Do Taxpayers Respond to the Substantial Understatement Penalty Threshold? A Research Prospectus for an Analysis of Bunching Below the Penalty Threshold

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EXECUTIVE SUMMARY

The "economic deterrence" model of tax compliance suggests that higher penalties should produce more compliance.[2] However, there is relatively little real-world evidence that marginal changes to tax penalty rates affect compliance.[3] TAS plans to fill this gap by studying the extent to which taxpayers respond to the economic incentive provided by the substantial understatement penalty.

The substantial understatement penalty generally may apply to understatements on a return that exceed a threshold. For individuals, the threshold is the greater of $5,000 or 10 percent of the tax required to be shown on the return.[4] If the penalty affects compliance behavior, some taxpayers whose understatements would otherwise be just over the threshold should adjust their reporting so that their understatements are just below it. If they do, we should see relatively more understatements concentrated or "bunching" just below it, and fewer (*i.e.*, a crater) just above the threshold. TAS plans to analyze bunching to determine if taxpayers are responsive to the substantial understatement penalty threshold, and to identify the taxpayer segments that are most and least responsive.[5]

DISCUSSION

Under the "economic deterrence" model of tax compliance, people pay taxes to avoid penalties.[6] Tax compliance depends on the likelihood of getting caught and penalized and the size of the penalty. This model is overly simplified.[7]

Insights from behavioral science (*e.g.*, psychology and behavioral economics) suggest that other factors affect tax compliance. For example, people do what is easy, do what they think others are doing (*i.e.*, follow social norms), and cheat only to the extent they can maintain a positive self-image (*i.e.*, tax

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2   *See, e.g.*, Maurice Allingham & Agnar Sandmo, *Income Tax Evasion: A Theoretical Analysis*, 1 J. Pub. Econ. 323-38 (1972).

3   *See, e.g.*, Ann D. Witte & Diane F. Woodbury, *The Effect of Tax Laws and Tax Administration on Tax Compliance: The Case of the U.S. Individual Income Tax*, 38 Nat'l Tax J. 1, 7-9 (1985) (analyzing IRS data from the Taxpayer Compliance Measurement Program (TCMP)); Joel Slemrod *et al.*, *Cheating Ourselves: The Economics of Tax Evasion*, 21 J. Econ. Persp. 25, 38 (2007) (reviewing studies); James Andreoni, *et al.*, *Tax Compliance*, 36 J. Econ. Lit. 818, 842 (1998) (same).

4   IRC § 6662(d).

5   By contrast, an analysis of bunching could not be used to analyze negligence because the penalty for negligence is not triggered by a threshold.

6   *See* Maurice Allingham & Agnar Sandmo, *Income Tax Evasion: A Theoretical Analysis*, 1 J. Pub. Econ. 323-38 (1972).

7   Some have tried to tweak the model to solve the "compliance puzzle" of why, if deterrence is so important, we observe relatively high levels of compliance in the U.S. even though we have relatively few examinations and moderate penalty rates. *See, e.g.*, Mark Phillips, *Reconsidering the Deterrence Paradigm of Tax Compliance*, IRS Research Conference (2011); Jack Manhire, *Toward A Perspective-Dependent Theory of Audit Probability for Tax Compliance*, 33 VA. Tax Rev. 629 (2014). However, other factors appear to affect compliance. *See, e.g.*, Nadja Dwenger *et al.*, *Extrinsic and Intrinsic Motivations for Tax Compliance: Evidence from a Field Experiment in Germany*, 8 Am. Econ. J. 203, 204-05 (2016) (finding that about 20 percent fully paid a church tax, even though they knew the tax was not enforced). Similarly, the incidence of crime cannot be explained by the severity of the sanction. *See, e.g.*, Anthony Doob & Cheryl Webster, *Sentence Severity and Crime: Accepting the Null Hypothesis*, 30 Crime & Just. 143 (2003).

morale).[8] These findings are consistent with other lines of research, which suggest that trust for the IRS, norms, fairness, reciprocity, tax morale, complexity, and similar factors drive compliance.[9]

Indeed, when asked to identify the reasons for changes proposed on returns audited in connection with the National Research Program (NRP), IRS auditors listed 67 percent as inadvertent mistakes, 27 percent as computational errors or errors that flowed automatically, and only 3 percent of the errors as intentional.[10] Although the IRS does not regard this data as reliable, it is consistent with the findings of other studies (discussed above).[11] Even under the best of circumstances, it is difficult for auditors to determine a taxpayer's intent.[12] Nonetheless, this data does not support the notion that most noncompliance is intentional or that taxpayers will increase their reporting compliance to any significant extent in response to an increase in penalty rates.

However, the deterrence model might suggest that a costless way for the government to increase tax compliance (and government revenue) is to increase the penalties for noncompliance.[13] Indeed, some

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8   *See generally* National Taxpayer Advocate 2016 Annual Report to Congress 50-63 (Most Serious Problem: *Voluntary Tax Compliance*); National Taxpayer Advocate 2016 Annual Report to Congress vol. 3 (Literature Review: *Behavioral Science Lessons for Taxpayer Compliance*); Richard Thaler, *Misbehaving: The Making of Behavioral Economics* (2015).

9   *See, e.g.*, National Taxpayer Advocate 2007 Annual Report to Congress, vol. 2, 138-150 (Marjorie E. Kornhauser, *Normative and Cognitive Aspects of Tax Compliance*); National Taxpayer Advocate 2012 Annual Report to Congress vol. 2 1-28; Organization for Economic Co-operation and Development (OECD), Forum on Tax Administration, Small/Medium Enterprise (SME) Compliance Subgroup, *Understanding and Influencing Taxpayers' Compliance Behavior* (Nov. 2010); OECD, Forum on Tax Administration Subgroup, *Right from the Start: Influencing the Compliance Environment for Small and Medium Enterprises* (Jan. 2012); Tom Tyler, *Why People Obey the Law* (2006); Tom Tyler, *Legitimacy and Criminal Justice: The Benefits of Self-Regulation*, 7 Ohio St. J. Crim. L. 307-359 (2009); Erich Kirchler, *The Economic Psychology of Tax Behavior* (2007).

