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The effect of tax position and personal norms: An analysis of taxpayer compliance decisions using paper and software

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ABSTRACT

Tax Software has become the predominant format used to prepare and file taxes in the U.S. Compared to filing paper returns, tax software significantly changes the reporting environment. For example, tax software uses tax position indicators that update a taxpayer's tax position (i.e. whether they will receive a refund or owe additional tax) in real time as they enter their tax information. This study uses an experiment to investigate how tax compliance decisions made when using tax software with a tax position indicator differ from those made when using paper forms. In addition, we investigate the extent to which taxpayer attitudes (personal norms) impact taxpayer compliance decisions in these two environments (paper v. software). We find that taxpayers using software with a tax position indicator report more (less) cash revenue depending on their "tax due" ("refund") position, which has both beneficial and negative effects on tax compliance. In addition, we find that taxpayers are strongly influenced by their personal norms in their reporting decisions.

1. Introduction

According to the Internal Revenue Service, as of March 28 of 2014, 82 million returns were e-filed comprising about 91% of all returns (IRS.gov, 2014). Only 8.4 million returns (9% of all returns) were paper returns. Of the 82 million e-filers, > 33 million were from taxpayers who filed their own returns using tax return software (36% of all returns). This represents a major shift over the last decade and an almost 6% increase from 2013. While the increase in e-filings has served many IRS objectives (e.g., reduced processing costs (GAO, 1995) and increased customer service (IRS, 2014), little research has examined other intended and unintended consequences (Sutton, 2010).

Tax software changes the reporting environment taxpayers encounter when preparing their taxes. One change that most popular tax software packages include is a tax position indicator that updates a taxpayer's tax position (i.e. whether they will receive a refund or owe additional tax) in real time as they sequentially enter their tax information. This study argues that some theories previously advanced in research using paper filings need to be re-examined in the new and dominant software environment. One such theory is prospect theory. Tax researchers have typically used a taxpayer's refund/tax due status as surrogates for gain/loss frames for prospect theory applications. However the current environment alters two important elements in this research area: (a) tax software's continual-updating of tax position likely enhances its salience and (b) changes in tax regulations over recent years have increased the number of tax-filers in a refund position. Thus, one question is whether the combination of refund position with enhanced salience lead to greater tax compliance. We find it does. This study also finds that the enhanced salience of tax position in the software environment significantly interacts with taxpayer's personal norms while it does not in the paper environment.

The remainder of the paper is organized as follows: the next section contains the theory and motivation for our study including discussion of prior research and we present our hypothesis in this section. In the next section we describe our research experiment, data, and research design. Results and analysis are presented next. The paper ends with a summary, discussion of results, conclusions, limitations and avenues for future research.

2. Theory, motivation, and hypotheses

Prior tax compliance research conducted in a software environment is very limited. Three studies of note are Brink and Lee (1995), Noga and Arnold (2002) and Masselli, Ricketts, Arnold, and Sutton (2002). Brink and Lee (1995) examine whether the presence (or absence) of a prepayment-position (refund/tax-due) status bar in a tax preparation software influences taxpayers' decisions. Based on sample of 100 taxpayers they find that the presence of a prepayment position bar

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heightens framing effects in the sense that taxpayers in tax due positions report lower cash incomes than taxpayers in refund positions. This suggests a negative compliance effect. Noga and Arnold (2002) report somewhat different findings. They investigated how another element of tax software, embedded intelligent decision support systems, influence taxpayer reporting. Their interpretation of their findings is that tax preparation software helps taxpayers overcome tax complexity and thus improve tax reporting accuracy (a positive outcome effect). Masselli et al. (2002) examined audit diagnostics included in tax software packages and infer unintended consequences may manifest such that average taxpayers reduce claims for otherwise allowable deductions in the presence of audit diagnostics. Thus, these papers address very different features of tax software, and none have been replicated or extended.

Our study is different from prior studies in several important respects: Noga and Arnold (2002) and Masselli et al. (2002) investigated the effect of intelligent decision systems and audit diagnostics on taxpayers' reporting accuracy. The current study deals with the effect of tax position indicators on tax compliance. Thus, Brink and Lee (1995) is the closest study to the current study. In their study, taxpayers were categorized based on two attributes (i) presence or absence of a prepayment position bar and (ii) tax due or tax refund position. The taxpayers were required to estimate and report cash income (tips) received during the year. The exact amount of income was undocumented and unknown. Participants were told estimates could range from a low of $6500 to a high of $10,000. Respondents were paid a participation fee of $1 plus an increasing bonus amount depending on tax aggressiveness in their reporting decision (i.e. the bonus increased as reported income decreased). Unbridled aggressiveness was attenuate by the possibility of a random audit and penalty. Brink and Lee (1995) found that the presence of a tax position bar combined with the gain/loss frame (i.e., tax due or refund position) interactively influenced aggressive reporting. Specifically, taxpayers who could see the tax pre-payment position bar and were in a tax due position were the most aggressive in estimating and reporting cash income received (i.e. reported the lowest income). In must be noted however that the experiment's game situation encouraged (rewarded) tax aggressiveness; and arguably the game situation was one without moral overtones. Further, Brink and Lee (1995) did not measure personal tax morality.

