PREDICTIVE ANALYTICS AND THE TAX CODE

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ABSTRACT

Congress last reformed the nation's current tax penalty regime approximately three decades ago, long before the rise of big data and the advent of predictive analytics. With predictive analytics now gaining preeminence and its accuracy constantly improving, it is time for Congress to weave this technological innovation into the fabric of the Internal Revenue Code and, more specifically, the civil tax penalty regime. Doing so would enhance taxpayer compliance, augment transparency, and simultaneously ease many administrative burdens commonplace under the tax law.

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INTRODUCTION

Ever since Congress introduced the income tax in 1913,[1] securing taxpayer compliance has been a routine challenge. In ingenious ways, taxpayers have conceived a myriad of machinations to shirk their civic duties.[2] Courts have held many taxpayers' tax-saving maneuvers to be within the bounds of the law;[3] however, in numerous instances, the judiciary has taken a contrary stance, ruling taxpayers' practices to be negligent,[4] fraudulent,[5] and, in other cases, criminal in nature.[6]

1. Revenue Act of 1913, Pub. L. No. 63-16, § II, 38 Stat. 114, 166-81.

2. Taxpayer shenanigans are not a new phenomenon. Since the advent of civilization, taxpayers have devised creative maneuvers to minimize and, in some cases, escape their civil tax liability. For a historical and detailed exploration of the facile ways in which taxpayers have sought to skirt their tax obligations, see generally MICHAEL KEEN & JOEL SLEMROD, REBELLION, RASCALS, AND REVENUE (2021).

3. By way of example, consider the case of *Chamberlin v. Commissioner*, 207 F.2d 462 (6th Cir. 1953), *cert. denied*, 347 U.S. 918 (1954). In *Chamberlin*, to avoid corporate distributions being treated as dividends, the company issued preferred stock to its shareholders in a manner that qualified for tax-free treatment. *Id.* at 465-66. The shareholders then sold this preferred stock to an accommodation party and secured capital gains. *Id.* at 466. Next, the company redeemed the purchased preferred stock from the accommodation party. *Id.* The Sixth Circuit upheld the legitimacy of this highly orchestrated arrangement. *Id.* at 472.

4. *See, e.g.*, Kramer v. Comm'r, 121 T.C.M. (CCH) 1127 (2021) (deeming a negligence penalty applicable when taxpayers failed to report "significant amounts of income from interest and from pensions and annuities . . . in conjunction with their failure to provide any explanation for omitting that income from their return, suggest[ing] that they neither made a reasonable attempt to comply with the internal revenue laws nor exercised reasonable care in the preparation of their return").

5. *See, e.g.*, Harrington v. Comm'r, 122 T.C.M. (CCH) 116 (2021) (deeming a fraud penalty applicable when taxpayers used various fictitious companies and overseas accounts to disguise their receipt of taxable income).

6. *See, e.g.*, United States v. Posner, 764 F.2d 1535 (11th Cir. 1985) (holding a taxpayer subject to a number of criminal sanctions when, in conspiracy with an appraiser, the

To keep taxpayers' tax-saving strategies in check, Congress has instituted an elaborate tax penalty regime.[7] The general principle that underlies this regime, known as the deterrence model,[8] is as follows: the greater the tax infraction, the more onerous the penalty imposed.[9] The driving force behind this principle is that most taxpayers, when considering whether to be tax compliant, undertake an implicit cost-benefit analysis, weighing the following three factors: the severity of the penalty, the chance of detection, and the economic benefit associated with being noncompliant.[10]

In weighing their decision of whether to be compliant, taxpayers have long understood that not all Internal Revenue Code ("Code") violations are universally punishable. The Code grants a certain amount of leeway to taxpayers to be wrong in their tax reporting practices. Put another way, along a spectrum, if a taxpayer's reporting position has a certain probability of success, the threshold of which depends on the nature of the transaction, the Code insulates it from penalty

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taxpayer overvalued property donated to Miami Christian College and then sought to conceal his actions from the government); United States v. Hook, 781 F.2d 1166 (6th Cir. 1986) (recounting where, in a ploy designed to evade the payment of tax, the taxpayer purposefully put title to his assets in other taxpayers' names).

7. See Internal Revenue Code Chapter 68, entitled "Additions to tax, additional amounts, and assessable penalties," and Chapter 75, entitled "Crimes, other offenses and forfeitures." Penalties are not supposed to raise revenue; instead, their utility is in retribution and deterrence. *See* United States v. Halper, 490 U.S. 435, 448 (1989) ("[P]unishment serves the twin aims of retribution and deterrence. . . . [A] civil sanction that cannot fairly be said solely to serve a remedial purpose, but rather can only be explained as also serving either retributive or deterrent purposes, is punishment, as we have come to understand the term."); COMM'R.'S EXEC. TASK FORCE ON CIV. PENALTIES, INTERNAL REVENUE SERV., REPORT ON CIVIL TAX PENALTIES pt. II, at 2 (1989) ("Given the wide-ranging responsibilities of the IRS and the ultimate reliance of our taxation system on voluntary compliance, penalties have a relatively limited, though important role. The compliance function of IRS is principally concerned with protecting and enhancing voluntarily compliant conduct by taxpayers. Penalties constitute one important tool for IRS to use in pursuing its mission of encouraging voluntary compliance. In line with IRS's mission, IRS believes that penalties are positively related to the accomplishment of IRS's mission only if they operate to encourage voluntary compliance, and that penalties can and should be evaluated solely on the basis of whether they do the best possible job of encouraging compliant conduct.").

8. By way of comparison, "The norms model maintains that many taxpayers satisfy their tax obligations because they want to adhere to specific social or personal norms, such as reciprocating the cooperation of others or respecting legitimate obligations." Michael Doran, *Tax Penalties and Tax Compliance*, 46 HARV. J. ON LEGIS. 111, 112 (2009).

9. Consider two examples that illustrate this point. First, if a taxpayer substantially misstates an asset's value, the applicable penalty related to the tax understatement is twenty percent; however, if asset valuation is grossly misstated, the applicable penalty related to the tax understatement is forty percent. I.R.C. § 6662(h). Second, if any tax understatement pertains to a nondisclosed noneconomic substance transaction, the applicable penalty threshold is forty percent rather than the normal twenty percent penalty. *Id.* § 6662(i).

10. The recognition of this taxpayer mental weighing process is the product of a seminal piece written by Nobel Laureate Economist Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968). Various theorists have extended Becker's insights into the realm of tax compliance. Michael G. Allingham & Agnar Sandmo, *Income Tax Evasion: A Theoretical Analysis*, 1 J. PUB. ECON. 323 (1972); *see also* Shlomo Yitzhaki, *A Note on* Income Tax Evasion: A Theoretical Analysis, 3 J. PUB. ECON. 201 (1974).

imposition.[11] Why such legislative magnanimity? Due to the Code's complexity and frequent ambiguity,[12] Congress and the courts long ago recognized that the tax law is fraught with uncertainty, and good faith efforts to comply should be both respected and applauded.[13]

As an illustration of how the civil tax penalty regime operates, consider a taxpayer who claims a deduction that, upon audit, the Internal Revenue Service ("IRS") later determines should be disallowed. The IRS will require the taxpayer to pay the extra tax she owes after losing the deduction and may also require her to pay a penalty on top of the tax owed. But if the taxpayer can show that she had some legal support for taking the deduction (for example, that some case law supports the deduction, even though other case law supports disallowing the deduction), she may avoid the penalty.[14] In other words, she might still lose her legal dispute over the deduction, but the penalty won't apply if she meets the Code's requirements for having sufficient legal authority that her position was not frivolous. As we detail below, these legal authority requirements are an essential feature of the civil tax penalty regime and are tied to the taxpayer's probability of winning her case on the merits.[15] For example, some types of penalties are avoided if the taxpayer can show legal authorities supporting a twenty percent chance of success on the merits; in other contexts, the taxpayer needs to show a forty percent chance of success to avoid a penalty; and, in still other contexts, the taxpayer must show a greater than fifty percent chance of success to avoid a penalty.[16]

Throughout the years, Congress has routinely tinkered with the Code's civil tax penalty system.[17] However, approximately three decades ago,[18] Congress broadened its reach, strengthened its sting, and

11. *See infra* Part I.

12. *See generally* Lawrence M. Solan, *Pernicious Ambiguity in Contracts and Statutes*, 79 CHI.-KENT L. REV. 859 (2004) (describing how words used in contracts and statutes are often imbued with ambiguity, resulting in litigation between parties).

13. *See, e.g.*, Volvo Trucks of N. Am., Inc. v. United States, 367 F.3d 204, 210 (4th Cir. 2004) (noting that the doctrine of substantial compliance "seek[s] to preserve the need to comply strictly with regulatory requirements that are important to the tax collection scheme and to forgive noncompliance for either unimportant and tangential requirements or requirements that are so confusingly written that a good faith effort at compliance should be accepted").

14. *See infra* Part I.

15. *See infra* Part I.

16. *See* Tax Penalty Regime summary chart *infra* Section I.A.2.

17. *See generally* Donald Arthur Winslow, *Tax Penalties—"They Shoot Dogs, Don't They?,"* 43 FLA. L. REV. 811, 821-56 (1991) (presenting a short historical review of the nation's penalty regime); Jeremiah Coder, *Achieving Meaningful Civil Tax Penalty Reform and Making It Stick*, 27 AKRON TAX J. 153, 155-56 (2012) (same).

18. Improved Penalty Administration and Compliance Tax Act, Pub. L. No. 101-239, § 7711, 103 Stat. 2388 (1989) (codified in sections relevant to this Article at I.R.C. §§ 6662-6664, 6694).

better systematized its application.[19] Ever since, the Code's penalty structure has remained virtually unchanged. The consensus among those in the tax community, namely, tax academics and tax practitioners, is that these statutory revisions have largely been effectual.[20] Indeed, if there has been a problem regarding tax compliance, those in the tax community are more likely to attribute it to the lack of oversight resources dedicated to tax enforcement (i.e., inadequate IRS funding) than any fundamental flaw in the structure of the tax penalty system itself.[21]

Nevertheless, the civil tax penalty regime lacks the precision commonplace in other facets of the Code. And the reason for this shortcoming is easy to identify: when it comes to particular tax reporting positions, calibrating the probability of success can prove daunting. Said somewhat differently, taxpayers endure immense difficulties in determining the chances of whether a particular tax reporting position would be judicially sustained—a pivotal metric upon which penalty application often turns.[22] Such uncertainty subverts taxpayers' abilities to determine whether they face the risk of penalty imposition, often obfuscating their efforts to be compliant. Since Congress first introduced the modern income tax, this state of affairs has remained a relative constant.

Enter artificial intelligence, or AI. One of the foundational attributes of AI is its ability to bolster predictive analytics (i.e., using data to forecast the likelihood of a given future outcome).[23] More

19. *See* Winslow, *supra* note 17, at 883 ("IMPACT 1989, which resulted from these efforts, did improve civil tax penalties in several, largely technical, ways. The Act clarified and systematized the penalty structure. The principal example of this is the elimination of stacking of penalties." (footnote omitted)).

20. In the academic and practitioner world, presenting evidence that legislation is performing up to par is not easy; to the contrary, far more newsworthy is to publish pieces regarding legislative flaws. That being the case, given the absence of articles critiquing the current tax penalty regime, it thus appears to be faithfully fulfilling its legislative objectives.

21. Offiong Ekah, *The Tax Gap: Do Billions in Uncollected Income Taxes Speed Up Economic Downturn During a Global Pandemic?*, 42 J. NAT'L ASS'N ADMIN. L. JUDICIARY 82 (2021) ("The IRS's ability to enforce the nation's tax law has suffered from significant cuts in 'expenditures and personnel; specifically, there was a decrease in expenditures from $5.9 billion to $4.71 billion over the [past] seven years.' This reduction represents an over-fourteen percent drop, which correlates 'with a drop in the number of examination and enforcement positions—on average, more than 11,000 positions, or more than 25%, from 2010 to 2016.' With inadequate funding, the amount of personnel the IRS is able to hire and train to carry out its functions remains limited, and the agency, in turn, is unable to keep up with the demands of adequately serving the American public. Treasury Secretary Steven Mnuchin expressed his concern, stating, 'I am very concerned about the staffing of the IRS. It is an important part of fixing the tax gap.' " (alteration in original) (footnotes omitted)).

22. *See* Linda Galler, *Tax Opinion Policies and Procedures*, 75 TAX LAW. 443, 454-61 (2022) (explaining the various levels of assurances that taxpayers need to safeguard against penalty imposition and the role that tax opinions play in tax practice).

23. *See, e.g.*, Kevin Beasley, *Unlocking the Power of Predictive Analytics with AI*, FORBES (Aug. 11, 2021, 8:10 AM), https://www.forbes.com/sites/forbestechcouncil/2021/08/11/unlocking-the-power-of-predictive-analytics-with-ai/?sh=4a930ad86b2a

specifically, through machine learning, AI can use data to formulate and process algorithms that have the unique capacity to anticipate future events.[24] In the realm of advertising, for example, its prominence has dominated the Internet as programmers have adeptly used predictive analytics to strategically identify consumers' purchasing habits and preferences.[25] But the synergies between AI and predictive analytics are poised to extend well beyond mere consumerism.

This Article presents a novel and compelling case for how predictive analytics can fundamentally change the application of the Code's civil tax penalty regime. Indeed, we argue that relative to other applications of predictive analytics in both law and in other contexts, the civil tax penalty regime is uniquely suited to capitalize on this technology. This is because, despite certain limitations, what predictive analytics does best is use data to produce a probabilistic prediction of future events—down to a specific percentage. And this is exactly what drives the application of many civil tax penalties: the taxpayer's probability of success (on the merits) based on data—in the form of case law and other legal authorities. Rather than requiring taxpayers and/or their advisors to spend time and resources coming up with their best guess of the taxpayer's probability of success, predictive analytics can accomplish this using an algorithm in a matter of minutes. Incorporating the use of predictive analytics into the civil tax penalty regime would also provide the IRS, as well as courts, with an easily accessible tool to determine whether penalties should apply in tax disputes. The result should be higher tax compliance and significantly less litigation.

This Article proceeds in the following four parts. Part I details the current civil tax penalty regime and its effectiveness. Next, Part II overviews predictive analytics and its transformative capacity. Part III then considers how this technological innovation can upend the existing tax penalty regime and significantly enhance taxpayer compliance. To build the case for the promising prominence of technology's role in the penalty regime, Part IV offers three case studies, which

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[https://perma.cc/W2TJ-L4XG] ("Predictive analytics uses statistical algorithms combined with internal and external data to forecast future trends, which enables businesses to optimize inventory, improve delivery times, increase sales and ultimately, reduce operational costs. When paired with artificial intelligence (AI), the insights gleaned from these advanced systems are the key to more accurate and timely forecasting going forward.").

24. *See* John G. Browning, *Real World Ethics in an Artificial Intelligence World*, 49 N. KY. L. REV. 155, 157 (2022) ("Yet another natural fit for the efficiencies that AI offers is predictive analytics, in which AI products are used to predict the outcome of litigation (or particular aspects of a litigated matter).").

25. *See, e.g.*, Siti Zulaikha et al., *Customer Predictive Analytics Using Artificial Intelligence*, SING. ECON. REV., Aug. 6, 2020, at 6, https://www.worldscientific.com/doi/epdf/10.1142/S0217590820480021 [https://perma.cc/7W6N-657V] ("Through AI, marketers can recognize customers' purchase behavior through their actions therefore the obtained data can be used to generate customer insights for marketing strategy development.").

reveal and elaborate its ease of application and the virtues it offers in terms of enhancing tax compliance, transparency, and administrability. Finally, a conclusion follows.