10   *A Closer Look at the Size and Sources of the Tax Gap: Hearing Before the S. Subcomm. on Taxation and IRS Oversight, S. Finance Comm.*, 109th Cong. 5 (July 26, 2006) (statement of Nina E. Olson, National Taxpayer Advocate). Moreover, some "intentional" errors result from the taxpayer's inability to pay. *See, e.g.*, Christina M. Ritsema *et al.*, *Economic and Behavioral Determinants of Tax Compliance: Evidence from the 1997 Arkansas Tax Penalty Amnesty Program*, IRS Research Conference (2003), https://www.irs.gov/pub/irs-soi/ritsema.pdf (surveying people who applied to an amnesty).

11   Government Accountability Office (GAO), GAO-06-208T, *Multiple Strategies, Better Compliance Data, and Long-Term Goals Are Needed to Improve Taxpayer Compliance* 12-13 (Oct. 26, 2005).

12   IRS, *Reducing the Federal Tax Gap: A Report on Improving Voluntary Compliance* 6 (Aug. 2, 2007) (stating "the IRS does not have sufficient data to distinguish clearly the amount of noncompliance that arises from willful, as opposed to unintentional, mistakes. Moreover, the line between intentional and unintentional mistakes is often a grey one").

13   Under an extension of the deterrence model, some have suggested that tax agencies can maintain compliance when they reduce audit rates without increasing penalties by trusting taxpayers — rewarding compliant taxpayers with fewer audits. *See* Juan P. Mendoza & Jacco L. Wielhouwer, *Only the Carrot, Not the Stick: Incorporating Trust into the Enforcement of Regulation*, 10 PLOS ONE 1, 4 (2015), https://www.ncbi.nlm.nih.gov/pubmed/25705898. However, an increase in penalty rates makes the use of trust less feasible. *Id.* at 15.

lab experiments suggest that maybe you can.[14] However, there is relatively little evidence that marginal changes to penalty rates have a positive effect on tax compliance in the real world.[15]

TAS will try to fill this gap by examining the extent to which the substantial understatement penalty affects tax reporting behavior by individuals. The substantial understatement penalty generally applies to understatements that exceed a specific threshold (*i.e.*, the greater of $5,000 or 10 percent of the tax required to be shown on an individual's return).[16] If the substantial understatement penalty affects compliance behavior, some taxpayers whose understatements would otherwise be just over the threshold should adjust their reporting so that their understatements are just below it.[17] If they do, we should see relatively more understatements bunching just below it, and fewer (*i.e.*, a crater) just above the threshold. We have the opportunity to use this type of analysis with the substantial understatement penalty only because it is triggered at a specific observable threshold.

Limitations

We can only observe understatements on returns that have been audited. Some returns are selected for audit at random as part of the NRP.[18] Others are selected because the IRS believes they contain significant understatements or because it wants to maintain a particular level of audit coverage for a given taxpayer segment.[19] To avoid the bias that might result from analyzing a nonrandom sample,

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14   *See, e.g.,* Calvin Blackwell, *A Meta-analysis of Incentive Effects in Tax Compliance Experiments, in Developing Alternative Frameworks for Explaining Tax Compliance* 97, 109 (James Alm et al. eds., 2010); James Alm *et. al.*, *Estimating The Determinants Of Taxpayer Compliance With Experimental Data*, 45(1) Nat'l Tax J. 107, 110 (1992) (finding experiments generally show that the "response to an increase in the penalty rate is positive but small and not highly significant.").

15   *See, e.g.,* Ann D. Witte & Diane F. Woodbury, *The Effect of Tax Laws and Tax Administration on Tax Compliance: The Case of the U.S. Individual Income Tax*, 38 Nat'l Tax J. 1, 7-9 (1985) (analyzing IRS data from the TCMP and finding the probability of civil and criminal fraud penalties had no significant effect or a negative effect; and the severity of criminal sanctions had no significant effect, except for a small positive effect on high-income self-employed individuals); Joel Slemrod *et al.*, *Cheating Ourselves: The Economics of Tax Evasion*, 21 J. Econ. Persp. 25, 38 (2007) ("there has been no compelling empirical evidence addressing how noncompliance is affected by the penalty for detected evasion, as distinct from the probability that a given act of noncompliance will be subject to punishment."); James Andreoni, *et al.*, *Tax Compliance*, 36 J. Econ. Lit. 818, 842 (1998) (finding only one real-world study (by Pommerehne and Frey) that suggested penalties may have a positive effect on compliance, but the effect was not statistically significant). *See also* Kimberly Varma & Anthony Doob, *Deterring Economic Crimes: The Case of Tax Evasion*, 40 Canadian J. Criminology 165, 175-76 (1998) (surveying Canadians and finding that "25.9% of those who thought that jail would be imposed for evasion… had evaded tax. In contrast, only 15.3% of those who thought nothing would happen had evaded tax."). Even if raising penalties could increase compliance, there may be a point beyond which penalty increases decrease compliance, potentially due to a reduction in the perceived legitimacy of the penalties or in the agency's enforcement of them. *See generally* Tom Tyler, *Why People Obey The Law* (2006) (discussing legitimacy).

16   IRC § 6662(d).

17   This threshold is analogous to a kink point or notch in the tax rate schedule. The point at which the marginal tax rate increases is called a kink point, whereas large jumps or stepped increases are generally called notches. For example, an income tax is notched if it requires a person to pay a higher average rate on all of his income when he reaches the next highest bracket, as is the case in Pakistan. *See* Henrik Kleven & Mazhar Waseem, *Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan*, 128 Qtrly J. Econ. 669, 670 (2013). Penalty thresholds are generally more similar to notches than to kink points. Notches may trigger a larger behavioral response than kink points, in part, because they are more salient. *See* James Sallee & Joel Slemrod, *Car Notches: Strategic Automaker Responses to Fuel Economy Policy* 3 (Nat'l Bureau Econ. Res. (NBER) Working Paper No. 16604, 2010), http://www.nber.org/papers/w16604.

