Saved	Please estimate the percentage of this $3,000 refund you would spend or save. The total of both percentages must add up to 100 percent.	% SAVE _____ % SPEND_____
Responsible Use of Refund	Please categorize your planned use of the $3,000 refund as…	indulgent / responsible frivolous / sensible impractical/ practical
Tax Knowledge	I am knowledgeable about tax regulations. I feel confident completing my own tax returns without error	1 = Strongly disagree / 7 = Strongly agree
Tax Confusion	Thinking about the current U.S. tax regulations and rules, please indicate your level of understanding or confusion by completing the scale below.	I am very clear / I am very confused. Informed / I feel uniformed. Confident / I lack confidence
Credit Score	Please indicate your best estimate of your credit score:	350 – 579 / 580 – 669 / 670 – 739 / 740 – 799 / 800 -850 / I do not know / I would rather not say

REFERENCES

Agarwal, S., C. Liu, and N. Souleles. (2007). The reaction of consumer spending and debt to tax rebates -- evidence from consumer credit data. *Journal of Political Economy* 115(6): 986-1019. doi:10.3386/w13694

Alanis, K. (2019, February 12). Why your tax refund could be smaller this year - and why you might even owe money. Retrieved from https://www.newsobserver.com/news/nation-world/national/article226062400.html

Ameriks, J., A. Caplin, and J. Leahy. (2003). Wealth accumulation and the propensity to plan. *The Quarterly Journal of Economics* 118(3): 1007-1047.

Andriotis, A. (2019, March 04). Getting into the 800-credit score club is tough-Staying in is tougher. Retrieved from https://www.wsj.com/articles/getting-into-the-800-club-is-toughstaying-in-is-tougher-11551659604.

Arkes, H.R., C.A. Joyner, and M.V. Pezzo. (1994). The psychology of windfall gains. *Organizational Behavior and human Decision Processes* 59: 331-347.

Awanis, S., and C.C. Cui. (2014). Consumer susceptibility to credit card misuse and indebtedness. *Asia Pacific Journal of Marketing and Logistics* 26(3): 408-429.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 55; 179-211.

Berger, E., A.W. Butler, and E. Mayer. (2018). Credit where credit is due: Drivers of subprime credit. Retrieved from http://dx.doi.org/10.2139/ssrn.2989380.

Bhushan, P., and Y. Medury. (2013). Determining tax literacy of salaried individuals - an empirical analysis. *IOSR Journal of Business and Management, 10(6), 76-80.*

Bobek, D. D., R.C. Hatfield, and K. Wentzel. (2007). An investigation of why taxpayers prefer refunds: A theory of planned behavior approach. *Journal of the American Taxation Association*, 29(1), 93-111. doi:10.1521/jata.2007.29.1.93

Borodovsky, L. (2019, March 11). The Daily Shot: How Will Americans Spend Their Tax Refunds This Year? Retrieved from https://blogs.wsj.com/dailyshot/2019/03/11/the-daily-shot-how-will-americans-spend-their-tax-refunds-this-year/

Broda, C., and J. Parker. (2008a). The impact of the 2008 tax rebates on consumer spending: Preliminary evidence. *Northwestern University*, July 29.

Broda, C., and J. Parker. (2008b, August 15). Did the 2008 US tax rebates work? Retrieved from https://voxeu.org/article/did-2008-us-tax-rebates-work

Cvrlje, D. (2015). Tax literacy as an instrument of combating and overcoming tax system complexity, low tax morale and tax non-compliance. *The Macrotheme Review*, 4(3), 156-167.

Elkins, E. (2019, Mar 15). Here's the No. 1 reason why Americans are struggling to save money – and it's not debt. Retrieved from https://www.cnbc.com/2019/03/15/the-no-1-reason-why-americans-struggle-to-save-money-isnt-debt.html

Fallan, L. (1999). Gender, exposure to tax knowledge, and attitudes towards taxation; an experimental approach. *Journal of Business Ethics* 18 (2): 173-184.

Farrington, R. (2019, March 11). When to Expect My Tax Refund? The 2018-2019 Refund Calendar. Retrieved from https://thecollegeinvestor.com/840/when-to-expect-my-tax-refund/

Fernandes, D., J.G. Lynch Jr., and R.G. Netemeyer. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861-1883.

