GOLDILOCKS REBATES: COMPLYING WITH GOVERNMENT WISHES ONLY WHEN REBATE AMOUNT IS "JUST RIGHT"

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ABSTRACT

While tax rate policy decisions are sometimes made to affect the economy in some specific way, the empirical evidence surrounding whether federal income tax refunds predominantly stimulate consumer spending or saving remains contradictory. This study attempts to combine income tax research findings with research on mental accounting, to determine if an explicit statement of how the government would prefer a refund to be used is effective in influencing taxpayers' intended use of their refunds, controlling for the refund's timing. The authors developed and administered an experiment, using college students as subjects, to test whether tax refunds with a stated government preference for spending or saving will be used. The study also explores the types of saving, consuming and investing (including the payment of credit cards vs. investments in securities, and the amount spent on durable goods vs. monthly expenditures) that result from refunds of different sizes under both a lump sum and a monthly distribution pattern, given different government preferences. A within subjects experiment of spending decisions was used, and ANOVA results confirm that government direction has only a very limited but significant effect on taxpayer spending and saving choices. Conformance with government preference appeared only in a "sweet spot" of rebate levels that is not too high in amount and not too low. This pattern would make sense where the friction costs of conforming with government preferences is viewed as relatively high for low rebate amounts - outweighing the benefits, as in the case of all (smaller) monthly rebated amounts and in this case, the $300/year amount.

In 2008, the President and Congress enacted rebate legislation for the purpose of stimulating the economy with instructions for taxpayers to spend those refunds. To

validate our initial findings, a second instrument was disseminated to test how taxpayers spent their actual lump-sum rebate checks. The same pattern was observed in the spending the actual rebates as predicted by the experimental study, supporting those experimental findings.

INTRODUCTION

Tax refunds and rate reductions are a political mainstay, and are often justified as a means to increase savings or stimulate the economy (increase spending). Consequently, it is important to know whether and how the stated government intent affects spending versus saving, if at all. The evidence of whether tax refunds predominantly stimulate consumer spending or investment/saving in general is contradictory per Slemrod (2004), and may be affected by whether the refund is delivered as a lump sum or pro-rated monthly through e.g., reduced withholding tables (Chambers and Spencer, 2007 and 2008). This paper examines how closely taxpayers follow the government's stated objective of increasing savings or stimulating the economy through additional spending at four levels of tax rebates: $300, $600 $1,500 and $3,000. Additionally, this study explores the types of investment/saving and spending that result from refunds under both sets of government directions, controlling for the timing of the distribution.

LITERATURE REVIEW

In making tax cuts, presidents have predicted how those cuts would affect the economy. For example, George W. Bush (2001) defended his tax cut proposal, saying "In the short-term, the American consumer needs a hand… (with) credit card debt." Yet, there are few studies to determine whether government direction actually affects taxpayers use or timing of tax cuts and refunds. Slemrod and Bakija (2004) posited that "the degree to which people spend any increase in their after-tax incomes depends heavily on their perceptions of the state of the economy (and) cast doubt on the effectiveness of even persistent tax cuts as recession-fighting measures" (pp. 102-103).

Timing of tax distributions might also affect the amount spent vs. saved. Per Shapiro and Slemrod (1995), almost half the taxpayers receiving the George H. W. Bush 1992 decrease in tax withholding tables expected to spend most of the extra money immediately. This particular rebate changed the amount of federal individual income taxes withheld from paychecks, but the total yearly tax liability was unaffected. Hence, the extra money taken home was later due or reduced the year-end refund when

the tax return was filed. Economic theory leads us to expect that no change in consumption should have resulted. However, when the 2001 tax cut came as a lump sum of about $300 - $600, only about one quarter of the taxpayers expected to spend the refunds (Shapiro and Slemrod, 2003a, 2003b*)*. Parker (1999) found that taxpayers whose salaries exceed the Social Security limit spend a significant amount of the excess when it is received rather than averaging the excess over an entire fiscal year; whereas Souleles (2002) found that taxpayers responded to the 1981 gradual tax cuts by gradually increasing their consumption. Chambers and Spencer (2007) found that those receiving a yearly refund of either $300 or $600 in a lump sum saved more of that refund than if that same yearly amount were spread out in smaller, monthly installments.