18   IRM 4.10.2.7.1 (Feb. 11, 2016).

19   For a general discussion of audit selection methods, see IRM 4.1.3.1 (Aug. 10, 2012); GAO, GAO-16-103, *Certain Internal Controls for Audits in the Small Business and Self-Employed Division Should Be Strengthened* (2015), http://www.gao.gov/assets/680/674807.pdf. The extent to which the IRS can audit various types of taxpayers and issues may also depend on the staffing, training, and skill level of its workforce.

this study will probably focus on individual assessments resulting from NRP examinations of tax years 2010–2012, the latest years for which all of the relevant data is available.[20]

However, even an understatement identified and assessed by the IRS after an NRP examination could be different than the actual understatement. The IRS may assert understatements that are higher than the actual understatement due to an auditor's misunderstanding of the facts or the rules. On the other hand, examiners may not detect all of the understatements on a return, for example, because they are focused on a single issue.[21] This problem is less of a concern with NRP exams, which are supposed to identify the true tax liability, than with other types of audits, which are not.[22] However, even NRP exams do not identify all underreporting.[23]

When an understatement is otherwise close to the threshold, it is also possible that some auditors might try to avoid proposing assessments that would trigger the substantial understatement penalty, perhaps to avoid controversy and extra paperwork.[24] Others might try to find understatements large enough to trigger the penalty, especially if the taxpayer seems negligent or uncooperative.[25] In other words, if understatements are bunching at a particular range, the bunching could reflect a behavioral response to the substantial understatement penalty threshold by IRS employees, rather than by taxpayers.

Finally, we could observe understatements bunching in specific ranges due to the issue(s) being examined. For example, we might expect the disallowance of a first-time homebuyer tax credit of up to $6,500 to generate a disproportionate number of $6,500 understatements for tax year 2010, especially if an auditor is faced with a binary choice to either allow or disallow the credit.[26] By contrast, omitted income or overstated deductions can result in understatements of any amount, depending on the facts and circumstances. Thus, the structure of the tax code could produce bunching, even if the taxpayers in question are oblivious to the penalty or penalty threshold.

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20 As of this writing, tax years (TYs) 2010-2012 were the latest year for which the NRP weights were available.

21 Dispute resolution procedures may help to ensure that proposed assessments are accurate. However, the IRS may agree settle for amounts that are less than the true tax liability based on the hazards of litigation, and taxpayers may agree to excessively high settlements to avoid the cost and risks of litigation.

22 *Compare* IRM 4.10.2.7.1.1 (Feb. 11, 2016) ("The goal of an examination is to determine the 'substantially correct' tax liability") *and* IRM 4.10.2.3.1 (Feb. 11, 2016) (noting that Office and Field "Examiners are expected to examine all large, unusual and questionable items (LUQ). However, it is not intended that examiners should consider every possible issue") *with* IRM 4.22.1.3(4) (Sept. 6, 2017) (NRP "examiners will verify information on the sampled returns and capture all adjustments, no matter how small or whether the adjustments favor the IRS or the taxpayers.").

23 *See, e.g.*, Mark J. Mazur & Alan H. Plumley, *Understanding the Tax Gap*, 60 Nat'l Tax J. 569, 573 (2007) (noting that because NRP audits do not detect all underreporting, the IRS applies a multiplier to the underreporting to estimate the total amount that should have been reported). Of course, IRS auditors may also fail to detect overreporting.

24 *See* IRM 20.1.5.1.4 (Dec. 13, 2016) (requiring exam employees to obtain managerial approval to either assert or not assert the substantial understatement penalty where there is a substantial understatement of tax).

25 *See* IRM 20.1.5.1.1 (Dec. 13, 2016) ("An adjustment warranting a penalty may meet the threshold of a substantial understatement and also be attributable to the taxpayer's clearly negligent actions. The substantial understatement penalty under IRC § 6662(b)(2) should be developed as the primary position and the negligence penalty under IRC § 6662(b)(1) should be developed as the alternative position.").

26 The first-time homebuyer credit is a tax credit for the purchase of a new home after April 8, 2008, and before May 1, 2010, with certain exceptions. *See* IRC § 36; IRS, *First-Time Homebuyer Credit Questions and Answers: Basic Information*, https://www.irs.gov/newsroom/first-time-homebuyer-credit-questions-and-answers-basic-information (revised Jan. 27, 2010). The maximum credit was generally $7,500 or $8,000, but beginning November 7, 2009, a credit of up to $6,500 was available to a new category of homebuyers. *Id*.

The Substantial Understatement Penalty Rules

If a tax return is wrong and the taxpayer was negligent or disregarded a rule or regulation, the IRS may apply a 20-percent accuracy-related penalty to the underpayment.[27] Even if the IRS cannot show that the taxpayer was negligent or disregarded a rule or regulation, it may apply a 20-percent accuracy-related penalty to any underpayment that is due to a "substantial understatement,"[28] unless certain exceptions apply.[29]

The penalty does not apply if the taxpayer shows there is "substantial authority" for the tax treatment of the item.[30] There is substantial authority for the tax treatment of an item only if the weight of the authorities supporting the treatment is substantial in relation to the weight of authorities supporting contrary treatment.[31] Another way to avoid the penalty is to adequately disclose the position, typically on Form 8275, *Disclosure Statement*, Form 8275-R, *Regulation Disclosure Statement*, or on the return.[32] The adequate disclosure exception only applies if the taxpayer has a "reasonable basis" for the position