I. BACKGROUND

Throughout the millennia of civilization, whenever there was a tax regime, there was also an accompanying penalty regime in place to curtail taxpayer noncompliance.[26] The penalties have ranged from the relatively insignificant to death.[27] Vis-à-vis their tax penalty regimes, governments seek to send the following resounding and simple message to taxpayers: comply—or else. And this strategy appears to work, particularly since many of us, by our nature, are somewhat risk averse.[28]

Long ago, Congress recognized that to raise meaningful revenue in the United States, it would be essential to have an effective tax penalty regime in place. Left to their druthers and absent possible penalty imposition, many taxpayers would be apt to be noncompliant in their tax reporting practices.[29] Why? Because they would prefer to retain funds for their private use rather than pay taxes targeted for public consumption.[30]

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26. *See, e.g.*, J.R. Thorpe, *History's Most Awful Punishments for Not Paying Your Taxes*, BUSTLE (Apr. 12, 2017), https://www.bustle.com/p/worried-about-your-taxes-at-least-you-dont-have-to-deal-with-these-5-awful-tax-punishment-from-history-50640 [https://perma.cc/XW7K-DPVS] ("Tax evasion has a long and brilliant history, with societies developing new methods of combating it nearly as often as individuals have developed new methods of engaging in it.").

27. *Id.* ("The ancient Egyptians had extensive taxation regimes—enough so that there were perpetual complaints, over the course of many dynasties, about how tax collectors were abusing their powers. However, the punishments for actual evasion were pretty brutal: we have images of what happened to tax evaders, and it seems that a lot of them were held down and caned repeatedly in public. The standard procedure, it seems, was 100 canings plus five sharp cuts for severe evasion situations. If you really went wrong, however, according to the (occasionally reliable) historian Herodotus, the law from around 500 BC onwards dictated that you be put to death. Either you were burned or impaled, neither of which was helpful in giving you a body to enter the famously complex Egyptian afterlife.").

28. *See* John T. Maier, *Risk Aversion and the Roots of Anxiety*, PSYCH. TODAY (Dec. 11, 2021), https://www.psychologytoday.com/us/blog/philosophy-and-therapy/202112/risk-aversion-and-the-roots-anxiety [https://perma.cc/D5JD-Y3UX] ("Most of us are a little risk-averse and a little loss-averse.").

29. *See* DEP'T OF THE TREASURY, PENALTY AND INTEREST PROVISIONS OF THE INTERNAL REVENUE CODE 2 (1999), https://home.treasury.gov/system/files/131/Report-Penalty-Interest-Provisions-1999.pdf [https://perma.cc/8PCL-DUKV] ("Difficult balances must be struck to achieve a fair and effective system of sanctions involving different taxpayers and diverse causes for noncompliance. The overarching objectives are to foster and maintain a high degree of voluntary compliance, encourage taxpayers to promptly resolve noncompliance problems with the IRS, and impose a system of sanctions that is sufficient to discourage intentional noncompliance without imposing undue burden and complexity on taxpayers whose noncompliance is due to other factors.").

30. *See* William D. Andrews, *A Consumption-Type or Cash Flow Personal Income Tax*, 87 HARV. L. REV. 1113, 1165 (1974) (noting that the "primary, intended, real effect"

Thus, when Congress instituted the modern income tax system, it simultaneously introduced an accompanying tax penalty regime.[31] In most, but not all instances (e.g., fraud), the severity of these initial tax penalties was rather limited.[32] Congress apparently wanted to give sufficient time to taxpayers to learn the new economic landscape and get acclimated to the nature of an income tax—a novel enterprise that few, if any, taxpayers had previously experienced.[33]

Over the ensuing decades, as the income tax grew increasingly complex and its application more widespread, the tax penalty regime correspondingly evolved as well, becoming increasingly more expansive and refined.[34] As previously observed, Congress's last major reform of the tax penalty regime came in 1989.[35] Since then, Congress has made several incremental adjustments,[36] but nothing of the magnitude of its prior reform effort.

There are many tax academics and practitioners who have critiqued the existing tax penalty regime for a whole host of reasons, including,

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of the tax is to reduce private consumption and accumulation in order to free resources for public use).

31. For example, if a taxpayer did not pay the tax owed, "there shall be added the sum of 5 per centum on the amount of tax unpaid, and interest at the rate of 1 per centum per month upon said tax from the time the same became due." Revenue Act of October 3, 1913, ch. 16, 38 Stat. 114, 170.

32. *See, e.g.*, *id.* at 171 ("That if any person, corporation, joint-stock company, association, or insurance company liable to make the return or pay the tax aforesaid shall refuse or neglect to make a return at the time or times hereinbefore specified in each year, such person shall be liable to a penalty of not less than $20 nor more than $1,000. Any person or any officer of any corporation required by law to make, render, sign, or verify any return who makes any false or fraudulent return or statement with intent to defeat or evade the assessment required by this section to be made shall be guilty of a misdemeanor, and shall be fined not exceeding $2,000 or be imprisoned not exceeding one year, or both, at the discretion of the court, with the costs of prosecution.").

33. Decades earlier, during the onset of the Civil War, Congress introduced an income tax. Act of Aug. 5, 1861, ch. 45, § 49, 12 Stat. 292 (repealed 1862). For excellent overviews of this tax, see Sheldon D. Pollack, *The First National Income Tax, 1861-1872*, 67 TAX LAW. 311 (2014); Joseph A. Hill, *The Civil War Income Tax*, 8 Q.J. ECON. 416 (1894). In 1872, the tax expired, Stephanie Hunter McMahon, *A Law with a Life of Its Own: The Development of the Federal Income Tax Statutes Through World War I*, 7 PITT. TAX REV. 1, 17-18 (2009), and when Congress sought to reintroduce an income tax in 1894, Act of Aug. 27, 1894, ch. 349, §§ 27-37, 28 Stat. 509, 553-60, it was quickly declared unconstitutional by the U.S. Supreme Court, Pollock v. Farmers' Loan & Tr. Co., 157 U.S. 429 (1895).

34. *See* Winslow, *supra* note 17, at 823-56 (explaining the scope of the pre-1989 tax penalty structure).

35. *See supra* note 18 and accompanying text.

36. Examples include the following: (1) Small Business and Work Opportunity Tax Act of 2007, Pub. L. No. 110-28, 121 Stat. 190 (broadening the application of Code section 6694 to all tax return preparers); (2) Tax Extenders and Alternative Minimum Tax Relief Act of 2008, Pub. L. No. 110-343, 122 Stat. 3765 (setting the tax return preparer standard for undisclosed positions at "substantial authority"); and (3) The Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, § 1409, 124 Stat. 1029 (codifying the economic substance doctrine and imposing certain new accuracy-related penalties applicable to taxpayers whose returns failed to comply under Code subsections 6662(b)(6) and 6662(i)).

but not limited to, being too harsh,[37] too lenient,[38] inequitable,[39] and ineffective.[40] Notwithstanding philosophical differences in their opinions regarding the current tax penalty regime, both tax academics and practitioners would probably agree that it is still mired in the twentieth century, failing to account for the technological changes that have unfolded in the twenty-first century.

In Section A, we overview the existing civil tax penalty regime, and in Section B, we critique its effectiveness in terms of (1) guiding taxpayers and tax practitioners and (2) combating taxpayer noncompliance.

A. The Existing Tax Penalty Regime

A predicate to appraising the existing tax penalty regime is to comprehend its nature. Yet, before doing so, it is important to note that the scope of this Article does not delve into those civil penalties that automatically apply when a taxpayer fails to act (e.g., failure to file and failure to pay penalties).[41] This is because such penalties have proven effective, and there is little controversy surrounding their

37. *See, e.g.*, Kathleen DeLaney Thomas, *The Case Against a Strict Liability Economic Substance Penalty*, 13 U. PA. J. BUS. L. 445, 445-46 (2011) ("Congress has failed to articulate why violations of the economic substance doctrine have been singled out for strict liability when other tax shelter penalties contain taxpayer defenses. The only way to properly justify a new tax shelter penalty with strict liability would be to tie that penalty to the most egregious forms of taxpayer misconduct, but there appears to be no link between violations of economic substance and the worst kinds of tax shelters. Given that violations of the economic substance doctrine are not a proxy for the most abusive tax shelter transactions, this Article concludes that the imposition of a strict liability penalty cannot be reconciled with other tax shelter penalties that provide for various forms of a reasonable cause defense.").

38. *See* Mark P. Gergen, *Uncertainty and Tax Enforcement: A Case for Moderate Fault-Based Penalties*, 64 TAX L. REV. 453, 453 (2011) ("The conventional wisdom is that a deterrence theory of tax compliance indicates penalties for tax under-reporting should be significantly higher than existing penalties and automatic rather than fault-based. This is to compensate for a low audit rate and the correspondingly low probability of the government detecting under-reporting." (footnote omitted)); Winslow, *supra* note 17, at 819 ("The final result, IMPACT 1989, was far less ambitious. IMPACT 1989 consolidated the negligence and no-fault provisions and repaired some minor inconsistencies. However, the revision was arguably a retreat from the penalty enactments of the early 1980s, as it, for example, eliminated stacking and curtailed the Service's discretion to waive the 'no-fault' penalties. From a broad perspective, IMPACT 1989 was a disappointment." (footnotes omitted)).

39. *See generally* AM. INST. OF CERTIFIED PUB. ACCTS., REPORT ON CIVIL TAX PENALTIES: THE NEED FOR REFORM (2013), https://us.aicpa.org/content/dam/aicpa/advocacy/tax/downloadabledocuments/2013_04_11-report_on_civil_tax_penalty_reform.pdf [https://perma.cc/726X-XD3Q] (explaining how some penalties that are levied are disproportionate to the wrongdoing committed).

40. *Id.* at 1 ("Twenty-four years ago, Congress enacted the Improved Penalty and Compliance Tax Act of 1989 (IMPACT), which overhauled the then-existing civil tax penalty regime and reiterated that the core goal of penalties is to encourage voluntary compliance. Unfortunately, in the 24 years since IMPACT, numerous penalty provisions have been enacted that are not directed toward, and do not achieve, the core goal of encouraging voluntary compliance." (footnote omitted)).

41. *See* I.R.C. § 6651(a)(1)-(2) (imposing a 5% per month penalty (up to 25%) for failure to timely file and a .5% per month penalty (up to 25%) for failure to timely pay).

application.[42] Furthermore, with respect to these automatic penalties, twentieth-century technology largely permits the IRS to readily identify those taxpayers who are remiss in the timeliness of their reporting and payment practices and to have them bear responsibility for their derelictions.[43]

Nor does this Article focus on criminal tax penalties, such as those for tax evasion or willful failure to pay taxes.[44] Such penalties rarely involve ambiguous tax reporting positions, but instead turn on whether the taxpayer had the requisite intent to conceal income or otherwise falsely report tax liability to the government.[45]

Instead, the focal point of this Article is upon those civil tax penalties that are discretionary in nature, that is, when the IRS generally can choose whether their imposition is apropos. Such penalties are largely, but not entirely, concentrated in Code sections 6662 (applicable to taxpayers) and 6694 (applicable to tax return preparers). Accordingly, Section A.1 examines Code section 6662, and Section A.2 examines Code section 6694.

1. Code Section 6662 (Applicable to Taxpayers)

When Code section 6662 applies, it generally levies a twenty percent penalty on the portion of a tax underpayment required to be shown on a return.[46] While this Code section enumerates a myriad of

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42. In some cases, this is not true. For example, a taxpayer may submit a supposed tax return to the IRS that the agency disputes and does not constitute a legitimate tax return; as a result, it may assess a failure to file penalty. *See, e.g.*, Beard v. Comm'r, 82 T.C. 766 (1984), *aff'd per curiam*, 793 F.2d 139 (6th Cir. 1986) (describing taxpayer's failure to submit a form that sufficiently complied with the requirements of the Code).

43. Unfortunately, the IRS's existing technology is not entirely up-to-speed and mistakes are made. *See, e.g.*, Paul Bonner, *IRS Blames Old Tech in Destruction of Information Returns*, J. ACCT. (May 13, 2022), https://www.journalofaccountancy.com/news/2022/may/irs-blames-old-tech-destruction-information-returns.html [https://perma.cc/JGS7-GS6B] ("The IRS said Thursday that it destroyed approximately 30 million unprocessed information returns because its 'antiquated technology' forced it to dispose of the paper documents . . . .").

44. *See, e.g.*, I.R.C. § 7201 (punishing tax evasion by a fine of up to $100,000 and up to five years in prison); *id.* § 7203 (punishing willful failure to file a return or pay tax by a fine of up to $25,000 and up to one year in prison).

45. For example, section 7201 defines tax evasion, a felony, as "willfully attempt[ing] in any manner to evade or defeat any tax." *Id.* § 7201. The vast majority of tax penalties imposed by the IRS are civil penalties. The IRS's most recent enforcement statistics show roughly forty million civil penalties assessed annually (2021), compared to roughly 700 criminal prosecutions (in the fiscal year ending 2022). *See Collections, Activities, Penalties, and Appeals*, INTERNAL REVENUE SERV., https://www.irs.gov/statistics/collections-activities-penalties-and-appeals#:~:text=The%20IRS%20assessed%20%2437.3%20billion,year%20 (Table%2027XLSX) [https://perma.cc/E5BQ-69TY] (last updated Mar. 21, 2024) (showing civil tax penalties in table twenty-six); INTERNAL REVENUE SERV. CRIM. INVESTIGATION, 2023 ANNUAL REPORT 5 (2023), https://www.irs.gov/pub/irs-pdf/p3583.pdf [https://perma.cc/JNC5-L7VC] (data on criminal prosecutions).

46. I.R.C. § 6662(a).

situations that trigger its application, those that are most salient to taxpayers are detailed below—namely, (i) negligence or disregard of rules and regulations and (ii) substantial understatements.

(i) Negligence or Disregard of Rules and Regulations. One of the Code's most ubiquitous tax penalties applies when a taxpayer displays "[n]egligence or disregard of rules or regulations."[47] As defined under the Code, "negligence" includes "any failure to make a *reasonable* attempt to comply with the [Code]," and the term "disregard" includes "any careless, reckless, or intentional disregard."[48] The adjective "reasonable" serves as the touchstone of when this penalty ordinarily will apply. The regulations specifically state that a tax return position that is essentially grounded in reasonableness is not attributable to negligence; in other words, the penalty will not apply.[49] To elucidate, the Treasury regulations amplify the meaning of the phrase "reasonable basis" as follows: "Reasonable basis is a relatively high standard of tax reporting, that is, significantly higher than not frivolous or not patently improper. The reasonable basis standard is not satisfied by a return position that is merely arguable or that is merely a colorable claim."[50] While the term "reasonable" is, by its nature, vague, the regulations nevertheless add a bit of clarity as to its meaning.

Furthermore, courts,[51] professional organizations,[52] commentators,[53] and even the Joint Committee on Taxation have sought to quantify the application of this penalty in terms of probability, stating that the penalty generally will not apply (i.e., the taxpayer's position is reasonable and not negligent) if the taxpayer's reporting position has at least a twenty percent or greater chance of prevailing in a judicial action.[54] In other words, even though a taxpayer might lose her tax case

47. *Id.* § 6662(b)(1).

48. *Id.* § 6662(c) (emphasis added).