Thaler's (1999) work sheds light on this behavior by asserting that individuals use a system of "mental accounting," informally labeling funds depending on whether they result from a regular income flow or from an irregular, lump-sum windfall. O'Curry (1997) finds that people match the flow with the use to which it is put. These accounts are evaluated by what Read, Loewenstein and Rabin (1998) label "choice bracketing," which include time periods within which accounts are mentally reconciled. The relative amount of the refund might also be a factor, with poorer households tending to have shorter reconciliation periods than wealthier households. Camerer et al. (1997) find that New York taxi cab drivers have daily earnings targets, while Heath and Soll (1996) find that MBA students have a weekly meals and entertainment budget, but a monthly clothing budget. (Wealthier) physicians reconcile their budgets yearly (Rizzo and Zeckhauser 1998).

Fogel (2009, p. 12-15) tested money from various frivolous and serious sources (e.g. raffle winnings v. job earnings) and found an interaction effect between amount and source of money. At smaller amounts, the source of income did not affect spending patterns. At moderate amounts of money, frivolous sources of income led to frivolous uses (and serious sources led to serious uses). And, at the largest amounts of money those differences disappeared. When comparing the effect of the explicitness of income source labels, Fogel (2009, p. 26) found that where source labels were explicit, the means of obtaining income determined the spending. Conversely, where the source of labels were ambiguous, the amount of the income dominated spending choices, adding that "[a]mount was also important at extremely high or low values, consistent with prior evidence that large windfalls are treated differently than other income."

As for corporations, Rice (1992) found that higher profit companies had worse tax compliance than less profitable companies. If corporations, especially wealthier ones, do not obey the government laws, the author(s) posit that individuals will be lax

in adhering to the government's intended use of a tax refund. Chambers (2005) found that the self-employed or those actively seeking to be self-employed often will elect to pay required quarterly estimated taxes in smaller, more frequent amounts if given the explicit option despite foregone interest and facing the same total tax liability. The documentation of this phenomenon is impressive. However, few practical tax policy uses have been developed to capitalize on this knowledge.

In February 2008, new tax rebates were approved, with some rebates significantly larger than in past years. President Bush urged consumers to spend the funds to stimulate the economy. According to the subsequent CCH tax briefing concerning the economic stimulus package:

> Recovery rebates (technically known as "advance credit payments"), reaching as high as $600 for individuals and $1,200 for married couples, will soon be deposited or mailed to an estimated 130 million Americans…. According to Ways and Means Chair, Charles Rangel, D-NY, "This stimulus package will send critical relief to millions of lower- and middle-income families whose economic situation dictates that they have no choice but to spend the rebate check and purchase goods and services to spur our economy."

This study developed and administered a survey instrument in an attempt to determine whether an explicit statement of how the government would prefer a refund to be used is an effective method for influencing taxpayers' intended use of their refunds, controlling for demographic differences, the size of the refund and the refund's timing.

HYPOTHESIS AND RESEARCH QUESTIONS

The author(s) hypothesize that explicit government direction for the uses for the refund will not make a significant difference (the null hypothesis), at four lump-sum rates of refunds - $300, $600, $1,500 and $3,000, controlling for the timing of the distribution:

Hypothesis: *Respondents receiving a lump sum hypothetical tax refund of $300 (or $600, $1,500 or $3,000) which the government expressly wishes them to spend will not spend significantly more of the refund than those*

receiving the same lump sum amount where the government expressly wishes that the taxpayer save it.