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27 IRC § 6662(a). An "underpayment" is W-(X+Y-Z), where W=the amount of income tax imposed; X=the amount shown as the tax by the taxpayer on his return; Y=amounts not shown, but previously assessed (*e.g.*, jeopardy assessments before filing) or collected without assessment (e.g., withholding tax, estimated payments or other cash payments received but not shown on the return); and Z=the amount of rebates made on the grounds that the tax imposed was less than the sum of X (tax shown), Y (prior withholding, payments, or assessments), and prior rebates. Treas. Reg. § 1.6664-2. For this purpose, X (the amount shown) is reduced by credits claimed for tax withheld under IRC §§ 31 and 33, estimated payments or other cash payments in excess of those actually made and for refundable credit claims (*e.g.*, the earned income tax credit (EITC)). *See* Treas. Reg. §§ 1.6664-2(c), (g)(Example 3). During TY 2010-12, the IRS may have believed a refundable credit claim could trigger an underpayment, even if it was frozen and not paid. *See*, *e.g.*, Program Manager Technical Advice (PMTA) 2010-01 (Nov. 20, 2009) and PMTA 2011-03 (Aug. 27, 2010). While it later revised this conclusion, taxpayers could not be sure if the IRS would freeze their claims or issue refunds. *See* PMTA 2012-16 (May 30, 2012). Moreover, frozen credit claims are treated as understatements for purposes of determining if the taxpayer has an understatement. While there were subsequent developments in this area, they should not be relevant to the years under study. *See*, *e.g.*, *Rand v. Comm'r*, 141 T.C. 376 (2013) (holding that refundable credit claims reduce X, but **not below zero**); Protecting Americans from Tax Hikes Act of 2015 (PATH Act), Pub. L. No. 114-113, Div. Q, § 209(d)(1), 129 Stat. 3040, 3084-85 (2015) (providing that effective for all returns filed after December 18, 2015, and all returns filed on or before December 18, 2015, for which the period of limitations specified in section 6501 had not expired as of that date, refundable credit claims reduce X (amount shown) and **can reduce it below zero**).

28 An understatement is defined as X – (Y - Z), where X = the amount of the tax required to be shown on the return, Y = the amount of the tax imposed which is shown on the return, and Z = any rebate made on the grounds that the tax imposed was less than the sum of Y (tax shown), prior withholding, payments, or assessments, and prior rebates. Treas. Reg. § 1.6662-4(a)(2)(ii). These terms have the same meanings as their analogues in the definition of an underpayment (described above, using slightly different variables), except that (1) Y (amount shown) is **not reduced** by excess claims for credits for withholding tax or other cash payments in an amount greater than actually made (but **is reduced** by refundable credit claims whether or not they are frozen); (2) items subject to an exception (*i.e.*, substantial authority or adequate disclosure exceptions) are treated as having been reported properly (both on the return and for purposes of computing rebates); and (3) the rebate computation is slightly different. Treas. Reg. §§ 1.6662-4(b)(4), -4(b)(5). An understatement is "substantial" if it exceeds the greater of: (A) ten percent of the tax required to be shown on the return for the tax year, or (B) $5,000. For corporations (other than an S-corporation or personal holding company), an understatement is "substantial" if it exceeds the lesser of: (A) ten percent of the tax required to be shown on the return for the tax year (or if greater, $10,000), or (B) $10,000,000. *See* IRC § 6662(d)(1).

29 If the IRS establishes that a taxpayer was both negligent and substantially understated the tax, the maximum accuracy-related penalty is capped at 20 percent of the understated tax. IRC § 6662(a).

30 IRC § 6662(d)(2)(B)(i) (reduction for substantial authority).

31 Treas. Reg. § 1.6662-4(d)(3)(i); Treas. Reg. § 1.6662-4(d)(2) (describing the standard as "less stringent than the more likely than not standard … but more stringent than the reasonable basis standard").

32 IRC § 6662(d)(2); Treas. Reg. § 1.6662-3(b)(3) (defining reasonable basis); Treas. Reg. § 1.6662-3(c) and -4(f) (discussing the disclosure exception); Rev. Proc. 2016-13, 2016-4 I.R.B. 290 (discussing alternative disclosure procedures for certain items).

and keeps adequate records.[33] However, the substantial authority and adequate disclosure exceptions do not apply to understatements resulting from a "tax shelter."[34] Tax shelters are broadly defined to include any partnership, entity, investment plan, or arrangement having "a significant purpose" of tax avoidance (*i.e.*, potentially any type of tax planning), diluting the benefit of disclosure.[35]

Finally, a taxpayer may avoid an accuracy-related penalty (including the substantial understatement penalty), if he or she can show the error was made in good faith and due to "reasonable cause."[36] However, this is a relatively narrow exception that is based on the facts and circumstances.[37]

If any of these exceptions apply to an item (*i.e.*, there is substantial authority, adequate disclosure, or reasonable cause for the taxpayer's treatment of an item), then it is treated as if it were properly shown on the return for purposes of computing the penalty.[38] Because of the relative ease with which the IRS can establish that a taxpayer made a substantial understatement (as compared to establishing negligence or disregard of a rule or regulation) and the significant uncertainty about whether a taxpayer will be able to show that an exception applies, taxpayers have an economic incentive to ensure that any understatement of tax does not exceed the substantial understatement threshold, even if there is some possibility that an exception might apply.

For individuals, an understatement is substantial if it exceeds the greater of $5,000 or 10 percent of the tax required to be shown on the return.[39] For example, if the correct amount of tax is $10,000 and an individual taxpayer reported $6,000, the penalty would not apply. Although the $4,000 understatement is more than ten percent of the correct tax, it is less than the fixed $5,000 threshold. Conversely, if the same individual reported a tax of $4,000, the substantial understatement penalty would apply. The $6,000 understatement is more than $5,000, which is the greater of the two thresholds.