49. Treas. Reg. § 1.6662-3(b)(1).

50. *Id.* § 1.6662-3(b)(3).

51. *See, e.g.*, Richard A. Scully, *ALJ Dismisses Complaint Seeking to Suspend Attorney from Practice Before IRS*, TAX NOTES (Jan. 29, 2009), https://www.taxnotes.com/research/federal/irs-guidance/irs-opr-decisions/alj-dismisses-complaint-seeking-to-suspend-attorney-from-practice-before/wq9k?highlight=sykes [https://perma.cc/6DSE-4GRZ] ("[A] 'reasonable basis' opinion . . . has a 25 percent chance that it is correct.").

52. AM. INST. OF CERTIFIED PUB. ACCTS., INTERPRETATIONS OF STATEMENT ON STANDARDS FOR TAX SERVICES NO. 1, TAX RETURN POSITIONS 4 (2018), https://www.aicpacima.com/resources/download/interpretations-of-statement-on-standards-for-tax-services-no-1-tax-return [https://perma.cc/L6ES-2BSW] ("In practice, the reasonable basis standard generally is interpreted as requiring that there be approximately a 20 percent likelihood that the position will be upheld on its merits if it is challenged.").

53. *See* Galler, *supra* note 22, at 456 ("Reasonable basis has been variously quantified: by some, as low as 20%; by others, as falling between 20 and 30%." (footnote omitted)); Robert P. Rothman, *Tax Opinion Practice*, 64 TAX LAW. 301, 327 (2011) (quantifying "Reasonable Basis" at around 20-30%).

54. JOINT COMM. ON TAX'N, STUDY OF PRESENT-LAW PENALTY AND INTEREST PROVISIONS AS REQUIRED BY SECTION 3801 OF THE INTERNAL REVENUE SERVICE

on the merits, and thus owe additional tax to the government, she will not owe a negligence penalty on top of the back taxes if she can show that the position she took had at least a twenty percent chance of success.

(ii) Substantial Understatements. A taxpayer's reporting position may also trigger the substantial understatement penalty. The Code elaborates the meaning of the two terms "understatement" and "substantial." It defines the term "understatement" as follows: "the excess of—(i) the amount of the tax required to be shown on the return for the taxable year, over (ii) the amount of the tax imposed which is shown on the return."[55] With this definition in mind, the Code defines the adjective "substantial" to be as follows: "[i]f the amount of the understatement for the taxable year exceeds the greater of—(i) 10 percent of the tax required to be shown on the return for the taxable year, or (ii) $5,000."[56] In short, the rule penalizes a taxpayer regardless of whether they were negligent if the amount of tax they fail to report is substantial in size.

To illustrate, suppose a taxpayer, an individual, reports $100,000 of taxable income, which, due to a thirty percent tax rate, generates $30,000 of tax. Suppose further that the IRS audits the taxpayer return and upwardly adjusts the taxpayer's income by $50,000 to $150,000, resulting in a total tax liability of $45,000 (thirty percent of $150,000). The resulting understatement therefore is equal to $15,000 (i.e., the amount of tax required to be shown on the return, namely, $45,000, less the amount of the tax that was shown on the return, namely, $30,000). Because this understatement exceeds the greater of (i) $4,500 (i.e., ten percent of the $45,000 tax required to be shown on the return) or (ii) $5,000, the substantial understatement penalty of twenty percent would apply, resulting in a $3,000 penalty (i.e., $15,000 x twenty percent).

On its face, the application of the substantial understatement penalty appears to be automatic. Indeed, some commentators refer to it as the "strict liability" penalty.[57] However, the Code permits two major defenses to its application, which, in many instances, can transform its nature to being discretionary. The exceptions apply in those circumstances when (a) taxpayers have "substantial authority" for their

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RESTRUCTURING AND REFORM ACT OF 1998 (INCLUDING PROVISIONS RELATING TO CORPORATE TAX SHELTERS) 160 (1999), https://www.jct.gov/publications/1999/jcs-3-99-volume-i/ [https://perma.cc/GV6V-EVBR].

55. I.R.C. § 6662(d)(2)(A).

56. *Id.* § 6662(d)(1)(A). The threshold for substantial understatements differs for corporate taxpayers. *See id.* § 6662(d)(1)(B) (applying if "the understatement for the taxable year exceeds the lesser of—(i) 10 percent of the tax required to be shown on the return for the taxable year (or, if greater, $10,000), or (ii) $10,000,000").

57. *See* John McGown, Jr., *Individuals Escape Penalties for Failure to Amend Incorrect Federal Income Tax Returns*, 24 IDAHO L. REV. 235, 239-40 (1987) ("The Internal Revenue Code imposes strict liability civil penalties for . . . [a] substantial understatement of tax . . . .").

reporting positions, or (b) taxpayers have a "reasonable basis"[58] for their positions and such positions are "adequately disclosed."[59] Consider each exception seriatim.

(a) Substantial Authority

The virtue of a reporting position that has substantial authority is simple: even if the taxpayer loses on the merits, the tax owed is not subject to the substantial understatement penalty.[60] To illustrate, in the prior example, suppose the taxpayer in question had taken a $40,000 deduction for which there was substantial authority, meaning that some relevant legal authorities (e.g., case law, Treasury regulations, etc.) support the taxpayer's position. In this case, even if the IRS were successful in disallowing the proffered deduction, the taxpayer would not endure a substantial understatement penalty related to this portion of the understatement.[61]

Like the phrase "reasonable basis," defining the phrase "substantial authority" is not easy. The regulations nevertheless attempt to do so, offering the following succinct definition:

> The substantial authority standard is an objective standard involving an analysis of the law and application of the law to relevant facts. The substantial authority standard is less stringent than the more likely than not standard (the standard that is met when there is a greater than 50-percent likelihood of the position being upheld), but more stringent than the reasonable basis standard as defined in §1.6662-3(b)(3).[62]

The regulations elaborate, declaring that "[t]here 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

58. *See* Treas. Reg. § 1.6662-3(b)(3) ("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 as defined in §1.6662-4(d)(2).").

59. I.R.C. § 6662(d)(2)(B).

60. Treas. Reg. § 1.6662-4(d)(1).

61. This is because the resulting understatement would be deemed to be $3,000 (i.e., the amount of tax required to be shown on the return, namely, $45,000, less the amount of the tax that was shown on the return, namely, $30,000, plus the tax attributable to the item for which there is substantial authority, namely, $40,000 x .3, or $12,000). Because the amount of the resulting understatement, namely, $3,000, does not exceed the greater of (i) $4,500 (i.e., 10% of $45,000 tax required to be shown on the return) or (ii) $5,000, the substantial understatement penalty would not apply.

62. Treas. Reg. § 1.6662-4(d)(2).

weight of authorities supporting contrary treatment."[63] They also add that "[t]he weight accorded an authority depends on its relevance and persuasiveness."[64]

When distilled down to its essentials, what guidance, then, does the substantial authority standard offer taxpayers and tax practitioners? Once again, courts,[65] professional organizations,[66] commentators,[67] and the Joint Committee on Taxation have suggested that for the substantial authority standard to be met, there must be at least a forty percent or greater probability that a court would uphold the taxpayer's position if the IRS were to challenge it.[68] Thus, even in those circumstances when taxpayers lose in court but their return position meets the substantial authority standard, they can nevertheless avoid penalty imposition.[69]

Regarding the substantial authority test, there is one important caveat to keep in mind. If the issue at hand involves a tax shelter (defined under the Code to be any entity, plan, or arrangement having the avoidance or evasion of income tax as a "principal purpose"),[70] a different standard applies. As amplified by the Treasury regulations, for the taxpayer to launch a successful defense to penalty imposition, the Code requires that the following two conditions must be met: the taxpayer must not only have reasonable cause (defined as having substantial authority for the tax position in question), but she must also harbor the good faith belief that her position is more likely than not correct.[71] Thus, when it comes to tax shelters, it is this latter condition that makes taxpayers far more vulnerable to tax penalty impositions.

(b) Reasonable Basis Coupled with Adequate Disclosure

A second major exception to the substantial understatement penalty is when the taxpayer's reporting position has a reasonable basis

63. *Id.* § 1.6662-4(d)(3)(i).

64. *Id.* § 1.6662-4(d)(3)(ii).

65. *See, e.g.*, Scully, *supra* note 51 ("[A] 'substantial authority' opinion . . . has about a 40 percent chance . . . [that it is correct].").

66. *See* AM. INST. OF CERTIFIED PUB. ACCTS., *supra* note 52, at 4 ("In practice, the substantial authority standard generally is interpreted as requiring approximately a 40 percent likelihood that the position will be upheld on its merits if it is challenged.").

67. *See* Galler, *supra* note 22, at 457 ("[M]ost commentators nonetheless peg substantial authority at a 40% likelihood of success . . . .").

68. JOINT COMM. ON TAX'N, *supra* note 54, at 160, 163 (presenting charts indicating the penalty avoidance to be a forty percent or greater likelihood of success if challenged).

69. *See, e.g.*, Wise v. Comm'r, 73 T.C.M. (CCH) 2324 (1997) (holding, in the Tax Court, that the taxpayer's reliance on a single Eleventh Circuit case supporting his position was substantial authority, despite the fact that the IRS's position was supported by Tax Court opinions and several other circuit court cases provided substantial authority); Unger v. Comm'r, 58 T.C.M. (CCH) 1157 (1990) (declining to impose an accuracy-related penalty where taxpayer presented at least some cases in support of its legal argument).

70. Treas. Reg. § 1.6662-4(g)(2).

71. *See id.* § 1.6662-4(d)(3)(ii).

(as previously defined) and is coupled with adequate disclosure.[72] The Treasury regulations enumerate the meaning of "adequate disclosure" to include several possible reporting mechanisms for taxpayers to spotlight those items that meet the reasonable basis standard yet fall short of satisfying the substantial authority standard.[73] Once again, if any understatement is attributable to those items for which there is a reasonable basis and adequate disclosure is made, akin to those items for which there is substantial authority, no tax understatement penalty applies to that portion of the understatement attributable to it.

To illustrate, once again utilizing the prior example, suppose the taxpayer in question had taken a $40,000 deduction for which there was a reasonable basis, but not substantial authority, and the taxpayer adequately disclosed such item on her tax return by submitting an accompanying Form 8275 (Disclosure Statement). In this case, even if the IRS were successful in disallowing the proffered deduction, the taxpayer would not endure a substantial understatement penalty related to this portion of the understatement.[74]

2. Code Section 6694 (Applicable to Tax Return Preparers)

Several decades ago, Congress learned that tax return preparers, in their quests to command larger fees, were often the instigators of taxpayers' egregious tax return positions.[75] As such, the nation's legislative body sought to stem these practices by penalizing those tax return preparers that endorsed taxpayers' aggressive tax return positions that lacked legitimacy.[76]

Over time, tax return preparer penalties evolved. Initially, they were quite modest in nature: those tax return preparers who were

72. I.R.C. § 6662(d)(2)(B)(ii).

73. Treas. Reg. §§ 1.6662-3(c)(2), 1.6662-4(e).

74. This is because the resulting understatement would be deemed to be $3,000 (i.e., the amount of tax required to be shown on the return, namely, $45,000, less the amount of the tax that was shown on the return, namely, $30,000, plus the tax attributable to the item for which there is a reasonable basis and the taxpayer had made adequate disclosure, namely, $40,000 x .3, or $12,000). Because the amount of the resulting understatement does not exceed the greater of (i) $4,500 (i.e., 10% of $45,000 tax required to be shown on the return) or (ii) $5,000, the substantial understatement penalty would not apply.

75. *See* JOINT COMM. ON TAX'N, JCS-33-76, GENERAL EXPLANATION OF THE TAX REFORM ACT OF 1976, at 346 (1976) ("For 1972, the IRS discovered that about 60 percent of the returns surveyed (or over 3,000 returns) showed significant fraud potential. In the 1973 survey, which was based on a more random selection of preparers than those checked in 1972, 22.3 percent of the returns (1,112 returns) prepared by preparers showed fraud potential."); Swart v. United States, 568 F. Supp. 763, 765 (C.D. Cal. 1982) ("Section 6694 was enacted as part of the Tax Reform Act of 1976 . . . . These reforms were enacted in response to the increasing number of professional income tax preparers and because of the number of abuses by such persons which had been detected by the I.R.S.").

76. *See* Tax Reform Act of 1976, Pub. L. No. 94-455, § 1203(b)(1), 90 Stat. 1520, 1689 (introducing I.R.C. § 6694).

derelict in assisting clients were slapped with small monetary fines.[77] Gradually, however, the severity of these penalties became more onerous.[78] Now, when Code section 6694 applies, as a general proposition, it levies a penalty equal to the "greater of $1,000 or 50 percent of the income derived (or to be derived) by the tax return preparer with respect to the return or claim."[79] In most instances, this penalty applies when a tax reporting position that a tax return preparer takes is unreasonable (i.e., lacks substantial authority),[80] and in those cases where there are repeat offenses, it can lead to a referral to the Office of Professional Responsibility.[81]

To thus avoid the imposition of this penalty or sanctioning by the Office of Professional Responsibility, most tax return preparers know that they must embrace reasonable reporting positions on behalf of their clientele. To be reasonable, the taxpayer's tax return position has to meet one of the following three criteria:

- The return position must be grounded in substantial authority;[82]
- If the return position lacks substantial authority, there must be a reasonable basis for it and adequate disclosure must be made;[83] or
- If the return position relates to a tax shelter or a so-called "reportable transaction," it must be more likely than not to be able to be sustained on its merits.[84]

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77. As originally enacted in 1976, the Tax Reform Act imposed a $100 fine per return on a tax return preparer for acting with "negligence" or for intentionally disregarding the rules and regulations, and a $500 penalty per return for acting "willfully." *Id.*

78. *See* Improved Penalty Administration and Compliance Tax Act, Pub. L. No. 101-239, 103 Stat. 2388, 2402 (1989) (imposing a $250 penalty for a client's understatement attributable to a position for which there is "not a realistic possibility of being sustained on its merits" on a preparer who "knew (or reasonably should have known)" of the position); Small Business and Work Opportunity Tax Act of 2007, Pub. L. No. 110-28, 121 Stat. 203 (further raising the penalty to as much as half the practitioner's fees for advising on or preparing an unsustainable return position).

79. I.R.C. § 6694(a)(1).

80. *Id.* § 6694(a)(2)(A).

81. See the preamble to the proposed regulations in Tax Return Preparer Penalties Under Section 6694 and 6695, 73 Fed. Reg. 34560, 34563 (June 17, 2008) ("In keeping with a balanced enforcement program for tax return preparers, the IRS intends to modify its internal guidance so that a referral by revenue agents to the IRS Office of Professional Responsibility (OPR) will not be per se mandatory when the IRS assesses a tax return preparer penalty under section 6694(a) against a tax return preparer who is also a practitioner within the meaning of Circular 230. . . . In matters involving non-willful conduct, the IRS will generally look for a pattern of failing to meet the required penalty standards under section 6694(a) before making a referral to OPR, although any egregious conduct subjecting a tax return preparer to penalty may also form a basis for a referral to OPR.").

82. I.R.C. § 6694(a)(2)(A).

83. *Id.* § 6694(a)(2)(B).

84. *Id.* § 6694(a)(2)(C).