Saving is defined as either increasing assets and/or decreasing liabilities to increase net worth, consistent with Shapiro and Slemrod (1995). Short-term saving is included as spending, because while the amount is not spent immediately, it is expected to be spent before a 12-month period has elapsed, and thus is expected to stimulate the economy at the expense of net worth. A separate analysis is run to test whether including short-term saving as saving significantly changes the results for this hypothesis. A third analysis controls for the annual amount of the refund if distributed over 12 equal monthly installments. The results of these analyses for the hypothesis are expected to be insignificant (even if positive), with the results diminishing as the size of the refund increases, consistent with Rice (1992).

Respondents in Shapiro and Slemrod's (1995) study were asked if they intended to do one of three things with their 1992 rebates: "(A) spend, (B) save, (or) (C) repay debt," without considering whether the savings will last longer than, or less than, one year. The time horizon for saving might have a broad economic effect: affecting, e.g. the supply and demand curves for the price of marketable securities. Similarly, on the spending side, a one-time purchase of durable goods is different from an increase in regular monthly purchases. Consistent with Chambers and Spencer (2007 and 2008) such differences in spending and saving decisions are studied by asking 12 research questions. Specifically, research questions 1 -12 examine the percentages of refunds applied on a yearly, and monthly, basis respectively as: (1) & (7) investing in long-term savings vehicles like certificates of deposit and debt/equity securities; (6) & (12) saving for short-term goals like a vacation; (3) & (9) paying down long-term notes payable; (2) & (8) paying down credit card debt; (4) & (10) spending for monthly bills; or (5) & (11) spending on durable goods.

METHODOLOGY

Within-subjects experimental questionnaires concerning either the $300 or $600 rebate amount were distributed to 376 university students. (See Appendix A.) An additional 88 students were given the same instrument at the $1,500 yearly level; and 96 at the $3,000 level. However, since this was materially greater than historical tax cut amounts for most taxpayers, the $1,500 and $3,000 amounts are limited in this paper to a discussion of the sensitivity of the findings of this study. Students completing the instrument received extra credit equal to about 1% of their final grade. Initially, the

instrument was distributed during the 2006-2007 academic school year. In 2007-2008, the instrument was re-distributed, and those 2007-08 data are the focus of this paper, with a comparison to the 2006-07 results when they differ significantly.

The instrument provides for not only a hypothetical refund amount (either $300 or $600) but also a statement of how the government would like the taxpayer to use that sum – to either spend or save. Roughly half of the instruments first asked how much of the lump sum refund would be: (1) invested (in stocks, bonds, savings account, etc.), (2) used to pay off credit card debt, (3) used to pay off notes (e.g. mortgage, car note), (4) used up for regular monthly expenses, (5) used to buy a durable asset (e.g. car, boat, washing machine, furniture), and (6) used to save for an infrequent yearly expense (e.g. vacation, bigger holiday gifts). Next, the respondent was asked the same six questions, but changing the timing of a refund from lump sum to a smaller *monthly* amount equal to 1/12 of the lump sum amount. The other half of the instruments reversed the order – first asking about the use of a monthly amount and then a yearly lump-sum. Reversing the order allowed for testing whether order mattered. Finally, each of the instruments controlled for demographics and perceived business experience.

ANOVA was used to analyze the hypothesis, where items 1 through 3 are saving, and items 4 through 6 are spending, and then again with short-term saving included as saving rather than spending. Research items 1 – 12 were analyzed for frequency of payment at each refund level in percentage terms and with descriptive statistics. The descriptive statistics by refund level are available on request. Then, to refine the amount of the materiality limit, a subsequent instrument using numbers between $300 and $600 was administered and analyzed.