For relatively high income taxpayers who owe more than $50,000 in tax, the operative threshold is 10 percent because 10 percent is more than $5,000 (10% x $50,000 = $5,000). For the same reason, $5,000 is the operative threshold for those who owe less than $50,000 in tax (*e.g.*, those with lower incomes or who are entitled to relatively large deductions or credits). Thus, because a taxpayer could

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33 Treas. Reg. § 1.6662-4(e)(2)(i) and (iii). The "reasonable basis" standard is "a relatively high standard of tax reporting, that is, significantly higher than not frivolous or not patently improper." Treas. Reg. § 1.6662-3(b)(3) (explaining the reasonable basis "standard is not satisfied by a return position that is merely arguable or that is merely a colorable claim. If a return position is reasonably based on one or more of the authorities set forth in § 1.6662-4(d)(3)(iii) (taking into account the relevance and persuasiveness of the authorities, and subsequent developments), the return position will generally satisfy the reasonable basis standard even though it may not satisfy the substantial authority standard…").

34 IRC § 6662(d)(2)(C) (reduction for substantial authority or adequate disclosure inapplicable to tax shelter items).

35 *Id*. For a discussion of the problems with leaving "a significant purpose" undefined, *see* National Taxpayer Advocate 2008 Annual Report to Congress vol. 2, § 1 (*A Framework for Reforming the Penalty Regime*).

36 IRC § 6664(c) (reasonable cause exception).

37 Treas. Reg. § 1.6664-4(b)(1) (further explaining "[c]ircumstances that may indicate reasonable cause and good faith include an honest misunderstanding of fact or law that is reasonable in light of all of the facts and circumstances, including the experience, knowledge, and education of the taxpayer. An isolated computational or transcriptional error generally is not inconsistent with reasonable cause and good faith. Reliance on an information return or on the advice of a professional tax advisor or an appraiser does not necessarily demonstrate reasonable cause and good faith. Similarly, reasonable cause and good faith is not necessarily indicated by reliance on facts that, unknown to the taxpayer, are incorrect. Reliance on an information return, professional advice, or other facts, however, constitutes reasonable cause and good faith if, under all the circumstances, such reliance was reasonable and the taxpayer acted in good faith.").

38 IRC § 6662(d)(2)(B) (understatement "reduced" by that "portion" for which there is substantial authority or adequate disclosure); IRC § 6664(c)(1) (reasonable cause exception for applicable "portion" of the understatement).

39 IRC § 6662(d)(1).

calculate whether the understatement penalty might apply, the penalty lends itself to bunching analysis, as opposed to the more subjective penalty for negligence.

Precedent for an Analysis of Bunching

Because the substantial understatement penalty does not apply unless a person's understatement exceeds a threshold, the distribution of understatements around the threshold can reveal whether the penalty affects reporting behavior. Other studies have suggested that if we see a disproportionate number of taxpayers reporting income near a threshold, such as a notch or kink point in the tax rate schedule (called bunching), we can conclude that they are responding to the economic incentive created by the marginal rate.[40]

To detect this type of bunching, researchers first divide the population into buckets or bins that represent fixed income ranges (*e.g.*, 0-$500, $500-$1,000 etc.) and then create a histogram showing how many taxpayers fall into each bin. If there are a disproportionate number of taxpayers in the bins near the threshold, we may conclude that taxpayers are adjusting their behavior (*e.g.*, earnings or reporting compliance) in response to it. Statistical tests can also confirm that the bin sizes are appropriate and that the bunching is unlikely to have occurred by chance.[41]

A number of studies have used bunching to analyze the behavioral response to the Earned Income Tax Credit (EITC) schedule. The EITC is a means-tested anti-poverty program that provides assistance to the working poor.[42] It boosts the economic incentive to earn income from work within certain ranges. One study found a disproportionate number of self-employed taxpayers' income bunching near the first kink point in the EITC schedule.[43] Although the self-employed are generally able to adjust their earnings in response to incentives more easily than wage earners, the study concluded that tax evasion

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40 *See*, *e.g.*, Emmanuel Saez, *Do Taxpayers Bunch at Kink Points?*, 2 Am. Econ. J. Econ. Pol. 180, 182 n4. (2010) (finding evidence of bunching around the first marginal U.S. tax rate threshold); Raj Chetty *et al.*, *Adjustment Costs, Firm Responses, and Micro vs. Macro Labor Supply Elasticities: Evidence from Danish Tax Records* (NBER Working Paper No. 15617, 2009), http://www.nber.org/papers/w15617 (reviewing tax data from Denmark to find evidence of bunching at the top marginal rate thresholds); Henrik Kleven & Mazhar Waseem, *Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan*, 128 Qtrly J. Econ. 669, 672 (2013) (finding "bunching below every notch [in Pakistan's income tax brackets] combined with missing mass (holes) above every notch… [and that these effects are] larger for self-employed individuals than for wage earners…"); Spencer Bastani & Håkan Selin, *Bunching and Non-Bunching at Kink Points of the Swedish Tax Schedule* (CESifo Working Paper No. 3865, 2012), https://ssrn.com/abstract=2101038 (estimating the taxable income elasticity at a kink point in the Swedish tax schedule using the bunching method). For a technical discussion of a similar methodology called "regression discontinuity," *see*, *e.g.*, David S. Lee & Thomas Lemieux, *Regression Discontinuity Designs in Economics*, 48 J. Econ. Lit. 281-355 (2010) (describing methods for analyzing of the effects of treatments based on the insight that those immediately above and below a threshold that triggers a treatment can be compared as if they were selected at random if there is no reason to expect they are significantly different in other important respects); Justin McCrary, *Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test*, 142 J. Econometrics 698–714 (2008) (developing a statistical test to gauge whether the distribution of people above and below a threshold is random or subject to manipulation).