Akin to the probability thresholds applicable to taxpayers and their reporting positions, commentators aver that tax return preparers must endure similar probability thresholds.[85] In other words, if the tax return preparer proffers a tax return reporting position that has a forty percent or greater chance of being sustained on its merits, it meets the qualification of having substantial authority; if the reporting position fails to meet this standard but has at least a twenty percent or greater chance of being sustained on its merits and is adequately disclosed by the taxpayer, it will not be deemed to be unreasonable; finally, if the issue at hand pertains to a tax shelter-related item, tax return preparers should only commit to a reporting position if it has a greater than fifty percent chance of being sustained on its merits.

From the foregoing discussion related to tax penalty imposition, there is one key takeaway, namely, probabilities loom large in determining whether the IRS and courts will consider their imposition apropos. The chart below reflects this reality.

Tax Penalty Regime

Taxpayer's Possible Infraction	Probability of Prevailing on the Merits
(a) Negligence or Disregard	20% or greater
(b) Substantial Understatement	40% or greater
(c) Substantial Understatement, Plus Adequate Disclosure	20% or greater
(d) Tax Shelter Investment	40% or greater, plus greater than 50% belief of shelter being sustained

85. *See, e.g.*, Dennis J. Ventry, Jr. & Bradley T. Borden, *Probability, Professionalism, and Protecting Taxpayers*, 68 TAX LAW. 83, 88-90 (2014) ("In providing particularized, affirmative, and disciplinary rules, the Treasury's code of conduct requires much of tax lawyers and other tax practitioners. Perhaps most importantly, the Treasury's practice rules, in conjunction with the Code and associated regulations, require tax lawyers to make rigorous probability assessments about the merits of a client's tax return position or tax-favored transaction. In fact, due to the standard of care outlined in the Treasury's practice rules and the Code, the tax lawyer's lexicon is filled with predictive terms and phrases: 'more likely than not,' 'substantial authority,' 'realistic possibility of success,' 'reasonable basis,' and 'not frivolous/frivolous.' Each of these predictive levels of certainty, moreover, can be reduced to numerical probabilities with 'more likely than not' reflecting more than 50% certainty, 'substantial authority' ranging from 40% to 50% certainty, 'realistic possibility of success' pegged at more than one-third likelihood, 'reasonable basis' extending from ten to 20%, 'not frivolous' from five to ten percent, and 'frivolous' below five percent." (footnotes omitted)).

Tax Return Preparer Standards	**Probability of Prevailing on the Merits**
(a) Substantial Authority	40% or greater
(b) Lacking Substantial Authority, but Adequate Disclosure	20% or greater
(c) Tax Shelter	Greater than 50%

To make these probability determinations, both taxpayers and tax return preparers must routinely go through mental hoops and cerebral acrobatics. Yet, because few of them harbor the knowledge base necessary to make such determinations or, alternatively, they lack clairvoyance, they characteristically fall short of the mark, augmenting the possible risk of penalty assessment. The next topic of this analysis is whether the threat of penalty imposition deters taxpayer noncompliance and tax return preparers from going rogue in their reporting recommendations.

B. The Effectiveness of the Existing Tax Penalty Regime

By one important metric, namely, taxpayer compliance, the existing penalty regime has a lackluster record of success. An examination of current taxpayer reporting trends reveals the potential shortcomings of the existing tax penalty regime. The most recent voluntary compliance rate hovers in the eighty-five percent range;[86] this percentage is approximately that which has historically been the percentage rate for the last several decades.[87] In other words, notwithstanding congressional efforts at tax penalty reform, the taxpayer compliance needle has remained essentially stuck in place. What does this flat voluntary compliance percentage trend signify, and what can be done about it?

86. *See IRS Releases New Tax Gap Estimates; Compliance Rates Remain Substantially Unchanged from Prior Study*, INTERNAL REVENUE SERV. (Sept. 26, 2019), https://www.irs.gov/newsroom/irs-releases-new-tax-gap-estimates-compliance-rates-remain-substantially-unchanged-from-prior-study [https://perma.cc/9FVQ-TGTX] ("The tax gap estimates translate to about 83.6%, of taxes paid voluntarily and on time, which is in line with recent levels. The new estimate is essentially unchanged from a revised Tax Year 2008-2010 estimate of 83.8%. After enforcement efforts are taken into account, the estimated share of taxes eventually paid is 85.8% for both periods. And it is [in] line with the TY 2001 estimate of 83.7% and the TY 2006 estimate of 82.3%.").

87. *See* INTERNAL REVENUE SERV., FEDERAL TAX COMPLIANCE RESEARCH: TAX GAP ESTIMATES FOR TAX YEARS 2014-2016, at 1, 10 fig.2 (2022), https://www.irs.gov/pub/irs-pdf/p1415.pdf [https://perma.cc/8EM4-QHYC] ("The estimated [Voluntary Compliance Rate] for TY 2014-2016 (85.0 percent) is slightly higher than the revised TY 2011-2013 estimate (83.7 percent).").

When it comes to inducing taxpayer compliance, there are two reasons that suggest why the tax return preparer penalties' effects, at best, are modest. The first is that, even when applicable, the monetary stakes are rather anemic.[88] By way of example, if a tax return preparer advocates an unreasonable position and charges $3,000 for her services, the penalty itself is a mere $1,500[89]—not pocket change, but probably not a meaningful deterrent either. The second is that the odds of the IRS imposing this penalty are rather minuscule. This is reflected by the paucity of court decisions involving Code section 6694 penalties: to date, nearly a half century after being legislatively introduced, only 155 cases (or approximately three a year nationally) involving it have been adjudicated.[90] The practical reality is that tax return preparers should thus be much more fearful of being struck by lightning than bearing the risk of a tax return-related penalty.

Beyond tax penalty reform, there are several other tax compliance methods that both Congress and the IRS have employed and may consider augmenting. The first, with a proven history of success, would be to expand third-party tax information reporting.[91] Compliance numbers reveal a compelling story: when third-party information reporting is present, taxpayer noncompliance is almost nonexistent; by contrast, when there is an absence of third-party information returns, taxpayer noncompliance flourishes.[92] At virtually every opportunity, Congress has therefore sought to expand third-party information return reporting.[93] Nevertheless, it occasionally receives public pushback that the proposed tax information reporting is too intrusive and/or the concomitant administrative burdens are too onerous to justify its imposition.[94]

88. *See* I.R.C. § 6694(a)(1).

89. *See id.*

90. A Westlaw search conducted on August 1, 2022, in the Federal Cases library using the query "6694(a)" retrieved a total of 155 cases.

91. *See generally* Jay A. Soled, *Homage to Information Returns*, 27 VA. TAX REV. 371 (2007) (expounding the virtues of information returns).

92. *See* INTERNAL REVENUE SERV., FEDERAL TAX COMPLIANCE RESEARCH: TAX GAP ESTIMATES FOR TAX YEARS 2008-2010, at 11 (2016), https://www.irs.gov/pub/irs-soi/p1415.pdf [https://perma.cc/ACQ2-LF93] (noting that the voluntary compliance rate with respect to income subject to withholding and substantial information reporting is ninety-nine percent; by contrast, in the absence of withholding and information reporting, the compliance rate is estimated to be thirty-seven percent).

93. *See, e.g.*, Patient Protection and Affordable Care Act, Pub. L. No. 111-148, § 9006, 124 Stat. 119, 855 (2010) (beginning in 2012, greatly expanding the scope of information reporting by requiring businesses that pay any amount greater than $600 during the year to corporate providers of property and services to file an information report with each provider and with the IRS).

94. In 2021, the Biden Administration proposed having financial institutions report data on financial accounts on an information return. DEP'T OF THE TREASURY, GENERAL EXPLANATIONS OF THE ADMINISTRATION'S FISCAL YEAR 2022 REVENUE PROPOSALS 88 (2021), https://home.treasury.gov/system/files/131/General-Explanations-FY2022.pdf [https://perma.cc/E9XB-6MSF]. However, commentators have lamented that the expansion of such reporting could put taxpayer privacy at risk. *See, e.g.*, Christopher Giancarlo & Jim

Another possible way to secure taxpayer compliance would be for Congress to simplify the Code. A significant segment of taxpayer noncompliance is attributable to the fact that notwithstanding earnest efforts, taxpayers and their advisors fail to grasp the Code's intricacies, resulting in their failure to be compliant.[95] Consider Code section 199A and its application. At the time of its enactment, it was "a new tax deduction for pass-through entities and sole proprietors and is widely regarded as one of the most important provisions enacted in the 2017 tax legislation."[96] The regulations that detail its qualifications, however, span endless pages, infused with mind-numbing terms of art that even the most skilled of practitioners have a difficult time parsing.[97] In lieu of introducing this Code section, Congress could have largely, albeit imperfectly, accomplished the same result by reducing the tax rate on all income earned by pass-through entities and proprietorships.

A final way for Congress to boost taxpayer compliance would be to increase IRS funding. Over the course of the last two decades, IRS funding has languished.[98] This has resulted in the number of audits conducted by the agency to plummet to some of the lowest levels on record.[99] There are numerous studies indicating that when taxpayers know that their chances of being audited are virtually nonexistent,

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Harper, *Guest View: Biden Tax Crusade Puts Privacy at Risk*, REUTERS (Sept. 29, 2021, 11:00 AM), https://www.reuters.com/breakingviews/guest-view-biden-tax-crusade-puts-privacy-risk-2021-09-29/ [https://perma.cc/MKW3-U4E6] ("[The proposed legislation] would cover every bank transaction over $600—and when coupled with an inevitable shift from traditional money to government-issued digital currencies, constitute a glaring, perhaps unconstitutional invasion of personal privacy.").

95. *See, e.g.*, U.S. GOV'T ACCOUNTABILITY OFF., GAO-11-747T, TAX GAP: COMPLEXITY AND TAXPAYER COMPLIANCE 17 (2011), https://www.gao.gov/assets/gao-11-747t.pdf [https://perma.cc/D86P-P6MV] ("Congressional efforts to simplify the tax code and otherwise alter current tax policies may help reduce the tax gap by making it easier for individuals and businesses to understand and voluntarily comply with their tax obligations.").

96. Shu-Yi Oei & Leigh Osofsky, *Legislation and Comment: The Making of the § 199A Regulations*, 69 EMORY L.J. 209, 212 (2019).

97. Prop. Treas. Reg. §§ 1.199A-1 to 1.199A-6, 1.643(f)-1, 83 Fed. Reg. 40,884, 40,911-30 (Aug. 16, 2018). Final regulations were issued on February 8, 2019. Qualified Business Income Deduction, 84 Fed. Reg. 2952 (Feb. 8, 2019).

98. *See, e.g.*, H. Wayne Cecil & Teresa A. King, *Understanding the Federal Tax Gap: A Closer Look at Declining IRS Enforcement Activities*, CPA J., https://www.cpajournal.com/2017/11/06/understanding-federal-tax-gap/ [https://perma.cc/5BEE-8PEJ] (last visited Apr. 10, 2024) ("The data suggests that the IRS has received insufficient funding for its efforts to examine returns, conduct collections, and enforce noncompliance.").

99. *See, e.g.*, U.S. GOV'T ACCOUNTABILITY OFF., GAO-22-104960, TAX COMPLIANCE: TRENDS OF IRS AUDIT RATES AND RESULTS FOR INDIVIDUAL TAXPAYERS BY INCOME (2022), https://www.gao.gov/assets/gao-22-104960.pdf [https://perma.cc/XKA6-PUQ6] ("From tax years 2010 to 2019, audit rates of individual income tax returns decreased for all income levels. On average, the audit rate for these returns decreased from 0.9 percent to 0.25 percent. Internal Revenue Service (IRS) officials attributed this trend primarily to reduced staffing as a result of decreased funding. Audit rates decreased the most for taxpayers with incomes of $200,000 and above.").

they are generally more aggressive in their tax reporting practices.[100] Were Congress thus to allocate greater resources to the IRS (recently, some extra resources were legislatively inaugurated,[101] but more are needed), the agency could modernize its oversight equipment and likely conduct more thorough and detailed audits, thereby yielding greater taxpayer compliance.

Notwithstanding the potential viability of all of the foregoing ideas to augment taxpayer compliance, not one of them capitalizes upon the merits of AI and the virtues of predictive analytics. While commentators would not categorize any of the foregoing methodologies as being anachronistic (indeed, most of the world's tax authorities currently rely on these and similar approaches),[102] they nevertheless appear moored in twentieth-century thinking. Given the vast technological changes the world has undergone and the massive amounts of data that now are available with one or more keystrokes, the time has come for Congress, the IRS, taxpayers, and tax practitioners to exploit the transformative power of AI and predictive analytics.

II. THE POWER OF PREDICTIVE ANALYTICS

Despite the modern income tax being in existence for well over a century now, it is only in the last few years that predictive analytics has gained any traction and been considered to have any practical application in the tax realm. This is because basic tax computations generally pertain to events that have occurred in the past. By contrast, predictive analytics affords a crystal ball of sorts to enable taxpayers to peer into the future and, for example, gauge the legitimacy of a potential transaction or determine whether a particular tax classification is meritorious. This unique and yet untapped vantage point can help taxpayers navigate potential tax penalty exposure.

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100. *See* Paul J. Beck et al., *Experimental Evidence on Taxpayer Reporting Under Uncertainty*, 66 ACCT. REV. 535, 552 (1991) ("In particular, we found that increases in the penalty rate and audit probability resulted in significantly higher levels of taxable income being reported . . . .").

101. In the recently enacted Inflation Reduction Act of 2022, with the ambition of helping narrow the tax gap, Congress granted the IRS greater funding. *See* Kelley R. Taylor, *Are 87,000 New IRS Agents Coming for Your Tax Dollars?*, KIPLINGER, https://www.kiplinger.com/taxes/605107/new-irs-agents-and-the-inflation-reduction-act [https://perma.cc/F8HD-GP34] (last updated Jan. 10, 2023) ("Talk of new IRS agents has been in the news since the Inflation Reduction Act allocated $80 billion in increased funding for the IRS over ten years. The idea is that the funds could help improve tax compliance, which could bring in an estimated $203 billion in increased revenue.").

102. *See, e.g.*, Arthur Cockfield, *Secrets of the Panama Papers: How Tax Havens Exacerbate Income Inequality*, 13 COLUM. J. TAX L. 45, 69 (2021) ("With respect to offshore tax evasion, the main global response is the Common Reporting Standard, which contemplates the exchange of taxpayer account information across borders to help tax authorities identify and audit their resident tax cheats.").

As predictive analytics becomes more refined and accurate, it will no doubt play an increasingly important role in enabling taxpayers to engage in meaningful tax planning and to do so with greater confidence that their actions will pass tax muster. Below, Section A summarizes the nature of predictive analytics. Next, Section B details the successful and widespread application of predictive analytics. Section C then elaborates on possible risks and costs associated with predictive analytics. Finally, Section D describes how predictive analytics can play a pivotal role in tax practice.

A. What Is "Predictive Analytics"?

Predictive analytics describes a particular type of artificial intelligence that relies on large quantities of data to make predictions.[103] On the one hand, using data to make predictions is nothing new: scientists and other experts have been doing so for decades.[104] For example, in a clinical trial of a new medication, doctors might collect data on side effects experienced by trial participants, as well as the medicine's efficacy, to make predictions about the best course of treatment for a particular disease.

But what separates predictive analytics from past decades of data science is that advances in technology now allow massive amounts of data (so called "big data") to be collected, stored, and analyzed by computers at a speed and scale that was not possible in earlier years.[105] Once the data is collected, so called "machine learning programs" can analyze big data and look for patterns quickly, making connections that humans may miss.[106] Because this is an automated process, the computers look for correlations rather than causes: for example, a

103. *See, e.g.*, Jessica M. Eaglin, *Predictive Analytics' Punishment Mismatch*, 14 I/S: J.L. & POL'Y FOR INFO. SOC'Y 87, 87 (2017) (" 'Predictive analytics' refers to the use of statistically analyzed data to predict future outcomes.").