Subsequently, the 2008 rebate was announced and distributed. A second study was then performed to survey members of the Corpus Christi community, from September through November 2008, who actually received the 2008 economic stimulus rebate, with questionnaires distributed to 203 participants. Approximately half of the respondents were university students in business, education and social science classes; most of them completed the survey in order to receive extra credit equal to about 1% of the final course grade. The other half of the respondents filled out the survey in various community venues: on their way into Sam's Club, after church services at churches in different parts of town, before and after a meeting of the local American Association of University Women branch, or at a Rotary Club meeting. Most participants were given small, token gifts for the use of their time or were offered small financial gifts for non-profit organizations of their choosing.

This second instrument (see Appendix B) asked each respondent to indicate the size of the economic stimulus rebate and the month they received it. Then they were

asked how they allocated the funds, among the same six categories used in the first questionnaire. The instrument also asked for responses to questions on their demographics and financial status. The dollar amount for each of the primary six categories was converted to a percentage of the refund, as well as aggregated into the saving and spending categories. As with the experimental group, investing and paying off credit card debt and/or notes is considered as savings (items 1 through 3), and monthly spending and purchasing durable assets as spending (items 4 and 5). In the first analysis, saving for an infrequent expense (item 6) is added to savings. However, because it is only short-term savings, stimulating the economy by the end of the year, the analysis is run a second time to include it as spending instead of saving; in that second analysis "savings" indicates "long-term savings."

RESULTS AND DISCUSSION

The instrument was administered to 376 experimental respondents (after 13 invalid responses). These respondents averaged 3.4 years of business experience and some college education. Students perceived themselves to have moderate business experience. The amount of Adjusted Gross Income (AGI) was a significant factor when focusing on those with a non-zero AGI, but not significant when including those with zero AGI. The size of the effect for income earners only was very small (0.0003). No other control variables were found to be significant.

Surprisingly, the null hypothesis was rejected (we had predicted it would be accepted at all levels of refund), but only at one level of hypothetical lump sum refund amount, $600. To validate these findings, a second instrument was disseminated to test how taxpayers spent their actual 2008 economic stimulus lump-sum rebate checks. The same pattern was observed in the spending the actual rebates as predicted by the experimental study, supporting those experimental findings. These results are consistent with Fogel (2009), whose research indicated a spending pattern of windfall funds at moderate amounts that differed from spending at extremely high or low amounts.

When this instrument was first administered during the 2006-2007 academic year, similar, significant results were shown, but at the $300/year level *only* (Chambers & Spencer, 2007). That is, the experimental results appear to have been stable over both administrations of the instrument; however the *amount* at which significant compliance occurred shifted. Two major economic events occurred between the first and second administrations of the instrument that may make the consolidation of the results unwise: a significant jump in inflation - and in particular energy prices and food - was occurring, and an actual lump-sum tax rebate of similar amounts was declared, adding immediate

external validity to this instrument. Perhaps the inflation, and/or the looming reality of the rebate, accounts for this shift, but this is a matter for further study.

As with Shapiro and Slemrod's (2003a) study, most of a lump sum refund of $300 or $600 would have been saved, not spent. Specifically, $173 (58%) of the $300 and $374 (62%) of the $600 would be saved for longer than one year when the government requested the refund be *saved.* When the government requested the refund be *spent*, the amounts were $159 (53%) and $256 (43%), respectively. Of those instructed to spend the money, 13 (27%) saved all of a $300 lump sum refund compared to 14 (27%) of those instructed to save the money. Of those who received a $600 lump sum, 2 (5%) of those told to *spend* the refund saved it all, versus 13 (32%) of those instructed to *save* the refund, who would save it all. See Table 1 for ANOVA results at the $300 level for a lump-sum distribution, which indicates no significant difference. When the amounts of the tax rebates are distributed in smaller, monthly amounts, none of the differences are significant, consistent with the timing of a tax distribution changing the spending pattern of that distribution (Chambers and Spencer, 2008). When short-term saving is considered as saving, the p-value for difference between groups is not significant. Thus, the hypothesis is sustained at the $300 level.