41 *See Id.*

42 To claim the Earned Income Tax Credit (EITC) for 2012, a person's income could be no more than $50,270 if married with three eligible children. The EITC amount varies depending on the number of children and whether the taxpayer was married. *See Id.* For a discussion of refundable credits, including the EITC, and related compliance challenges, *see*, *e.g.*, *Improper Payments in the Administration of Refundable Tax Credits: Hearing Before the H. Subcomm. on Oversight of the Comm. on Ways and Means*, 112th Cong. (May 25, 2011) (statement of Nina E. Olson, National Taxpayer Advocate).

43 *See* Emmanuel Saez, *Do Taxpayers Bunch at Kink Points?*, 2 Am. Econ. J. Econ. Pol. 180–212 (2010).

could best explain the results.[44] Although EITC claimants are more likely to get tax preparation assistance from unregulated, unaffiliated preparers — the types of preparers who are most likely to make mistakes — these studies suggested that someone (perhaps a preparer) was responsive to the kinks in the rate schedule.[45] A follow-up study suggested that low income taxpayer's incomes bunch around thresholds that maximize all of the refundable credits, rather than just the EITC.[46]

Another study found income bunching near a notch applicable to the saver's credit.[47] It concluded that some taxpayers who were claiming the saver's credit manipulated their incomes to qualify.[48] Another found that automakers responded to gas guzzler taxes by producing a disproportionate number of cars with fuel economy just above the notches in the tax rate schedule that would minimize the tax.[49] A study out of the U.K. found bunching by small businesses with turnover just below the threshold at which they would be required to register for the value added tax (VAT).[50]

Another study found a small amount of income bunching near the threshold in the tax rate schedule that subjects Social Security benefits to tax, but only by self-employed individuals.[51] It concluded that the rules are so complex that most people (other than the self-employed) do not recognize this threshold. Although the Alternative Minimum Tax (AMT) is complicated, another study found bunching near

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44 *See* Emmanuel Saez, *Do Taxpayers Bunch at Kink Points?*, 2 Am. Econ. J. Econ. Pol. 180–212 (2010). *See also*, Elira Kuka, *EITC and the Self-Employed: Real or Reporting Effects?* 42 Pub. Fin. Rev. 691–719 (2013). Subsequent research used an analysis of bunching to conclude that the EITC has a significant impact on reported earnings in areas of the country where knowledge about the EITC schedule is more widespread and preparers are readily available. *Compare* Raj Chetty and Emmanuel Saez, *Teaching the Tax Code: Earnings Responses to an Experiment with EITC Recipients* (NBER Working Paper No. 14836, 2009)), http://www.nber.org/papers/w14836.pdf (finding that having preparers educate taxpayers about EITC incentives did not increase bunching around the EITC kink points), *with* Raj Chetty, John N. Friedman, and Emmanuel Saez, *Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings*, 103 Am. Econ. Rev. 2683–2721 (2013), http://dx.doi.org/10.1257/aer.103.7.2683 (finding geographic and social proximity to peers (and preparers) with knowledge of the EITC kink points affected bunching around EITC kink points).

45 *See* Kara Leibel, IRS, Pub. 5161, *Taxpayer Compliance and Sources of Error for the Earned Income Tax Credit Claimed on 2006–2008 Returns* 41 (Aug. 2014) (finding that most EITC claimants use a preparer, that unenrolled return preparers are the most common type of preparer chosen by EITC claimants, and that unenrolled preparers are also the most error prone). *See also* National Taxpayer Advocate 2002 Annual Report to Congress 216-230 (finding higher rates of error among unenrolled preparers). In some cases, preparer fraud is an issue. *See*, *e.g.*, National Taxpayer Advocate 2012 Annual Report to Congress 68-94. For further discussion of the effect of preparers on compliance, *see*, *e.g.*, National Taxpayer Advocate 2007 Annual Report to Congress vol. 2., 2-74 (Leslie Book, *Study of the Role of Preparers in Relation to Taxpayer Compliance with Internal Revenue Laws*).

46 Jacob Mortenson & Andrew Whitten, *How Sensitive Are Taxpayers to Marginal Tax Rates? Evidence from Income Bunching in the United States* 3 (Jan. 2016), https://www.aeaweb.org/conference/2016/retrieve.php?pdfid=1486. This study did not analyze the effect of preparers.

47 Shanthi Ramnath, *Taxpayers' Responses to Tax-based Incentives for Retirement Savings: Evidence from the Saver's Credit Notch*, 101 J. Pub. Econ. 77–93 (2013). The saver's credit is a tax credit for using certain retirement savings vehicles. IRC § 25B. It provides larger credits to those with smaller adjusted gross incomes. *Id.*

48 This study suggested that taxpayers with paid preparers were more likely to claim the credit, but did not otherwise analyze the effects of preparers. Shanthi Ramnath, *Taxpayers' Responses to Tax-based Incentives for Retirement Savings: Evidence from the Saver's Credit Notch*, 101 J. Pub. Econ. 77, 82 (2013).

49 James Sallee & Joel Slemrod, *Car Notches: Strategic Automaker Responses to Fuel Economy Policy* (NBER Working Paper No. 16604, 2010), http://www.nber.org/papers/w16604.

50 Li Liu & Ben Lockwood, *VAT Notches* (Nat'l Tax Assoc. 108th Annual Conf. Proc., Apr. 23, 2015), https://www.ntanet.org/wp-content/uploads/proceedings/2015/023-lockwood-vat-notches.pdf.