104. *See* Gil Press, *A Very Short History of Data Science*, FORBES (May 28, 2013, 9:09 AM), https://www.forbes.com/sites/gilpress/2013/05/28/a-very-short-history-of-data-science/?sh=382e07a355cf [https://perma.cc/5TL2-FQDT] ("But making sense of data has a long history and has been discussed by scientists, statisticians, librarians, computer scientists and others for years.").

105. *See* VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK 6 (2013) ("[B]ig data refers to things one can do at a large scale that cannot be done at a smaller one, to extract new insights or create new forms of value . . . .").

106. *Id.* at 12 ("[Big data is] about applying math to huge quantities of data in order to infer probabilities . . . . The key is that these systems perform well because they are fed with lots of data on which to base their predictions."); ERIC SIEGEL, PREDICTIVE ANALYTICS: THE POWER TO PREDICT WHO WILL CLICK, BUY, LIE, OR DIE 36 (2016) ("Machine learning crunches data to build the model, a brand-new prediction machine. The model is the product of this learning technology—it is itself the very thing that has been learned. . . . Predictive modeling generates the entire model from scratch. All the model's math, weights, or rules are created automatically by the computer. The machine learning process is designed to accomplish this task, to mechanically develop new capabilities from data. This automation is the means by which [predictive analytics] builds its predictive power.").

machine learning program might be able to alert users to what day of the week is the cheapest to buy airline tickets by analyzing patterns among all airlines.[107] What's more, the predictive power of these programs improves over time as they are fed more data.[108]

Amazon presents a familiar and fascinating case study of how big data and predictive analytics have outperformed humans at making predictions.[109] In its early days as an online book seller, Amazon hired human book critics to write reviews and make recommendations to readers on its website.[110] Gradually, the company began experimenting with examining data to make recommendations, at first attempting to analyze samples of customers to recommend books similar to customers' past purchases.[111] However, a breakthrough came when a software engineer realized that the company did not need to analyze individual customers (which was time consuming and labor intensive); instead, the computer could be programmed to find connections among the products themselves.[112] If purchases of *The Catcher in the Rye* were often accompanied by purchases of *Of Mice and Men*,[113] the program would recommend the latter to anyone who purchased the former. Once Amazon expanded to selling other types of products, its recommendations did as well: for example, a purchase of a child's bike might be accompanied by a recommendation to buy a helmet.[114]

When Amazon compared sales generated by its human editors to those generated by its computer program, the computer dominated by a large margin.[115] Today, as much as one-third of the company's sales come from its automated, personalized recommendations.[116] Many other companies have followed suit, such as Netflix, which recom-

107. MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 14 ("The correlations may not tell us precisely *why* something is happening, but they alert us *that* it is happening. . . . [I]f we can save money by knowing the best time to buy a plane ticket without understanding the method behind airfare madness, that's good enough.").

108. *Id.* at 12 ("Moreover, the systems are built to improve themselves over time, by keeping a tab on what are the best signals and patterns to look for as more data is fed in.").

109. *Id.* at 50-52.

110. *Id.* at 50.

111. *Id.* at 50-51.

112. *Id.* at 51.

113. J.D. SALINGER, THE CATCHER IN THE RYE (1951); JOHN STEINBECK, OF MICE AND MEN (1937).

114. *See* MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 51.

115. *Id.* at 51-52 ("[T]he results were not even close. The data-derived material generated vastly more sales. . . . Eventually the editors were presented with the precise percentage of sales Amazon had to forgo when it featured their reviews online and the group was disbanded.").

116. *Id.* at 52.

mends the next show a viewer might want to binge, and Facebook, which suggests ads for users to click and "people you may know" for users to connect with.[117]

B. Real-World Applications of Predictive Analytics

Beyond the world of online shopping and social media, the use of predictive analytics is ubiquitous.[118] This Section surveys several other real-world applications, including uses by both the private sector and the government. This discussion is by no means exhaustive, but it considers examples that fall along a spectrum of situations, from those that have only a minimal impact on individuals' rights to those that have a substantial impact. Specifically, this Section considers the following: (1) fraud alerts by banks; (2) consumer credit scores; (3) IRS enforcement; and (4) criminal sentencing and parole decisions.

1. Fraud Alerts

The Internet has made it easier than ever before for bad actors to engage in fraud and theft, particularly when it comes to credit cards and online payment applications like PayPal.[119] Relying solely on humans to monitor online transactions and watch for signs of fraud is costly and only minimally effective.[120] However, banks, companies like PayPal, and other private businesses have successfully capitalized on predictive analytics to significantly reduce fraud.[121] More specifically, these companies use data to assign predictive scores to transactions, which can trigger an alert in the case of suspected fraud.[122] For example, a bank may send a customer a fraud alert text if a particularly large transaction occurs with her debit card, or if something is purchased with the card overseas. Such fraud detection benefits these financial enterprises and the customer alike, often at only a modest cost.

2. Credit Scores

Another well-known application of predictive analytics is consumer credit scores, produced by the Fair Isaac Corporation ("FICO") and

117. *See, e.g.*, SIEGEL, *supra* note 106, at 6-7 (discussing common examples of predictive analytics, including Facebook).

118. For a discussion of numerous case studies, including ConEd, Ford, Google, Match.com, Pfizer, Uber, and UPS, see *id.* cent. tbls. & app. B.

119. *See, e.g.*, *id.* at 70-71 ("Online transaction giant PayPal suffered an almost 20 percent fraud rate soon after it was launched, a primary threat to its success.").

120. *See id.* at 70 ("A team of enforcement workers can inspect only a fixed number of suspected transactions each week.").

121. *See id.* at 70-71 (describing how PayPal's use of predictive analytics brought its fraud rate down from twenty percent to under one percent).

122. *Id.*

other businesses like Experian and TransUnion.[123] These companies rely on data to assign a predictive score to a consumer that is often relied upon by lenders: individuals with a higher score are more likely to secure a loan and/or secure a loan with better terms.[124] However, the use of these predictive scores goes well beyond consumer credit. FICO, for example, also uses data (such as marital status, age, and employment) to produce a "Medication Adherence Score."[125] The score helps health insurance companies and health care providers target which patients may need additional reminders or other interventions to take their medication.[126]

3. IRS Audits and Enforcement

The IRS has long relied on data to monitor tax compliance; historically, it has relied on random audits to create a database used to predictively score future returns for audit.[127] However, in recent years, the agency has increasingly turned to big data and predictive analytics to identify tax cheats.[128] Rather than relying solely on information collected from taxpayer audits, the IRS now collects vast quantities of data from publicly available sites like Facebook, YouTube, Google

123. *See* Meta S. Brown, *Credit Scores: Everyday Predictive Analytics*, FORBES (Aug. 31, 2015, 2:12 PM), https://www.forbes.com/sites/metabrown/2015/08/31/credit-scores-everyday-predictive-analytics/?sh=5d2190ce150e [https://perma.cc/U27G-7M6Q] ("Fair Isaac's scores are based on behavioral data: whether the consumer pays on time, amount owed and so forth, and the factors used are public. Some scores may use other factors, such as where you went to school, SAT scores and whether you have dropped a phone number."); MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 56.

124. Brown, *supra* note 123.

125. *See* MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 56; Tara Parker-Pope, *Keeping Score on How You Take Your Medicine*, N.Y. TIMES (June 20, 2011, 5:23 PM), https://archive.nytimes.com/well.blogs.nytimes.com/2011/06/20/keeping-score-on-how-you-take-your-medicine/ [https://perma.cc/7BJ3-4EM6] ("The score was created using data from a large pharmacy benefits manager that provided information for a random sample of nearly 600,000 anonymous patients with diabetes, heart disease and asthma. Using the data set, FICO was able to track the patterns of patients who filled and refilled prescriptions and those who didn't. The company used the data to identify the variables most associated with medication adherence and developed a risk score on a scale of 0 to 500.").

126. Parker-Pope, *supra* note 125.

127. *See* Jason B. Freeman, *The IRS and Big Data: The Future of Fighting Tax Fraud*, TODAY'S CPA, Jan.-Feb. 2019, at 5, https://www.tx.cpa/docs/default-source/communications/2019-today%27s-cpa/january-february/taxtopics-irs-bigdata-jan-feb2019-today%27scpa.pdf?sfvrsn=a165f2b1_4 [https://perma.cc/JU6F-3DDZ] ("The IRS first began using computers to select tax returns for audit in 1962 . . . . By 1969, it was employing the automated Discriminant Function Analysis (DIF), a computerized, statistical method that rates tax returns based on their so-called 'DIF' score and selects them for audit based on the probability that they contain an error or evasion. The DIF system has been refined over the years and is currently the IRS' primary statistical method for selecting tax returns for audit.").

128. *Id.* at 5-6; *see also* Kimberly A. Houser & Debra Sanders, *The Use of Big Data Analytics by the IRS: What Tax Practitioners Need to Know*, 128 J. TAX'N 6, 6 (2018) ("[T]he persistent reduction of the IRS budgets has caused the use of data analytics to become more important in the drive for innovation, risk management, and decision making for the IRS.").

Maps, X (formerly known as Twitter), and LinkedIn.[129] This data is combined with the IRS's pre-existing databases to identify noncompliant taxpayers; for example, the IRS might identify a mismatch between a taxpayer's lifestyle and reported income.[130] Notwithstanding significant cuts to the IRS budget in recent years, the agency reports that reliance on big data has increased its criminal fraud detection success rate by 400 percent.[131]

4. Criminal Sentencing and Parole

Finally, many states use predictive analytics to assign scores to criminal defendants to inform sentencing decisions by judges and/or release decisions by parole boards.[132] For both sentencing and parole, one important consideration is often the likelihood that the criminal will reoffend: those deemed more inclined to commit another crime are generally more likely to receive a prison sentence instead of probation and less likely to be let out on parole.[133] In recent years, many governments have moved toward a more "evidence-based" approach to sentencing and parole, which looks at big data statistics to assign an individual score meant to predict the likelihood of recidivism.[134] Though using predictive analytics in these situations is not without controversy (discussed further in Section C below), proponents argue that using data to inform criminal punishment can overcome well-documented human biases in decisionmaking.[135]

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129. Freeman, *supra* note 127, at 5-6; Houser & Sanders, *supra* note 128, at 1-2.

130. *See* Houser & Sanders, *supra* note 128, at 1-2. Houser and Sanders caution, however, that use of social media to target IRS enforcement may be problematic because, in part, individuals often post "airbrushed" versions of their lives on social media that exaggerate their true circumstances. *Id.* at 12.

131. Freeman, *supra* note 127, at 5 ("[T]he IRS' Criminal Investigation Division reported that, despite significant workforce cuts, it had identified approximately 400 percent more tax fraud than in the prior year and over 1,000 percent more in proceeds from other financial crimes compared to the prior year. The IRS credits the prioritization of data, including its use of data analytics, algorithms and 'predictive policing,' as drivers behind these major strides."); Richard Rubin, *AI Comes to the Tax Code*, WALL ST. J. (Feb. 26, 2020, 5:30 AM), https://www.wsj.com/articles/ai-comes-to-the-tax-code-11582713000 [https://perma.cc/K69D-WW22] ("Governments are increasingly relying on machine learning and data analytics to analyze troves of data as they seek to detect tax evasion . . . .").

132. *See* MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 158; Eaglin, *supra* note 103, at 90-91. Similarly, a growing number of cities are using predictive analytics for so-called "predictive policing," which helps law enforcement identify particular geographic areas or times of day in which to allocate resources. MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 158; Eaglin, *supra* note 103, at 90.

133. *See* Eaglin, *supra* note 103, at 92-93; MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 161.

134. *See* Eaglin, *supra* note 103, at 92 ("Developers use statistical analysis of people previously arrested or convicted of crimes to identify factors that correlate with the occurrence of a particular triggering event, defined as recidivism, in the future.").

135. *See id.* at 92-93 ("Enthusiasm for the tools can be understood in part by the cultural embrace of data-driven interventions to reduce or eliminate human errors in various fields

C. *Potential Risks and Costs Posed by Predictive Analytics*

Though data-driven approaches can overcome human error, the use of predictive analytics is not without risks and costs.[136] More specifically, as discussed below, the degree of risk and the magnitude of the potential cost vary greatly depending on the factual context. For example, combing social media to target advertising raises privacy concerns but does not infringe on individual liberty, whereas relying on crime statistics to inform sentencing decisions does not raise privacy concerns but raises important due process questions. This Section discusses four important risks related to predictive analytics: (1) privacy; (2) bias; (3) accuracy and due process; and (4) transparency.

1. *Privacy*

When governments or private businesses collect personal information, such as that mined from social media sites like Facebook and X, there is a risk that sensitive information will be revealed.[137] A well-known example is when Target used data to predict which customers were pregnant based on their purchases (such as vitamins) and then sent targeted advertisements for baby products to those customers, apparently sometimes before they had revealed their pregnancies.[138] Even without a revelation of private information to others, individuals simply may not like the idea that governments (for example, the IRS) or businesses are monitoring their social activity without their knowledge or explicit consent.[139]

However, not all big data contains private information, and not all uses of individual information violate privacy.[140] For example, in the bank fraud detection example discussed in Section B, an individual's bank might flag transactions identified by the computer as out of the ordinary. However, it is reasonable to assume that bank customers

. . . ."); *see also* Daniel L. Chen, *Judicial Analytics and the Great Transformation of American Law*, 27 A.I. & L. 15, 22-28 (2019) (discussing the use of data to identify human errors frequently made by judges, such as granting more lenient decisions earlier in the day, on the defendant's birthday, or when a local sports team has recently won).

136. *See, e.g.*, Dennis Hirsch, *Predictive Analytics Law and Policy: A New Field Emerges*, 14 I/S: J.L. & POL'Y FOR INFO. SOC'Y 1, 4 (2017) (identifying the four main risks of predictive analytics as privacy, bias, error/due process, and exploitation).

137. *Id.*

138. *Id.* (describing the Target episode as "classic privacy injury"); MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 57-58.

139. *See, e.g.*, MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 152 ("It is tempting to extrapolate the danger to privacy from the growth in digital data and see parallels to Orwell's surveillance dystopia *1984*.").

140. *See, e.g.*, *id.* ("[N]ot all big data contains personal information. Sensor data from refineries does not, nor does machine data from factory floors or data on manhole explosions or airport weather.").

consent to the bank's monitoring of the funds deposited with the bank and that the customer in fact desires the bank to protect the account from fraud.

In other cases, datasets may be stripped of personal identifying information before they are analyzed for broader trends.[141] For example, a toy retailer might be interested in knowing that purchasers of remote-control cars also purchase batteries, without necessarily knowing who the individual purchasers are. However, commentators note that even anonymized data can often be traced back to individuals, and that anonymization is increasingly difficult given the vast amounts of big data available.[142]

2. Bias

Although proponents of predictive analytics laud its ability to overcome human bias in decisionmaking, there is also a risk that data-driven approaches will exacerbate bias. One possibility is that bad actors could simply rely on data to make biased decisions, for example, by using an algorithm to predict which potential employees may become pregnant and not hire them on that basis.[143] But predictive analytics might also perpetuate biased outcomes simply because the data fed into the computer already reflects societal bias.[144] Consider, for example, a company that wants to employ predictive analytics to search for its new CEO. It might do so by relying on a machine learning program that identifies traits of the CEOs of the most successful companies of comparable size. It does not take much imagination to conjure a scenario where the program detects that the most common traits of a successful CEO are white and male, thereby assigning a higher "score" to prospective white, male candidates.[145] The result, as described by Professor Dennis Hirsch, is "a data-driven, 'objective' basis for hiring more men for high-level executive positions, thereby masking and perpetuating the human bias inherent in the data itself."[146]

The risk of bias in using predictive analytics depends on the purpose for which the data is being used. Targeted advertising on Facebook poses a low risk of bias. However, there is much at stake in ensuring that data is not biased when making life-altering determinations like criminal sentencing, as well as other important decisions like who to hire or whether to extend credit.