The results for a $600 refund are presented in Table 2 below, and the hypothesis is rejected, with robust, significant results. The change in significance comes almost entirely from the group instructed to spend. Those instructed to save at the $300 and $600 levels save most of the refund: 57.8% and 62.4%, respectively, consistent with instructions. However, those instructed to spend the refund move from saving 53.0% at the $300 level to saving only 42.7% at the $600 level. This behavior at the $600 level reverts to largely disregarding the government's intended use when the refund level increases to $1,500. Where short-term saving is considered as saving at the $600 level, the p-value falls to .07. Paired with the findings at the $300 level, it seems taxpayers view short-term saving as spending, or else intend to save, but not for long.

Conformance with government preference appears only in a "sweet spot" of rebate levels that is not too high in amount and not too low. This pattern would make sense where the friction costs of conforming with government preferences is viewed as relatively high for low rebate amounts - outweighing the benefits, as in the case of all (smaller) monthly rebated amounts and in this case, the $300/year amount. At the higher end, somewhere above $600, taxpayers may value higher personal utility and/or responsibility for the disposition of *their* tax rebates over government direction as to how those rebates should be spent. To try to pinpoint the amount of the sweet spot, the

authors analyzed amounts between $300 and $600 but found no hypothetical breaking point *between* those two numbers.

Table 1. Amount Saved When $300 Hypothetical Refund Is Received Yearly

Groups	Count	Sum	Average	Variance	% of Refund	
Instructed to Spend	48	7635	159.0625	12792.19	53.00%	
Instructed to Invest	52	9020	173.4615	9478.959	57.80%	
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5175.014	1	5175.014	0.467567	0.495722	3.938112
Within Groups	1084660	98	11067.96			
Total	1089835	99				

Table 2. Amount Saved When $600 Hypothetical Refund Is Received Yearly

Groups	Count	Sum	Average	Variance	% of Refund	
Instructed to Spend	40	10250	256.25	34321.47	42.70%	
Instructed to Invest	40	14965	374.125	42329.34	62.40%	
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	277890.3	1	277890.3	7.250811	0.008671	3.963464
Within Groups	2989382	78	38325.41			
Total	3267272	79				

As shown in Tables 3 and 4, and consistent with Chambers and Spencer (2007), if individuals invest more when asked to invest rather than spend, that effect is not significant and remains insignificant at the $3,000 level, sustaining the hypothesis at these levels of refund.

Table 3. Amount Saved When $1,500 Hypothetical Refund Is Received Yearly						
Groups	Count	Sum	Average	Variance	% of Refund	
Instructed to Spend	42	34110	812.143	220046.5	54.10%	
Instructed to Invest	46	41520	902.6087	214104.2	60.20%	
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	179677.5	1	179677.5	0.828247	0.365324	3.951882
Within Groups	18656594	86	216937.1			
Total	18836272	87				

Table 4. Amount Saved When $3,000 Hypothetical Refund Is Received Yearly						
Groups	Count	Sum	Average	Variance	% of Refund	
Instructed to Spend	45	74520	1656	1176370	55.20%	
Instructed to Invest	51	89610	1757.059	911581.2	58.60%	
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	244151.8	1	244151.8	0.235776	0.628404	3.942304
Within Groups	97339339	94	1035525			
Total	97583491	95				

Refunds of $1,500 and $3,000, which have the potential to soundly affect the standard of living of respondents, were used to test the sensitivity of these findings. Similar to Rice (1992), as the amount of money to the taxpayer increases, the wishes of the government are heeded less. Even if these same yearly amounts are distributed to taxpayers in smaller, monthly payments, no significant differences are found. The results of spending for research questions 1-12 are presented in Table 5.