51 Leonard Burman *et al.*, *Older Taxpayers' Response to Taxation of Social Security Benefits*, IRS-Tax Policy Center Research Conference (June 20, 2013), https://www.irs.gov/pub/irs-soi/14rptaxationofsocialsecuritybenefits.pdf. Social Security benefits are only partially subject to tax. Over certain income ranges, taxpayers must include in their taxable income $0.50-$.85 of their social security benefits for every additional dollar of other taxable income. IRC § 86. These rules create kink points in the marginal rate schedule.

the threshold at which people are subject to the AMT.[52] It observed that the behavioral response was largest for the self-employed.[53] It attributed the bunching to changes in both real economic activity and misreporting.[54]

METHODOLOGY

Gap Analysis

TAS plans to analyze the distribution of assessments for TYs 2010-2012 that resulted from examinations of returns selected at random as part of the NRP.[55] We may compute the gap between the assessed understatement and the substantial understatement penalty threshold using a methodology similar to the one employed by the authors of the AMT study (discussed above).[56] The AMT threshold is different for each person depending on what items are on the return, making it difficult to select an income threshold to study. The AMT study addressed this problem by analyzing the gap between each individual's AMT and regular tax to determine how close each person was to the threshold.[57] Because the substantial understatement threshold depends on how much tax is required to be shown on a person's return (*i.e.*, an amount that varies from person to person, just like the AMT), TAS's study may use a similar gap analysis to determine how close taxpayers are to the substantial understatement threshold that would apply to their returns.

To apply a gap analysis, TAS would first compute the substantial understatement threshold applicable to each return (*i.e.*, the greater of $5,000 and 10 percent of the tax required to be shown). Next, we would subtract the applicable substantial understatement threshold from the understatement to compute the gap between the understatement and the threshold for each return. Positive gaps would represent understatements above the threshold, and negative gaps represent understatements below the threshold.

Next, we would sort the understatement gaps into bins (*e.g.*, $0-$99, $100-$199, $200-$299, etc.) and plot the bins on histograms to detect any visual evidence of bunching.[58] We would consider adjusting the bin size based on the amount of variation in the data, using larger sizes for groups with more

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52 *See* Donald Bruce & Xiaowen Liu, *Tax Evasion and Self-Employment in the US: A Look at the Alternative Minimum Tax*, IRS Research Conference 165-179 (2015), https://www.irs.gov/pub/irs-soi/14rescontaxevasion.pdf. The Alternative Minimum Tax (AMT) requires taxpayers to compute their taxes twice – once under the regular tax rules and again under the AMT rules. If the "tentative minimum tax" liability exceeds the regular tax liability, the taxpayer pays the difference as AMT. *See* IRC § 55.

53 *Id.*

54 *Id.*

55 These were the latest tax years for which the NRP weights were available. Because TAS plans to analyze assessments, we will probably not analyze cases closed without a change or that have not yet resulted in an assessment because of a pending appeal.

56 *See* Donald Bruce and Xiaowen Liu, *Tax Evasion and Self-Employment in the US: A Look at the Alternative Minimum Tax*, IRS Research Conference 165-179 (2015), https://www.irs.gov/pub/irs-soi/14rescontaxevasion.pdf.

57 *Id.*

58 *See* Justin McCrary, *Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test*, 142 J. Econometrics 698–714 (2008). We could use the R software, executing package "rdd," as documented by Drew Dimmery, *Regression Discontinuity Estimation* (Mar. 14, 2016), https://cran.r-project.org/web/packages/rdd/rdd.pdf.

variation.[59] Finally, we would apply a test to determine if any apparent bunching immediately below the threshold is statistically significant or due to random variations.[60]

As an example, if the amount of tax required to be shown is $60,000 and the amount actually shown is $52,000, the understatement is $8,000 ($60,000–$52,000) and the threshold is $6,000 (the greater of $5,000 and 10%x$60,000). The gap between the understatement and the threshold is $2,000 ($8,000–$6,000). This return would be displayed on the histogram in the bin containing understatement gaps of $2000. If, instead, the amount shown were $56,000, then the understatement would be $4,000 ($60,000–$56,000), the threshold would be $6,000 (the greater of $5,000 and 10%x$60,000), and the gap would be -$2,000 ($4,000–$6,000). This return would be in the bin containing understatement gaps of -$2000.

Separate Analysis of Various Taxpayer Segments

TAS plans to analyze various taxpayer segments to determine if some are more responsive to the penalty threshold than others. Specifically, we plan to analyze segments claiming the EITC, sole proprietors, those who used a preparer, and those with high levels of income for the following reasons:

- Studies (discussed above) suggest that self-employed taxpayers have a greater propensity than other taxpayers to adjust their tax reporting behavior in response to economic incentives such as thresholds applicable to marginal tax rates, the EITC, the taxation of Social Security benefits, and for triggering the AMT.[61] For this reason, they could also be more responsive to the economic incentives provided by the substantial understatement penalty threshold than other taxpayers.

- Studies suggest that some taxpayers adjust their behavior to claim the maximum EITC.[62] If EITC claimants change their behavior in response to the economic incentive provided by the EITC thresholds, they could be similarly responsive to the substantial understatement penalty

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59 *See* Justin McCrary, *Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test*, 142 J. Econometrics 698–714 (2008).

60 *Id*. McCrary describes a test to detect manipulation of a "running variable" in a "regression discontinuity" design. In this case, the understatement gap is the running variable. The McCrary test first creates a histogram where no one bin contains points both to the left and to the right of the threshold or break point. Then it uses local linear regression — trend lines on each side of the threshold — to provide an estimate of the density and slope of the understatement gap on each side. It also computes the bandwidth to use for these regressions (*i.e.*, how long should regression lines be) using the method described by Guido and Kalyanaraman. *See* Imbens, Guido and Karthik Kalyanaraman, *Optimal Bandwidth Choice for the Regression Discontinuity Estimator* (NBER Working Paper No. 14726, 2009). Finally, the test measures whether the differences in the density of the substantial understatements gaps on the left and right-hand sides of the threshold are statistically significant.