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141. *Id.* at 154-55.

142. *Id.* at 154-56.

143. *See, e.g.*, Hirsch, *supra* note 136, at 5.

144. *See, e.g.*, *id.* at 6; *see also* Eaglin, *supra* note 103, at 97-98 (discussing the risk that predictive analytics may identify factors that courts are typically not allowed to consider, such as gender, employment, or family ties, in predicting recidivism among criminal defendants).

145. *See, e.g.*, Hirsch, *supra* note 136, at 6.

146. *Id.* (citing CATHY O'NEIL, WEAPONS OF MATH DESTRUCTION 27 (2016), which describes this perpetuation of bias as a "feedback loop").

3. Accuracy and Due Process

Perhaps the biggest risk of applying predictive analytics—the risk that could impose the largest potential cost—is that the predictions made by big data may simply be inaccurate when applied to individuals.[147] The stakes are low in some contexts. If, based on a faulty prediction made by the company's algorithm, Amazon suggests a product that an individual doesn't like, the consumer can simply ignore the recommendation. But determinations like jail sentencing decisions clearly have enormous implications and raise important due process questions. For example, if a machine learning program predicts that a criminal defendant is highly likely to reoffend based on statistics of crimes committed by others, can that data be used to subject the defendant to a longer sentence? In some circumstances, courts have allowed predictive scores to be considered in sentencing decisions,[148] but some academic scholars have argued that using statistics to make predictions about individuals' future behavior violates fundamental rights.[149]

4. Transparency

Related to the concern about the accuracy of predictions made by big data is the fact that the algorithm itself may have a "black box" quality to it. Indeed, some commentators have argued that this is what makes predictive analytics problematic: human experts are prone to error, including making erroneous predictions, but predictions made by machines may simply be harder to detect.[150] Further, private businesses that use analytics to make pivotal business decisions may be reluctant to share how they process their data (labeling it a "trade secret"), generating an opaque air, immutable to challenge or scrutiny.[151]

At least in the context of sentencing, courts have responded to transparency concerns by allowing defendants the opportunity to challenge the application of predictive analytics to their individual circumstances and to allow other guiding factors to shape the outcome.

147. *See, e.g.*, *id.*; Eaglin, *supra* note 103, at 98-99.

148. *See, e.g.*, State v. Loomis, 881 N.W.2d 749, 768-71 (Wis. 2016) (holding that the consideration of a data-driven "risk assessment tool" at sentencing did not violate the defendant's due process rights when it was used in consideration with other factors and was not determinative).

149. *See, e.g.*, Eaglin, *supra* note 103, at 99 ("Because risk is simply the compilation of underlying factors with varying degrees of legitimacy, justice requires considering the development process when determining whether tools undermine fairness at sentencing, not just the predictive outcome."); MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 151 ("[T]he possibility of using big-data predictions about people to judge and punish them even before they've acted. . . . negates ideas of fairness, justice, and free will.").

150. Hirsch, *supra* note 136, at 6 ("[T]he risk is not just one of error. It is a diminishing of the individual's ability to know about and challenge that error.").

151. *Id.* at 8 ("What about the company's proprietary interest in the algorithm that it has developed? Does trade secrecy trump Due Process in this context?").

For example, in *State v. Loomis*,[152] the Wisconsin Supreme Court allowed predictive analytics to be used as a consideration in sentencing, despite the fact that the program that produced the predictive score was considered a trade secret by the business that created it.[153] In that case, the court found it acceptable that the defendant could review and challenge the "risk score" he was assigned by the program, even if he could not challenge the algorithm itself.[154] Further, the court upheld consideration of the score because it was considered along with other evidence and was accompanied by disclosure about the limitations of relying on a computer algorithm.[155]

D. Natural Synergy Between Civil Tax Penalty Assessments and Predictive Analytics

In advocating for the use of predictive analytics in tax penalty determinations, all of the aforementioned risks and costs are worthy of consideration. However, the risks and costs associated with using predictive analytics for tax penalty determinations are particularly low, making civil tax penalties an ideal setting for application of predictive analytics technology.

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152. 881 N.W.2d 749.

153. *Id.* at 761 ("Northpointe, Inc., the developer of COMPAS, considers COMPAS a proprietary instrument and a trade secret. Accordingly, it does not disclose how the risk scores are determined or how the factors are weighed.").

154. *Id.*

155. *Id.* at 769-70. The court explained:

> Any Presentence Investigation Report ("PSI") containing a COMPAS risk assessment filed with the court must contain a written advisement listing the limitations. Additionally, this written advisement should inform sentencing courts of the following cautions as discussed throughout this opinion:
>
> - The proprietary nature of COMPAS has been invoked to prevent disclosure of information relating to how factors are weighed or how risk scores are determined.
> - Because COMPAS risk assessment scores are based on group data, they are able to identify groups of high-risk offenders—not a particular high-risk individual.
> - Some studies of COMPAS risk assessment scores have raised questions about whether they disproportionately classify minority offenders as having a higher risk of recidivism.
> - A COMPAS risk assessment compares defendants to a national sample, but no cross-validation study for a Wisconsin population has yet been completed. Risk assessment tools must be constantly monitored and re-normed for accuracy due to changing populations and subpopulations.
> - COMPAS was not developed for use at sentencing, but was intended for use by the Department of Corrections in making determinations regarding treatment, supervision, and parole.

Id. (footnote omitted). Scholars have also suggested that a third-party expert could certify the validity of an algorithm when making it public would reveal proprietary information. *See* MAYER-SCHÖNBERGER & CUKIER, *supra* note 105, at 176.

1. *The Application of Predictive Analytics to Tax Penalty Determinations*

Before turning to analysis of the potential risks and costs of applying predictive analytics in the context of civil tax penalties, it is useful to consider what this application might look like. Recall that predictive analytics is a process by which machine learning programs analyze data for patterns to make predictions.[156] In a legal setting, the data fed into the program could come from published judicial and administrative determinations.[157] For example, in tax cases, a machine learning program might find correlations between particular facts of cases and outcomes of those cases that potentially would go unnoticed by even trained tax lawyers simply because of the sheer volume of data that can be processed by the computer at lightning speed.[158] By analyzing the facts and outcomes of cases that have already been decided, the computer program could then predict the outcome of future cases.[159]

The civil tax penalty regime is uniquely situated for use of predictive analytics because it specifically relies on the probability of taxpayers prevailing on the merits in their tax disputes.[160] Recall, for example, that if a taxpayer underreports her income and the IRS asserts a negligence penalty, she can avoid application of the penalty if she can show that she had a "reasonable basis" for her position, which is generally a twenty percent likelihood of success on the merits of the case.[161]

By way of illustration, assume that a taxpayer receives a free car from a business associate and does not report the car as income because she believes it to be a gift.[162] Further assume that the IRS audits the taxpayer and alleges that the car should have been reported as income, informing the taxpayer that she owes tax on the fair market value of the car and imposing an additional twenty percent negligence penalty on the tax due. If the taxpayer prevails on the merits (either in court or through a settlement with the IRS), she will not owe the tax or the penalty. On the other hand, if the IRS prevails on the merits

156. *See supra* Section II.A.

157. Benjamin Alarie & Bettina Xue Griffin, *Using Machine Learning to Crack the Tax Code*, 174 TAX NOTES FED. 661, 662 (2022).

158. *Id.* ("A tax practitioner will find it particularly challenging to read over 300 cases on any given legal issue and rank the facts in order of their precise effect on the outcome, but [a machine learning] model is capable of accomplishing such a feat with reasonable accuracy.").

159. Part IV below discusses specific case studies where predictive analytics could be used (and in some circumstances, has been used) in predicting the outcome of tax cases. For example, the company Blue J Legal uses machine learning to predict the outcome of tax disputes; Blue J's CEO states that the company's predictions align with actual IRS and court decisions over ninety-four percent of the time. *See infra* Part IV.

160. *See supra* Section II.A.

161. *See supra* notes 47-54 and accompanying text.

162. *See* Comm'r v. Duberstein, 363 U.S. 278, 289 (1960) (holding the fair market value of an automobile to be taxable compensation to its recipient based on the facts and circumstances of the case).

(meaning that the car was, in fact, reportable as income), she will owe the tax, but it is possible that she can still avoid imposition of the penalty if she can demonstrate based on legal authority that she had a reasonable basis for her position (and that the failure to report this income did not result in a substantial understatement of her tax liability).

Enter predictive analytics. With a machine learning program using data from past disputes involving whether an item was a gift or compensation, the taxpayer and the IRS could obtain a prediction—in the form of a percentage—about how likely the taxpayer would be to prevail in her particular case. To use the program, the taxpayer could populate an online questionnaire that solicited relevant facts, such as the nature of her relationship with the donor of the purported gift, the fair market value of the purported gift, whether other compensation exchanged hands, and the presence of an ongoing business relationship.[163] If, in the above example, the program predicted that the taxpayer's chance of succeeding on the merits was twenty percent or greater, she would be able to show that she had a "reasonable basis" for her position and avoid a negligence penalty, despite owing tax. This would obviate the need for the taxpayer and the IRS to expend time and resources litigating this issue.

The use of predictive analytics in tax disputes is not hypothetical. Part IV presents three case studies that demonstrate the utility of machine learning programs to predict tax dispute outcomes. Although not every dispute would lend itself to using predictive analytics (e.g., novel fact patterns or the application of newly crafted legislation), in many instances it would be a highly efficient means to determine possible penalty application. Before turning to the specific case studies, the next Section evaluates the possible risks of using predictive analytics in this context.

2. Assessment of Risks

When it comes to using predictive analytics, scholars have raised concerns about privacy, bias, accuracy and due process, and transparency.[164] However, given the particular role that probability-based predictions might play in assessing civil tax penalties, these risks are relatively low in this context, especially when compared to other legal applications of predictive analytics.

First, there is no violation of privacy in using predictive analytics for tax penalty determinations. This is because the data that would

163. *See, e.g.*, *id.* at 285-86 ("A gift in the statutory sense, on the other hand, proceeds from a 'detached and disinterested generosity,' 'out of affection, respect, admiration, charity or like impulses.' And in this regard, the most critical consideration, as the Court was agreed in the leading case here, is the transferor's 'intention.' " (citations omitted)).

164. *See supra* Section II.C.

serve as the basis for a machine learning program for civil tax penalties would be based on publicly available court records and administrative decisions. Hence, applying the program to predict a taxpayer's chance of success for a particular return reporting position poses no privacy risk to that taxpayer or to the individuals involved in the tax cases used as data points.

Second, the risk of bias is relatively low when it comes to using predictive analytics to determine whether taxpayers have sufficient legal authority to avoid civil tax penalties. As discussed above in Section II.C, a machine learning program can produce biased results when the data fed into the program itself is biased. Admittedly, in the realm of taxation, if the result of certain tax cases or administrative decisions reflects biased decisionmaking or other systemic biases, predictions based on those cases and administrative decisions may also be biased.[165] However, this risk is relatively low in this particular setting because the types of tax disputes that lend themselves to using predictive analytics for tax penalties (discussed below in Part IV) are likely to involve well-resourced, sophisticated taxpayers. These very same sophisticated taxpayers are also the ones most likely to be litigating whether they have substantial authority or a reasonable basis for tax penalty application purposes. The risk of bias due to socioeconomic status and legal representation, or other factors like race or gender, is undoubtedly less acute in a tax dispute over compensation versus dividend treatment, for example, than in the context of criminal sentencing. Further, to the extent that there are concerns about bias in certain areas of tax administration and enforcement, those legal areas should be carved out as ineligible for predictive analytics by the government.[166]

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165. For example, if low-income taxpayers lose tax disputes over the Earned Income Tax Credit ("EITC"), I.R.C. § 32, eligibility more frequently than other taxpayers lose other types of cases, this may be because the former cannot afford sophisticated tax counsel and are more likely to represent themselves pro se. *See* Adam S. Chilton et al., *The Earned Income Tax Credit, Low-Income Workers, and the Legal Aid Community*, 3 COLUM. J. TAX L. 177, 190 (2012) ("If the amount in dispute is less than $50,000 for a given tax year, as is typically the case with EITC claimants, tax filers are able to invoke the small case procedures that are provided for in the Tax Court's Rules of Practice and Procedure. These proceedings, which are often referred to as 'S' cases, are specifically designed to accommodate pro se representation." (footnote omitted)). If that were the case, a machine learning program may predict a low chance of taxpayer success in EITC disputes based on past cases, but that low success rate might reflect inadequate representation rather than non-meritorious claims.

166. Several legal scholars have raised concerns about racially biased tax enforcement. *See* Jeremy Bearer-Friend, *Colorblind Tax Enforcement*, 97 N.Y.U. L. REV. 101 (2022) (describing the potential for both explicit and implicit bias in IRS enforcement, including civil penalties); *see also* Steven A. Dean, *Filing While Black: The Casual Racism of the Tax Law*, 4 UTAH L. REV. 801 (2022) (describing the impact of systemic racial bias on tax policy); Leslie Book, *Tax Administration and Racial Justice: The Illegal Denial of Tax-Based Pandemic Relief to the Nation's Incarcerated Population*, 72 S.C. L. REV. 667 (2021) (describing how IRS enforcement can perpetuate racial bias). For example, in his important work, Professor Jeremy Bearer-Friend describes the risk of racial bias in imposition of civil fraud penalties due to IRS discretion in enforcement and consideration of indicia of fraud that may reflect

Third, accuracy and due process concerns, which are vitally important in contexts like criminal sentencing, are far less relevant here. This is because, unlike in the situations of criminal sentencing, granting parole, or even extending credit to a consumer, predictive analytics would not be used to forecast a taxpayer's future behavior. As scholars have observed, using data on past criminal offenses to predict whether an individual criminal defendant will reoffend raises important legal and ethical questions.[167] However, the goals of the civil tax penalty regime are different. More specifically, there is no need to predict a taxpayer's future tax reporting practices, and there is no issue with using data based upon past tax disputes. In fact, the very nature of the reasonable basis and substantial authority standards is that they look to past disputes—case law or other published authority—to determine whether a civil tax penalty should apply.[168] In this sense, for a taxpayer who loses her case on the merits, it simply does not matter that she was not involved in those past disputes. Through the statutory penalty regime, Congress has mandated that taxpayers (and the IRS) should look to precedent to determine whether a taxpayer should have known better in taking a tax position. In other words, civil tax penalty defenses are specifically designed to look at data—including legal decisions from past cases—to determine if taxpayers are liable for penalties. Thus, the civil tax penalty regime is crucially different from other legal settings like sentencing and parole and is particularly suited for the use of predictive analytics.