Table 5. How Hypothetical Refunds Will Be Used (rounded to nearest whole percent)								
Yearly Lump Sum of	$300		$600		$1,500		$3,000	
Government Instruction	Spend	Save	Spend	Save	Spend	Save	Spend	Save
n=	48	52	43	43	45	49	45	51
Investments in debt/equity	26%	25%	19%	24%	26%	27%	22%	30%
Pay Credit Cards	17%	16%	15%	23%	14%	21%	22%	17%
Pay Long-term Notes	10%	17%	11%	14%	15%	12%	11%	12%
Spend Mon. Expenditures	11%	13%	18%	13%	17%	10%	11%	14%
Spend on Durable Goods	14%	11%	15%	9%	12%	13%	17%	13%
Short-term Savings	22%	18%	22%	17%	16%	18%	17%	14%
Percent Saved/Pay Off Debt	53%	58%	45%	61%	55%	60%	55%	59%
Percent to Be Spent	47%	42%	55%	39%	45%	40%	45%	41%
Monthly Amount of	$25		$50		$125		$250	
n=	48	52	43	43	45	49	45	51
Investments in debt/equity	23%	25%	21%	21%	22%	21%	20%	30%
Pay Credit Cards	11%	12%	14%	20%	18%	19%	18%	18%
Pay Long-term Notes	10%	7%	5%	6%	16%	8%	15%	12%
Spend Mon. Expenditures	40%	35%	38%	43%	28%	35%	32%	22%
Spend on Durable Goods	4%	4%	10%	4%	11%	8%	8%	9%
Short-term Savings	12%	17%	12%	6%	5%	9%	7%	9%
Percent Saved/Pay Off Debt	44%	44%	40%	47%	56%	48%	53%	60%
Percent to Be Spent	56%	56%	60%	53%	44%	52%	47%	40%

At the $600 per year level, the greatest increase in spending - when taxpayers were encouraged to spend - was for durable goods. When encouraged to save, the greatest increase in saving was in the form of credit card debt reduction. This is arguably the most financially sound place to save, given the credit card interest rates in 2007-2008 compared to market returns. This choice reduces interest expense of future purchases, as opposed to investments in debt/equity which increase net worth without changing future spending patterns.

Actual rebates spent in the $300 to $600 range indicated that same pattern, with taxpayers ending compliance with government wishes for spending at $600. Recall that all actual rebates received came with the government encouragement to spend. At the $300 level, many split their rebates between two, or more, categories. At about $600,

people began to shift gradually via allocations towards their final rebate allocation/position. Although some never had a pattern that indicated taking direction from the government, some appeared to do so in that range above $300 (therefore material) but ending in self-determination at $600. Note in Table 6, showing the percentage of taxpayers who spent, shows that 40% of the time, the entire $300 was spent. The percentage for the $301 - $599 range is similar, but then at $600, the percentage of the rebate spent drops to 24% (a drop of 40%). It seems as if, at least for actual rebates, the sweet spot is not between $300 and $600, but, in aggregate on average *is* $600 (validating our lack of pinpointing an amount of hypothetical rebates between $300 and $600). Splitting between two categories remains the same. – Perhaps these respondents are "planner/sorters" (highly organized people who make lists, organize their closets, etc.), but that is left for further study. Those who spent none of the rebate made up the difference; that is, savings went up by approximately 40%.

Table 6. Number and Percent of Actual Rebate Allocations, $300 to $600 Range

# of observations	$300	Mid	$600
100% spent	14	8	12
Split	8	5	11
0% spent	13	9	26
% observations			
100% spent	40	36.36	24.49
Split	22.86	22.73	22.45
0% spent	37.14	40.91	53.06

The actual rebate mean for the $300 to $600 range was $465. For actual rebates in a $300 range (+/- 20%, an *a priori* grouping) around the $1,500 rebates, the rebate mean was $1,355. The pay-down of credit cards was almost twice the expected rate, with less spending on monthly expenses and durables. However, a limitation in the actual rebate spending is likely; while the authors used the same categories to test the hypothetical and actual allocation of rebates for internal validity, the actual rebate distribution was different than the hypothetical scenario: in the hypothetical scenario, the announcement of the rebate was simultaneous with its hypothetical receipt. In the actual scenario, there was much public discussion and notice of the forthcoming rebate. Some may have spent the rebate by charging either a durable or monthly expense in anticipation of receiving the check, and now were merely "paying it back." Therefore,

could be, given that the hypothetical results are generally validated by the actual results, that the hypothetical is more reliable than the actual, at least given the wording of the survey. (See Table 7.)