61 *See* Emmanuel Saez, *Do Taxpayers Bunch at Kink Points?*, 2 Am. Econ. J. Econ. Pol. 180 (2010) ("We find clear evidence of bunching around the first kink point of the Earned Income Tax Credit but concentrated solely among the self-employed."); Elira Kuka, *EITC and the Self-Employed: Real or Reporting Effects?*, 42 Pub. Fin. Rev. 691–719 (2013) (concluding that real labor supply responses of the self-employed are similar to those of salaried workers, but that they exhibit greater bunching due to misreporting); Leonard Burman *et al.*, *Older Taxpayers' Response to Taxation of Social Security Benefits, IRS-Tax Policy Center Research Conference* 3 (June 20, 2013), https://www.irs.gov/pub/irs-soi/14rptaxationofsocialsecuritybenefits. pdf ("We find no evidence of bunching at or around the thresholds [at which Social Security benefits become taxable] for the population as a whole, and only a very small response for single self-employed taxpayers who have previously been found to be more sensitive to changes in tax rates…"); Donald Bruce & Xiaowen Liu, *Tax Evasion and Self-Employment in the US: A Look at the Alternative Minimum Tax*, IRS Research Conference 165 (2015), https://www.irs.gov/pub/irs-soi/14rescontaxevasion.pdf ("We find the bunching created by self-employed individuals locates further away from the AMT threshold than the bunching created by wage earners, which suggests that the self-employed act more aggressively to avoid the AMT."); Henrik Kleven & Mazhar Waseem, *Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan*, 128 Qtrly J. Econ. 669, 672 (2013), http://eml.berkeley.edu/~saez/course/kleven-waseem_qje2013.pdf (finding "bunching below every notch [in Pakistan's income tax brackets] combined with missing mass (holes) above every notch…[and that these effects are] larger for self-employed individuals than for wage earners…").

62 *See, e.g.*, Raj Chetty, John N. Friedman, & Emmanuel Saez, *Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings*, 103 Am. Econ. Rev. 2683–2721 (2013), http://dx.doi.org/10.1257/aer.103.7.2683.

threshold.

■ Preparers can have a wide range of effects on compliance depending on the circumstances.[63] Preparers might educate taxpayers about the substantial understatement penalty threshold. Some taxpayers may use a preparer to avoid making an understatement. Others may use a preparer to minimize their taxes and to ensure that any understatement is not so severe as to trigger a penalty.[64]

■ High income taxpayers might be more likely (than lower income taxpayers) to be engaged in economic activities that allow for a wider range of reasonable reporting positions.[65] Some of these taxpayers might try to ensure that debatable positions would not push them over the substantial understatement threshold.

CONCLUSION

Although it may be convenient to assume that people are motivated primarily by money, there is relatively little real-world evidence that marginal changes to accuracy-related penalty rates affect tax reporting compliance. If taxpayers know about the substantial understatement penalty and try to avoid it, then some who might otherwise have an understatement just above the threshold should reduce their underreporting so that they are just below the threshold. TAS will try to determine whether they do, and if so, which taxpayer segments are most responsive.

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63 For a general discussion of the influence of preparers on sole proprietors and EITC claimants, *see, e.g.*, National Taxpayer Advocate 2007 Annual Report to Congress vol 2., 2-74 (Leslie Book, *Study of the Role of Preparers in Relation to Taxpayer Compliance with Internal Revenue Laws*). Some research suggests preparers enhance compliance with unambiguous rules, but reduce it with respect to ambiguous ones. *See* Steven Klepper, Mark Mazur, and Daniel Nagin, *Expert Intermediaries and Legal Compliance*: The Case of Tax Preparers, 34 J. L. AND ECON. 205 (1991). *See also* Kim M. Bloomquist, Michael F. Albert, and Ronald L. Edgerton, *Evaluating Preparation Accuracy of Tax Practitioners: A Bootstrap Approach, Proceedings of the 2007 IRS Research Conference* 77 (2007) (finding preparers reduce math errors, but increase the incidence of potential misreporting). Other research suggests preparers make frequent errors in a wide variety of areas. *See, e.g.*, GAO, GAO-02-509, *Tax Deductions: Further Estimates of Taxpayers Who May Have Overpaid Federal Taxes by Not Itemizing* (2002) (finding in 1998 about one million taxpayers overpaid by failing to itemize even though about half used a preparer); Treasury Inspector General for Tax Administration (TIGTA), Ref. No. 2003-40-046, *Analysis of Statistical Information for Returns with Potentially Unclaimed Additional Child Tax Credit* (Jan. 31, 2003) (finding about 230,000 returns filed by paid preparers in 2002 where taxpayers appeared eligible for Additional Child Tax Credits they did not claim); Janet Holtzblatt and Janet McCubbin, *Issues Affecting Low-Income Filers, in The Crisis in Tax Administration* 148, 159 (Henry J. Aaron and Joel Slemrod eds., 2004) (observing that about two-thirds of EITC returns, which have high levels of noncompliance, were prepared by paid preparers); GAO, GAO-06-563T, *Paid Tax Return Preparers: In a Limited Study, Chain Prepares Made Serious Errors* 5, 23 (Apr. 4, 2006) (finding preparers made significant mistakes on 17 of the 19 returns prepared for GAO employees posing as taxpayers, including the omission of income on ten); TIGTA, Ref. No. 2008-40-171, *Most Tax Returns Prepared by a Limited Sample of Unenrolled Preparers Contained Significant Errors* 2 (Sept. 3, 2008) (finding preparers made mistakes on 17 of the 28 returns prepared for TIGTA employees posing as taxpayers, including six willful or reckless errors).

64 For further discussion of various types of influences, *see, e.g.*, National Taxpayer Advocate 2007 Annual Report to Congress vol 2., 59-63 (Leslie Book, *Study of the Role of Preparers in Relation to Taxpayer Compliance with Internal Revenue Laws*).

65 Perhaps for this reason, high income taxpayers may even take more aggressive positions after being told they are likely to be audited. *See* Joel Slemrod *et al.*, *Taxpayer Response to an Increased Probability of Audit: Evidence from a Controlled Field Experiment in Minnesota*, 79 J. PUB. ECON. 455, 455 (2000) (finding that the reported tax liability of the high income taxpayers fell sharply relative to the control group, after being informed the returns they were about to file would be would be "closely examined").

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