In contrast, the current study deals with how use of tax software to prepare tax returns impacts taxpayer compliance vis-à-vis use of paper forms (i.e., not two versions of tax software, with one inconsistent with the current environment). As such, this is the first study that *explicitly* compares the use of paper forms with the use of tax software, both of which exist in today's environment. Furthermore, no implicit or explicit incentives are provided to participants to under (or over) report; and personal tax morality is included in analyses as a measured variable. In addition, no audit rates nor penalty information are provided. Also, the taxpayers are not required to estimate an amount; instead, they are told the exact amount of cash income that would need to be reported to be fully compliant. Consequently, any decision to under-report is a conscious decision to evade. This feature of our study is important in juxtaposition to Brink and Lee (1995) because participants who choose to under report in our study cannot rationalize their behavior as imperfect estimation; instead they must consciously choose to either report or underreport known income.

Thus, in review, this study extends the Brink and Lee (1995) study in two important respects. First, this study maintains the realism of the paper environment and the true current software environment. That is, the two conditions differ on how and when the tax due/refund position becomes known to the taxpayer. In the paper form, the taxpayer gathers all information upfront and then prepares the return; the tax position remains unknown until the initial preparation of the tax filing is complete. In the software environment, the software prompts for input of each information item sequentially, and the tax position is known before each item is entered, and notably before the cash income is entered. Second, this study considers the impact of personal norms of the taxpayer in the reporting decision. Clearly, the decision to comply or not comply is not just an economic decision but also a decision that depends upon the moral/ethical inclination of the taxpayer. This study's contributions in these three areas are described in the subsequent sections.

2.1. Taxpayer tax position and prospect theory

Prior research finds that the taxpayer's refund versus taxes due position affects the taxpayers' reporting decisions. For example, Dusenbury (1994) found that taxpayers are more willing to make risky decisions (i.e., exhibit greater tax reporting aggressiveness) when they had a payment due rather than a refund. Similarly, Jackson and Hatfield (2005) found that taxpayers who expect to owe additional taxes tend to take aggressive deductions but those who expect to receive a refund tended to take conservative deductions.

These findings are consistent with Kahneman and Tversky's (1979) prospect theory. Prospect theory suggests that, in general, people have a value function that is concave for gains but convex for losses. That is, people are more sensitive to prospective losses as compared to prospective gains of similar magnitude. This sensitivity to losses is called loss aversion; loss aversion tends to foster risk taking to avoid the prospective losses. On the other hand people are less sensitive to prospective gains and take less risks to further enhance gains. (Tversky & Kahneman, 1986). In an income tax context, taxpayers are arguably in a gain domain when they expect to receive a refund and a loss domain when they expect to owe additional tax.

2.2. Hypotheses

To summarize, two differences exist between using paper forms versus software to file income taxes that might be expected to impact taxpayers' aggressiveness to the point of evasion. First, for a tax position (refund versus tax due) to influence tax reporting, a taxpayer must know their tax position before making reporting decisions. A fundamental difference between using paper forms and tax software *during the tax preparation process* is the ability to know one's tax position. Taxpayers using paper forms are unaware of their tax position until the return is complete. If they choose to make changes, they must go back in the form to make those changes. That is, these taxpayers make an initial reporting decision for amounts filled out on their paper return without knowing their current tax position or how the amount they report will impact their ultimate tax position. In contrast, taxpayers using tax software are constantly made aware of their current refund/tax-due position and the impact of their reporting decision on the refund/tax due by the tax position indicator. That is, their tax position is communicated constantly by a visually salient position indicator.

Second, paper form taxpayers collect all necessary information upfront and then fill out the tax return by line number. In contrast, in the software environment, every screen of the tax return software prompts the taxpayer to remember and reconsider the information and then decide on the amount he/she wants to report. That is, the timing of the information provided to the taxpayer is different in the paper environment as compared to the software environment. By emphasizing the information provided to the taxpayers just before they make the reporting decision, the software environment accentuates the tax position.

Consequently, our first hypotheses is:

H1. Taxpayer position will differentially influence tax reporting when using tax reporting software compared to using paper forms.

H1a. Taxpayers using tax software will report significantly lower amounts of income in the ‘tax due’ position than will taxpayers using paper forms.