Finally, transparency concerns are no greater in this context than in any other legal setting in which predictive analytics is currently used, including criminal sentencing. The data used in making predictions would be publicly available court cases and administrative decisions. And although private businesses would no doubt want to maintain some secrecy with respect to their algorithms, taxpayers could be granted leeway to challenge the probability assigned to their particular case. Given that courts have upheld this approach in higher stakes settings like sentencing,[169] it seems likely that application of predictive

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systemic bias, such as the use of cash over traditional banking. *See* Bearer-Friend, *supra*, at 132-33. For this reason, application of predictive analytics should be limited to the accuracy-related penalties described in Section I.A and limited to determinations of whether taxpayers had sufficient legal authority to meet the "reasonable basis," "substantial authority," and "more likely than not" standards for defending against penalty imposition.

167. In the sentencing or parole context, or when a credit bureau scores a potential borrower, the idea of predictive analytics is to give a score that will serve as a best estimation for how that individual will act going forward: Is she likely to commit a crime? Is she likely to pay her bills on time? There is an inherent drawback to this method because others' actions are being used to predict what a unique individual might do next. The approach may be justified, in part, because the alternative is simply that humans (judges, for example) are forced to make their best predictions, which will often be more idiosyncratic to the person rendering the decision and thus potentially biased. *See supra* note 135 and accompanying text.

168. *See supra* Section I.A.

169. *See supra* notes 152-54 and accompanying text.

analytics to taxpayers in penalty determinations would withstand legal scrutiny as long as taxpayers had some mechanism to contest the results. For example, courts could afford the computer score presumptive weight while allowing taxpayers to overcome the presumption with sufficient evidence to show why they met the standard to avoid the tax penalty.

III. INSTITUTING PREDICTIVE ANALYTICS FOR TAX PENALTY DETERMINATIONS

Knowing the transformative powers of predictive analytics, it is now appropriate to explore how it might augment tax compliance. One must bear in mind that the intersection between tax, AI, and predictive analytics is not entirely novel. From at least two vantage points, AI and predictive analytics have already fundamentally shaped tax compliance. One is from the perspective of the government and the other from the perspective of the taxpayer. Consider each.

From a governmental perspective, the IRS has been combining AI and predictive analytics to identify potential tax fraud cases.[170] As the IRS perfects its technological capacities, the agency is enhancing its chances of detecting those taxpayers who are most likely to have been derelict in their tax reporting practices, enabling the agency to potentially cast a smaller net but retrieve a larger bounty.

Meanwhile, taxpayers too, in a multitude of fashions, are seeking to take advantage of AI, though less so, to date, with predictive analytics. By way of example, one area of tax compliance that has traditionally flummoxed both taxpayers and their advisors is in the realm of transfer pricing.[171] More specifically, in the past, taxpayers have had a difficult time determining how prices should be set when transfers are made between related parties (such as a sale between two subsidiaries of the same parent company).[172] In yesteryear, taxpayers and their advisors would ordinarily retain the services of skilled accountants and lawyers to make these determinations.[173] Now, utilizing AI,

170. *See supra* notes 121-22.

171. *See* Christopher Capuzzi, *Transfer Pricing and FIN 48: Removing Uncertainty Through the Advanced Pricing Agreement Process*, 30 NW. J. INT'L L. & BUS. 721, 740-41 (2010) ("Transfer pricing, without a doubt, remains a complex area fraught with subjective determinations and is often the source of tax adjustments by the relevant taxing authority. Moreover, in the United States, divergent standards evolving from the I.R.S. and the FASB have added undue complexity for preparers of financial statements and tax returns.").

172. *See, e.g.*, David A. Osborne, *Deterring Transfer Pricing Abuse: Changing Incentives as a Practical Alternative to a Global Tax Regime*, 10 WASH. U. GLOB. STUD. L. REV. 813, 819 (2011) ("The U.S. Department of Treasury regulations interpreting § 482 state that its purpose 'is to ensure that taxpayers clearly reflect income attributable to controlled transactions and to prevent the avoidance of taxes with respect to such transactions.' ").

173. *See, e.g.*, Davide Proietti, *Avoiding Tax Avoidance: A Rational Proposal to Close Existing Loopholes in the U.S. Corporate Tax System*, 12 FIU L. REV. 225, 244 (2016) ("[A] group of skilled accountants and lawyers can still manipulate the form of a transaction so as to maintain the substance of profit shifting.").

taxpayers and their advisors can secure accurate transfer prices. How? By scouring enormous databases faster and more cost efficiently and by locating those companies which operate in a similar manner with similar inventory price structures.[174]

But one area of tax compliance that has thus far gone unexplored by both the government and taxpayers is the role of technology in tax penalty determinations. To that end, Section A below explores how ex ante taxpayers, utilizing AI and predictive analytics, can ascertain the legitimacy of their tax reporting positions and thereby avoid tax penalty imposition. Next, Section B details how ex post the IRS, utilizing AI and predictive analytics, can more accurately ascertain the appropriateness of penalty imposition.

A. Pre-Audit: Calibrating the Legitimacy of a Particular Tax Reporting Position

When taxpayers ponder whether to proceed with a particular transaction, they are likely to consider a multitude of factors. Such considerations may include, but are not limited to, the economic costs and benefits associated with undertaking the particular transaction and its tax consequences. Presumably, if the merits of a proposed transaction (including its tax benefits) outweigh its shortcomings (including its tax burden), the taxpayer will likely proceed; if the converse is true, the transaction presumably will never get off the ground. As a practical reality, however, taxpayers must be sensitive to the fact that, depending upon the nature of the transaction in question, they may be susceptible to an IRS challenge, and, if they are too aggressive, they risk being penalized.

The same cost-benefit analysis likely extends to tax reporting positions. Along a spectrum, taxpayers may take tax reporting positions that are considered conservative, moderate, or aggressive. To illustrate, a taxpayer who is a physician may travel from her home to her office and then to the hospital five days a week. A conservative tax reporting position would be to deduct only one leg of these expenses, namely, traveling from the taxpayer's office to the hospital;[175] a

174. *See* Nicole Laskowski & Linda Tucci, *Artificial Intelligence (AI)*, TECHTARGET, https://searchenterpriseai.techtarget.com/definition/AI-Artificial-Intelligence [https://perma.cc/M8HX-NNV9] (last visited Apr. 10, 2024) ("While the huge volume of data created on a daily basis would bury a human researcher, AI applications using machine learning can take that data and quickly turn it into actionable information.").

175. *See, e.g.*, Chandler v. Comm'r, 226 F.2d 467, 469 (1st Cir. 1955) ("We believe that a taxpayer who is required to travel to get to a place of secondary employment which is sufficiently removed from his place of primary employment is just as much within the statutory provision as an employee who must travel at the behest of his employer."); Lopkoff v. Comm'r, 45 T.C.M. (CCH) 256 (1982) (holding that a taxpayer who had two jobs with two different employers was allowed to deduct the travel expenses she incurred in going between the two job locations even though the second of her two jobs was only a half-mile away from the taxpayer's home).

moderately aggressive tax reporting position would be to deduct two legs of these expenses, namely, the travel expenses that the taxpayer incurs traveling from her office to the hospital and then returning home;[176] finally, an aggressive tax reporting position would be for the taxpayer to deduct three legs of these expenses, namely, the costs of her travel expenses related to going to her office, traveling to the hospital, and then returning home.[177]

Taxpayers often have a visceral sense if their transactions or reporting positions have tax penalty vulnerability, namely, if they are on terra firma, very thin ice, or somewhere in between. In years past, taxpayers retained professional advisors who helped guide them in making this calculus.[178] Yet, it is fairly well-known or could be anticipated that tax professionals themselves harbored their own decisional bias associated with being remunerated by the party asking the question.[179] Put differently, there was no external mechanism—impregnable to decisional bias—that could help taxpayers verify if their own intuitive senses corresponded with reality.

And this is exactly where AI and predictive analytics can play a critical and decisive role in helping taxpayers shape their decisionmaking process when it comes to transactions that they wish to undertake or tax reporting positions that they wish to reflect. Sitting behind a computer monitor, taxpayers or their advisors can enter key terms into specialized software that can produce a set of

176. *See generally* Rev. Rul. 99-7, 1999-1 C.B. 361 (describing several possible scenarios in which travel expenses between home and work are nondeductible and other scenarios in which the travel expenses are deemed deductible).

177. *See, e.g.*, Pollei v. Comm'r, 877 F.2d 838 (10th Cir. 1989), *rev'g* 87 T.C. 869 (1986) (allowing a police captain to deduct commuting expenses when he left his residence because he was immediately on duty).

178. *See Protecting Taxpayers from Incompetent and Unethical Return Preparers: Hearing Before the S. Comm. on Fin.*, 113th Cong. 131 (2014) (written testimony of John A. Koskinen, Commissioner, Internal Revenue Service) ("Each year, paid preparers are called upon by taxpayers to complete about 80 million returns, or about 56 percent of the total individual income tax returns filed, while another 34 percent of taxpayers use tax preparation software, for a total of 90 percent who seek some form of assistance."); U.S. GOV'T ACCOUNTABILITY OFF., GAO-14-467T, PAID TAX RETURN PREPARERS 8 (2014), https://www.gao.gov/assets/d14467T.pdf [https://perma.cc/BTP7-XPDR] ("According to IRS's SOI data, an estimated 81.2 million or 56 percent of approximately 145 million individual tax returns filed for tax year 2011 were completed by a paid preparer.").

179. *See, e.g.*, Leslie Book, *Freakonomics and the Tax Gap: An Applied Perspective*, 56 AM. U. L. REV. 1163, 1175 (2007) (pointing out that tax return preparers are "monetized by the very refunds that taxpayers claim on tax returns," creating a "temptation for preparers to facilitate errors"); David T. Moldenhauer, *Penalty Protection Opinions and Advisor Conflicts of Interest*, 27 AKRON TAX J. 55, 59 (2012) ("In determining whether a taxpayer's reliance on professional tax advice is reasonable and undertaken in good faith, courts have considered whether the tax professional has a conflict of interest. The focus on conflicts of interest is understandable—if the tax professional has a personal interest in whether the taxpayer claims a position, the tax advice may not reflect an objective assessment of the position's merits. If the advice is not an objective assessment, but rather a self-interested assertion, there is little reason to permit the taxpayer to rely on the advice to avoid penalties, assuming that the taxpayer knew or should have known of the tax advisor's own interest.").

probabilities of possible judicial success were the issue in question adjudicated.[180] With this set of probabilities in hand, taxpayers can make far more accurate determinations of their chances of withstanding penalty imposition.

Taking AI one step further, Congress would be wise to reform the existing penalty regime. How so? It should engraft a reasonable cause exception to penalty imposition if taxpayers use this technology to calibrate probability thresholds specified earlier in this analysis (i.e., more likely than not, substantial authority, or reasonable basis) pertaining to their transactions and reporting positions.[181] The congressional institution of this reform would provide a beacon of light to taxpayers, hopefully leading them to undertake those transactions or to reflect those tax reporting positions that the Code approves, implicitly or explicitly, and that align with congressional revenue goals.

B. Post-Audit: Determining Whether Penalty Imposition Is Apropos

After a taxpayer makes a tax return submission, the IRS may conduct an audit. Depending upon what the IRS determines to be the legitimacy of the taxpayer's tax reporting position, the agency may impose tax penalties based upon objective standards (e.g., the taxpayer failed to meet a stated filing deadline). Alternatively, the agency may impose tax penalties based upon the subjective determinations of its agents (e.g., the taxpayer negligently determined his tax liability).

Over the years, subjective penalty determinations have been a hotbed of litigation.[182] Taxpayers have traditionally fought against their imposition with intense zeal. The number of such cases has resulted in much ink and toner being spilled.[183] Cases involving such a penalty imposition follow a traditional pattern: the IRS makes a proposed penalty assessment, the taxpayer avers that she met the probability of success in question, and then the courts are summoned to determine

180. For example, several years ago, a group of Canadian professors created an AI-enabled tool that can predict, with ninety percent accuracy, the results of twenty-five tax law issues. Bryan Borzykowski, *How AI Can Predict Tax Outcomes*, CHARTERED PRO. ACCTS. CAN. (July 4, 2018), https://www.cpacanada.ca/en/news/accounting/advisory/2018-07-04-ai-can-now-help-predict-tax-outcome-scenarios [https://perma.cc/FSA6-ZJFC].

181. I.R.C. § 6664(c).

182. *See, e.g.*, TAXPAYER ADVOC. SERV., 2012 ANNUAL REPORT TO CONGRESS 560 (2012), https://www.taxpayeradvocate.irs.gov/wp-content/uploads/2020/08/Most-Litigated-Issues-1.pdf [https://perma.cc/GN22-5GQP] (listing the "Accuracy-related penalty (IRC § 6662(b)(1) and (2))" as one of the nation's ten most litigated issues in federal courts from June 1, 2011, through May 31, 2012).

183. *See, e.g.*, ALAN J. TARR & PAMELA JENSEN DRUCKER, CIVIL TAX PENALTIES (2022), Bloomberg Tax Portfolio No. 634-4th (providing a comprehensive compendium of the Code's civil penalties and the numerous numbers of associated court cases).

the veracity of the IRS's and taxpayer's respective positions. As evidenced by the number of adjudicated cases, this pattern repeats itself ad infinitum.[184]

But AI combined with predictive analytics can put an end to all of this litigation turmoil or, at the very least, greatly diminish it. Consider the possibilities from two opposite vantage points. From the IRS's perspective, rather than have its agents make subjective determinations, twenty-first-century technology could erase this element of decisional bias, making penalty imposition a far more objective inquiry. From the opposite perspective, as a methodology to safeguard the legitimacy of their positions, taxpayers could invoke AI and predictive analytics to protect against penalty imposition (assuming that the requisite probability thresholds were met).

A heuristic hypothetical helps illustrate this point. Suppose a taxpayer invests in a tax shelter that putatively yields a $1 million tax deduction and $400,000 of tax savings. Suppose further, upon audit, that the IRS challenges the legitimacy of the transaction, and the examining agent determines that the substantial understatement penalty should be imposed because the tax theories undergirding the transaction lack substantial authority.[185] In yesteryear, the foregoing fact pattern could result in a litigation battle royale regarding the legitimacy of penalty imposition. Now, without court intervention, either the IRS or the taxpayer, or both, could use predictive analytics to determine whether penalty imposition is appropriate. The algorithm would produce a percentage likelihood of success based on the facts of the case (using data from past cases), and depending on the success level, either the penalty would apply or it would not.

Thus far, this analysis has made a theoretical case in support of utilizing AI and predictive analytics to determine the appropriateness of tax penalty application. But beyond the theoretical, in the next Part, this analysis makes the concrete case that this technology has a proven track record of accomplishment in the tax realm. It accomplishes this goal by presenting three case studies involving actual fact patterns, illustrating the potency of these advancements.

IV. THREE CASE STUDIES PROVING TECHNOLOGY'S TRANSFORMATIVE POWERS

Technological innovations are occurring at a stunning rate. By way of example, in 1950 the average television set cost $1,000; in 2024, that very same television set would cost $6.80.[186] And the same could be

184. *Id.*

185. *See supra* notes 55-71 and accompanying text.

186. Off. Data Found., *Televisions Inflation Calculator*, CPI INFLATION CALCULATOR, https://www.in2013dollars.com/Televisions/price-inflation [https://perma.cc/L8NY-82MN] (last visited May 26, 2024).

said of cellular phones: compared to their counterparts just a decade earlier, they cost and weigh far less than they once did.[187] Televisions and cellular phones are just the tip of the iceberg: due to the exponential increase in the number of transistors that a single microchip can contain, under Moore's Law, the speed and capability of computers can be expected to double every two years.[188] That being the case, the pace of technological change has the capacity to fundamentally change humanity.