Haws, K.L., W.O. Bearden, and G.Y. Nenkov. (2011). Consumer spending self-control effectiveness and outcome elaboration prompts. *Journal of the Academy of Marketing Science*, 40(5), 695-710. doi:10.1007/s11747-011-0249-2

Hoch, S. J., and G.F. Loewenstein. (1991). Time-inconsistent preferences and consumer self-control. *Journal of Consumer Research*, 17(4), 492. doi:10.1086/208573

Huddleston, C. (2019, February 27). The Biggest Tax Reforms in U.S. History. Retrieved from https://www.gobankingrates.com/taxes/tax-laws/biggest-tax-reforms-in-us-history/#2

Kees, J., C. Berry, S. Burton, and K. Sheehan. (2017). An analysis of data quality: Professional panels, student subject pools, and Amazon's Mechanical Turk. *Journal of Advertising*, 46(1), 141-155.
Krause, K. (2000). Tax complexity: Problem or opportunity? *Public Finance Review*, 28(5), 395-414. doi:10.1177/109114210002800501

Lee, L., S. Frederick, and D. Ariely, D. (2006). Try it, you'll like it: The influence of expectation, consumption, and revelation on preferences for beer. *Psychological Science*, 17(12), 1054-1058.

Loudenback, T. (2019). Taxpayers are seeing smaller refunds across the US—here's how much the average person gets back in every state. *Business Insider* online, available at: https://www.businessinsider.com/tax-refund-average-by-state-2018-1.

Mankiw, N.G. (2000). The savers-spenders theory of fiscal policy. *American Economic Review*, 90(2), 120-125.

McAllister, K. (2019, January 20). To Raise Your Credit Score, Start by Understanding It. Retrieved from https://www.wsj.com/articles/to-raise-your-credit-score-start-by-understanding-it-11548010800

Modigliani, F., and C. Steindel. (1977). Is a tax rebate an effective tool for stabilization policy? *Brookings Papers on Economic Activity*, 1977(1), 175. doi:10.2307/2534259

Parker, J. A., N.S. Souleles, D. Johnson, and R. Mcclelland. (2013). Consumer Spending and the Economic Stimulus Payments of 2008. *American Economic Review*, 103(6), 2530-2553. doi:10.3386/w16684

Prelec, D., and G. Loewenstein. (1998). The red and the black: Mental accounting of savings and debt. *Marketing Science*, 17(1), 4-28.

Razman, A. A. L., and A.N. Ariffin. (2000). Tax Literacy among Taxpayers in Klang Valley. From: Madi, N.; Kamaluddin, A.; Janggu, T., Ibrahim, M.B.A.; Samah, A.B.A. (2010). Tax Literacy among Employees: Sabah and Sarawak's Perspective. *International Journal of Economics and Finance* 2 (1): 218-223.

Rick, S. I., C. E. Cryder, and G. F. Loewenstein. (2008). Tightwads and Spendthrifts. *Journal of Consumer Research* 34 (6): 767-782.

Scotchmer, S. (1989). Who profits from taxpayer confusion? *Economics Letters*, 29(1), 49-55. doi:10.1016/0165-1765(89)90172-9

Shapiro, M. D., and J. Slemrod. (2003). Consumer response to tax rebates. *American Economic Review*, 93(1), 381-396.

Silva, D. (2019, February 01). H&R Block vs. TurboTax (2019 Update). Retrieved from https://smartasset.com/taxes/hr-block-vs-turbotax

Smith, A., and E. Cannan. (2003). *The Wealth of Nations: Adam Smith*; introduction by Alan B. Krueger; edited, with notes and marginal summary, by Edwin Cannan. Bantam classic edition. New York, N.Y.: Bantam Classic.

Smith, E. P. (2017). *Federal Taxation Basic Principles 2018* (34th ed.). Riverwoods, IL: CCH Incorporated.

Spencer, M.K., and V. Chambers. (2012). National heuristic shift toward saving any form of tax rebate. *Accounting and the Public Interest*, 12(1), 106-136.

Steindel, C. (2001). The effect of tax changes on consumer spending. *Current Issues in Economics and Finance*, 7(11). doi:10.2139/ssrn.711385

Turner, K., and K. Manturuk. (2012). Individual, institutional, and structural determinants of household savings decisions. Working paper, The University of North Carolina.

Wiles, R. (2018, Mar 15). Experts' tips for spending your tax refund. *Arizona Republic* Retrieved from https://search.proquest.com/docview/2014457029?accountid=12390

Willis, L.E. (2009). Evidence and ideology in assessing the effectiveness of financial literacy education. *San Diego Law Review*, 46(2), 415-458.

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