Table 7. Hypothetical v. Actual Rebate Allocations (rounded to nearest whole percent)

Rebate Type	Hypothetical	Actual	
Yearly Lump Sum of	$300	$600	$300-$600
Government Instruction	Spend	Spend	Spend
n=	48	43	106
Investments in debt/equity	26%	19%	18%
Pay Credit Cards	17%	15%	28%
Pay Long-term Notes	10%	11%	11%
Spend on Monthly Expenditures	11%	18%	9%
Spend on Durable Goods	14%	15%	11%
Short-term Savings	22%	22%	22%
Percent to Be Saved/Pay Off Debt	53%	45%	57%
Percent to Be Spent	47%	55%	43%

In that $1,200 to $1,800 range, investments are somewhat lower and payment of notes payable is somewhat higher, which would be expected where the investment market had soured (as it did between the time of the hypothetical questionnaire and the actual one). Paying off notes did yield a better return than investment than the market. Short-term savings is also higher, which may indicate a pent up demand to get back into the market once the taxpayer perceives that the market has bottomed out. Only two respondents received tax rebates of more than $2,500, so the comparison of savings patterns between the hypothetical and actual rebates for the $3,000 was not feasible.

CONCLUSIONS

ANOVA results confirm that government direction has only a limited effect on taxpayer spending and saving choices, only significant over some range around $600, given that this study examined the proposed spending from refunds of $300, $600, $1,500 and $3,000. Individuals significantly followed the government's stated

desire for the use of the money – spending or saving - *only* when the dollar amount is perceived as small, but not so small as to be perceived as not worth the effort. But, whatever the reason, the implication for federal tax policy is to *not* rely on governmental requests to have the desired effect on taxpayer behavior. It appears that the taxpayers' inclination is to not be dissuaded by governmental requests from making consumption, investment or saving choices they would perceive as being in their own self-interest once the rebate reaches the $600 level.

FUTURE DIRECTIONS

Given the quasi-experiment provided by the 2008 stimulus rebates, further analysis of how people actually did use their rebate funds will provide even better answers to the question of the effect of government wishes on consumer choices. These rebates – for those with positive AGI and also for those receiving Social Security - ranged from $300 to well above the $1,500 amount considered in this paper.

Another area for study is to examine in more depth the sensitivity of an individual's responses to the size of the refund, especially when examined relative to the household's assets and debts. A within-subject's study of responses to different rebate levels may yield a pattern of behavior that could shed more light on why no significance was found at the $300 level but that individuals did respond significantly to the government's request at the $600 level. It may be that economic theory of consumption behavior needs to be questioned for not being robust enough, especially if what is currently considered to be rational behavior is not the behavior actually observed. We may need to learn more about consumption decisions by studying current brain research and mental accounting theory.

President Obama recently signed another economic stimulus bill. Included was a tax rebate that is just now being distributed as small amounts in payroll checks, starting in spring 2009. This new quasi-experiment will provide an additional opportunity for researchers, to measure the impact of a tax rebate delivered in yet another way.

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APPENDIX A – EXPERIMENTAL INSTRUMENT

The first eight instruments were constructed as follows: Four instruments, including the one shown below, had the same wording but used yearly (followed by monthly) amounts of $300 ($25), $1,500 ($125), and $3,000 ($250) respectively. Using the same four amounts, another four instruments were administered changing only the instructions to indicate that "It is the government's hope that you will use this money to stimulate the economy (spend it)." The remaining eight instruments asked about a monthly rebate first and the lump-sum rebate second, to be able to test for order effects. Otherwise they were the same as the first eight instruments.

"What would you do if . . .?" (Fill in the amounts): One hypothetical proposed tax bill would result in *you* receiving $600.00 tax credit which for 2006 will automatically be mailed to you as a check from the IRS this November. *It is the government's hope that you will invest this money.*

APPENDIX A 1st Table	
If enacted, how much of this refund would you plan to:	
Invest (in stocks, bonds, savings account, etc)?	$
Use to pay off credit card debt?	$
Use to pay off notes (e.g. mortgage, car note, etc.)?	$
Use up about evenly every month for expenses? _____/mo. x 12 mo.=	$
Use to buy a durable asset (e.g. car, boat, washing machine, furniture)?	$
Use to save for an infrequent expense (e.g. vacation, bigger holiday gifts)?	$
Amount must total $600.00----------à	$

Another hypothetical tax proposal would result in *you* receiving $50.00/month after taxes; that is, your paychecks would go up $50.00/month with no additional tax due at the end of the year. *It is the government's hope that you will invest this money.*

APPENDIX A 2nd Table	
If enacted, how much of this monthly increase would you plan to:	
Invest (in stocks, bonds, savings account, etc.)?	$
Use to pay off credit card debt?	$
Use to pay off notes (e.g. mortgage, car note, etc.)?	$
Use up for regular monthly expenses?	$
Use to buy a durable asset (e.g. car, boat, washing machine, furniture)?	$
Use to save for an infrequent yearly expense (e.g. vacation, bigger holiday gifts)?	$
Amount must total $50.00----------à	$

APPENDIX A 3rd Table
Please list your: _____ Zip Code ____ Years of Business Experience Highest education level: ___ High School ___ Undergraduate ___ Graduate or above Occupation: _____ Gender: ___ Female ___ Male # Hours College-level Accounting _____ Industry where you work _____ You would classify your business experience level as: ___ High ___ Fairly high ___ Moderate ___ Fairly low ___ Low

THANK YOU FOR YOUR PARTICIPATION!!

APPENDIX B:
INSTRUMENT FOR ACTUAL 2008 STIMULUS RECIPIENTS

"What did you do . . .?"
(Fill in the amounts): In order to stimulate the economy, y*ou* received a payment from the government this year. This payment was automatically sent to you from the IRS.
In which month did you receive the funds:
May ___ June ___ July ___ August ___ September ___ October ___ November ___
Size of refund: $_____

APPENDIX B 1st Table	
How much of this refund have you used for each of these purposes (approximately)?:	
Invest (in stocks, bonds, savings account, etc.)?	$
Use to pay off credit card debt?	$
Use to pay off notes (e.g. mortgage, car note, etc.)?	$
Use up about evenly every month for expenses? _____/mo. x 12 mo.=	$
Use to buy a durable asset (e.g. car, boat, washing machine, furniture)?	$
Use to save for an infrequent expense (e.g. vacation, bigger holiday gifts)?	$
Amount must total $600.00----------à	$

APPENDIX B 2nd Table

Please list your: _____ Zip Code ____ Years of Business Experience
Highest education level: ___ Less than high school ___ High School
___ Undergraduate ___ Graduate or above
Occupation: _____ Retired? ___ yes ___ no
Gender: ___ Female ___ Male

Hours College-level Accounting _____

Industry where you work _____

You would classify your business experience level as:

___ High ___ Fairly high ___ Moderate ___ Fairly low ___ Low

Hours College-level Accounting _____

Industry where you work/worked_____

Yearly household income (AGI) _____ Age _____

You would classify your business experience level as:
___ High ___ Fairly high ___ Moderate ___ Fairly low ___ Low

THANK YOU FOR YOUR PARTICIPATION!!