When considering AI and its application to grappling with difficult tax concepts, the swift pace of technological change is important to keep in mind. Today, AI may produce outcomes that serve some utility, but by tomorrow or the next day, if the speed of technological innovation stays the course, there are great strides in computing capacity will be made. In other words, sometime soon AI may fundamentally alter the nature of tax practice.[189]

Consider the fact that there are now multiple companies that employ predictive analytics in the realm of tax practice. One leader in this space is Blue J Legal, which was established in 2014 by three University of Toronto faculty members.[190] Its stated mission is to use artificial intelligence to predict the outcomes of tax and employment law cases. The goal of these predictions is not necessarily to reform the civil tax penalty system, as we advocate in this Article, but rather to inform taxpayers of the likelihood that a tax position will be sustained on the merits. Since 2021, as a form of self-promotion, Blue J has regularly published the outcomes of its predictive analytics in *Tax Notes*—a journal that is revered by governmental tax policy experts, tax academics, and tax practitioners.[191]

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187. *History of Mobile Phones*, WIKIPEDIA, https://en.wikipedia.org/wiki/History_of_mobile_phones [https://perma.cc/ENA3-TETZ] (last visited Apr. 10, 2024).

188. Gordon E. Moore, *Cramming More Components onto Integrated Circuits*, 38 ELECTRONICS 114 (1965).

189. *See, e.g.*, David I. Walker, *Tax Complexity and Technology*, 97 IND. L.J. 1095, 1105 (2022) ("Looking further ahead, [Professors] Joshua Blank and Leigh Osofsky envision a day in which artificial intelligence (AI) has developed to such a degree that taxes may be calculated automatically even for individuals with complex tax situations . . . .").

190. *See* John Lorinc, *Helping Machine-Learning Startups Succeed*, UNIV. TORONTO MAG. (Dec. 19, 2016), https://magazine.utoronto.ca/research-ideas/business/blue-j-legal-brings-ai-to-tax-law-helped-by-machine-learning-stream-at-rotman-school-creative-destruction-lab/ [https://perma.cc/99RL-XHE7] ("Launched in 2014 by three U of T law professors and a veteran software engineer, Blue J Legal has created sophisticated AI software that provides lawyers and judges with guidance on resolving tax disputes. While a judge may use a dozen key precedents to make a ruling, Blue J's technology sifts through hundreds of past cases, looking beyond key words for facts similar to the case in dispute. With successive refinements, Blue J's accuracy—the number of times its conclusions align with a previous judge's rulings—has improved from 65 per cent to up to 98 per cent.").

191. *See, e.g.*, Tax Analysts v. U.S. Dep't of Just., 965 F.2d 1092, 1093 (D.C. Cir. 1992) ("Tax Analysts publishes a weekly magazine, *Tax Notes*, which reports on federal tax law to a readership of tax attorneys, accountants and economists.").

Below is a compendium of three case studies—(A) exploration of the deductibility of corporate management fees, (B) determination of a worker's employment status, and (C) the existence of a trade or business—that demonstrate the potency of predictive analytics. In each of these scenarios, Blue J's machine learning program—which relies on data from past tax cases and other public records—was able to predict the outcome of a tax case and, in doing so, assign the odds of the taxpayer's success a specific probability percentage. Taking this a step further, as we argue in this Article, these are the very scenarios where the application of tax penalties could have been avoided or, alternatively, where it would be apropos for the IRS to impose them, based on these probabilities. Consider each seriatim.

A. Exploration of the Deductibility of Corporate Management Fees

The first case study involves an Eighth Circuit case entitled *Aspro, Inc. v. Commissioner*.[192] Before delving into the specifics of *Aspro*, a quick overview of the governing law is warranted. When a corporate taxpayer pays "ordinary and necessary" trade or business expenses, it is entitled to a deduction.[193] By contrast, when a corporate taxpayer makes distributions to its shareholders, they fall outside the scope of being "ordinary and necessary" trade or business expenses; accordingly, they are deemed to be nondeductible dividends.[194] In determining whether a payment is deductible or not, there are several factors that a court will consider, including, but not limited to, if a corporate enterprise has made previous dividend payments,[195] if the amounts paid for services rendered to shareholders are roughly in proportion to stock ownership,[196] if the payment is made in one lump sum at the end of the year,[197] and if the corporate enterprise has relatively little income after securing the putative deductions.[198]

In *Aspro*, a subchapter C corporation, Aspro, Inc., was owned as follows: forty percent by Jackson Enterprises Corp.; forty percent by Manatt's Enterprises, Ltd.; and twenty percent, individually, by

192. 32 F.4th 673 (8th Cir. 2022).

193. I.R.C. § 162(a).

194. *See, e.g.*, United States v. Ellefsen, 655 F.3d 769, 779 (8th Cir. 2011) ("[C]orporations are not allowed a deduction for dividends paid to the shareholders . . . .").

195. *See, e.g.*, Paul E. Kummer Realty Co. v. Comm'r, 511 F.2d. 313, 315 (8th Cir. 1975) ("[T]he absence of dividends to stockholders out of available profits justifies an inference that some of the purported compensation really represented a distribution of profits as dividends.").

196. *See, e.g.*, Treas. Reg. § 1.162-7(b)(1) (stating that a disguised distribution is likely where "excessive payments correspond or bear a close relationship" to ownership interests).

197. *See, e.g.*, Nor-Cal Adjusters v. Comm'r, 503 F.2d 359, 362 (9th Cir. 1974) (labeling payments as constructive dividends when made in a lump sum manner).

198. *See, e.g.*, *id.* ("Taxpayers['] consistently negligible taxable income was an indication that the bonus system was based on funds available rather than on services rendered.").

Milton Dakovich.[199] The company was an asphalt paving company that paid so-called "management fees" to its three shareholders.[200] The question before the court was whether these "management fees" were deductible trade or business expenses or nondeductible dividends.[201]

In conducting its analysis, the Eighth Circuit concluded that the payments in question were nondeductible dividends based upon the factors enumerated below:

- "There were no written agreements between Aspro and its three shareholders regarding fees paid for management services . . . ."[202]
- "[T]here [was no] employment contract between Aspro and Dakovich."[203]
- "Aspro produced no written management-services agreement or other documentation of a service relationship between Aspro and either entity, no evidence of how Aspro determined the amount of the management fees, and no evidence that either entity billed Aspro or sent invoices for any services performed for Aspro."[204]
- "Aspro has made no dividend distributions since the 1970s but has paid management fees every year but one for twenty years."[205]
- "Aspro has also paid management fees in amounts roughly proportional to the ownership interests of the stockholders."[206]
- "Aspro paid the management fees as lump sums at the end of the tax year even though the purported services were performed throughout the year."[207]
- "[Aspro] had a relatively small amount of taxable income after deducting the management fees."[208]

On balance, because these payments more closely resembled dividend payments rather than management fees, the Eighth Circuit upheld the IRS's position and ruled against their deductibility.[209]

What if the taxpayer in *Aspro* employed data analytics prior to making such payments? Would it have been able to avoid litigation? It

199. Aspro, Inc. v. Comm'r, 32 F.4th 673, 675, 679 (8th Cir. 2022).
200. *Id.* at 675-76.
201. *Id.* at 676.
202. *Id.*
203. *Id.*
204. *Id.* at 678.
205. *Id.* at 679.
206. *Id.*
207. *Id.* at 681.
208. *Id.*
209. *Id.* at 679-81.

appears so. Utilizing more than 500 decided cases, dating back to 1933, addressing the issue of "ordinary and necessary" business expenses, based upon the factors enumerated above, an algorithm predicted with fifty-six percent confidence "that the services [and the associated management fees] would not be considered ordinary and necessary."[210] By deductive logic, this meant that the taxpayer only had a forty-four percent chance of prevailing. While this percentage threshold of possible success (as previously delineated, generally forty percent or greater)[211] negates the application of any substantial understatement penalty (and, in *Aspro*, none was deemed applicable), the taxpayer still presumably owed the underlying tax associated with the payment's nondeductible status and interest associated with the tardiness of payment.

Presumably, companies like Blue J Legal use predictive analytics to predict the outcome of tax cases such as this one so that taxpayers and their advisors can rely upon these predictions to decide whether to litigate or settle a particular case, or perhaps at an even earlier planning stage to decide whether to undertake a particular transaction at all. And an additional, yet untapped, benefit of predictive analytics is that this probability-of-success prediction (forty-four percent in this case) could be the factor that determines whether the IRS asserts a penalty in a particular dispute, or that provides a taxpayer with an expedient means of defending against a penalty.

B. Determination of a Worker's Employment Status

For decades, worker classification issues of differentiating between those who are independent contractors versus those who are employees have proven challenging. These challenges have resulted in numerous federal and state court adjudications between (1) workers and employers and (2) employers and the government.[212]

The reason for all of this litigation is clear: the financial stakes are large for all involved parties. For employers, if a worker is categorized as an independent contractor, the classification alleviates them from bearing the burden of the Social Security pension contribution and the Medicare tax (together, 7.65 percent of the gross income)[213] and state

210. Benjamin Alarie & Christopher Yan, *Disguised Distributions and Management Fees:* Aspro *Revisited*, 175 TAX NOTES FED. 1401, 1402 (2022).

211. *See supra* Section I.A.

212. *See, e.g.*, David Bauer, *The Misclassification of Independent Contractors: The Fifty-Four Billion Dollar Problem*, 12 RUTGERS J.L. & PUB. POL'Y 138 (2015) (exploring the plethora of IRS cases against taxpayers regarding worker classification issues); William B. Gould IV, Dynamex *Is Dynamite, but* Epic Systems *Is Its Foil*—Chamber of Commerce*: The Sleeper in the Trilogy*, 83 MO. L. REV. 989, 998 (2018) ("The economic reality that independent contractor jobs are, in part, responsible for stagnancy in wages present among the traditional workforce accounts for the host of litigation that has emerged in state courts across the nation . . . over whether workers are independent contractors or employees.").

213. I.R.C. § 3111(a)-(b).

and federal unemployment insurance tax.[214] By the same token, workers who accept the status of independent contractor have to pay a self-employment tax of 15.3 percent,[215] rather than the 7.65 percent employment tax burden that those who are deemed employees normally have to bear.[216] Others heavily invested parties in worker classification issues are federal and state governments. This is because those workers classified as employees are much more likely to be tax compliant in their tax reporting practices than those workers who are classified as independent contractors, a group notoriously known to be lax in their tax reporting practices.[217]

In the twenty-first century, the issue of worker classification has taken on renewed importance as the nature of employment has evolved and the so-called gig economy—defined as a segment of the service economy "based on flexible, temporary, or freelance jobs, often involving connecting with clients or customers through an online platform"[218]—has emerged. Workers in the gig economy share some characteristics associated with being employees (e.g., the employer sets the rate of what a worker may charge a customer) while also sharing characteristics associated with being independent contractors (e.g., they set their own hours).

To assist taxpayers in navigating the difficult legal terrain associated with worker classification issues, the IRS has published a twenty-factor test that illuminates worker classification status.[219] Notwithstanding this guidance and a plethora of other resources to make such determinations (e.g., prior court decisions), many tax practitioners claim that worker classifications remain problematic. Indeed, few, if any, taxpayers or their advisors have the economic resources and time to peruse and analyze the hundreds (perhaps thousands) of federal and state court decisions that color these difficult worker classification issues.

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214. *See, e.g., id.* § 3301 (levying the Federal Unemployment Tax Act tax on employers based upon wages they pay to employees).

215. *Id.* § 1401. However, when independent contractors compute their adjusted gross income, they can deduct the employer's equivalent of the self-employment tax. *Id.* § 1402(a)(12).

216. *Id.* § 3101 (payroll tax imposed on employees).

217. *See, e.g.*, MICHAEL R. PHILLIPS, DEP'T OF THE TREAS., WHILE ACTIONS HAVE BEEN TAKEN TO ADDRESS WORKER MISCLASSIFICATION, AN AGENCY-WIDE EMPLOYMENT TAX PROGRAM AND BETTER DATA ARE NEEDED 8 (2009), https://iiiffc.org/images/pdf/employee_classification/Treasury.Inspec.Gen.02.04.2009.pdf [https://perma.cc/LF7F-43NE] (estimating worker misclassification costs to be fifty-four billion dollars in underreported employment tax, including losses of fifteen billion dollars in unpaid FICA taxes and UI taxes); *Independent Contractors: Hearings on H.R. 3245 Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways & Means*, 96th Cong. 430 (1979) (specifying that only forty-eight percent of independent contractors were fully compliant with their income tax reporting obligations).

218. The Investopedia Team, *Gig Economy: Definition, Factors Behind It, Critique & Gig Work*, INVESTOPEDIA, https://www.investopedia.com/terms/g/gig-economy.asp [https://perma.cc/KSM3-CCZE] (last updated Mar. 27, 2024).

219. Rev. Rul. 87-41, 1987-1 C.B. 296.

Until now. As declared by those who employ AI, "Machine-learning techniques can help tax practitioners identify previously decided cases with similar facts and circumstances and, based on an analysis of all the case law, predict the outcome of a case if it were to go to court."[220] Utilizing data analytics and a database of worker classification decisions, Blue J Legal has been able to develop a model that has a ninety-seven percent agreement rate with the courts.[221] This model can be employed in ways that can readily predict, based upon information provided (e.g., part-time/full-time, profit opportunity, and benefits), the probability of whether a particular worker will be classified by the IRS as an employee or an independent contractor. And, as has been previously pointed out,[222] this probability percentage can be critical to ascertaining whether an accuracy-related penalty can be avoided or, instead, is appropriate.

C. The Existence of a Trade or Business

When taxpayers engage in a trade or business, the Code permits deductions for related expenses. The reason for such deductibility is that taxpayers do not incur such expenses for private consumption, but rather to yield more profits that, in turn, produce more tax revenue. The presence of a trade or business is vital to the deductibility of related expenses because taxpayers generally cannot deduct expenses for non-business activities, such as hobbies.[223] However, absent from the Code is a definition of a "trade or business."[224] Instead, there are a series of factors that courts have examined to ascertain whether a trade or business exists, including, but not limited to, "(1) the type of activity; (2) whether the taxpayer engaged in businesslike practices; (3) the taxpayer's expertise and expectations; (4) the activity's income and loss history; and (5) the continuity, regularity, time, and effort spent on the activity."[225]

A case that illustrates the many factors that a court will consider when determining whether a trade or business exists is *Olsen v.*

220. Benjamin Alarie & Kathrin Gardhouse, *Predicting Worker Classification in the Gig Economy*, 173 TAX NOTES FED. 1733, 1733-34 (2021).

221. *Id.*

222. *See supra* Section II.A.

223. *See* I.R.C. § 183 (limiting losses related to hobbies).

224. *See, e.g.*, Carol Duane Olson, *Toward a Neutral Definition of "Trade or Business" in the Internal Revenue Code*, 54 U. CIN. L. REV. 1199, 1199 (1986) (" 'Trade or business' is one of the most frequently used phrases in the Internal Revenue Code (the 'Code'), appearing in over two hundred sections and nearly three hundred and fifty subsections. Although the frequency of its use in the Code suggests that the phrase is a term of art, the words themselves have no particularized meaning. 'Trade or business' is not defined in the Code or in the regulations issued by the Treasury Department interpreting the Code.").

225. Benjamin Alarie & Christopher Yan, *Using Machine Learning to Evaluate the Existence of a Trade or Business:* Olsen, 174 TAX NOTES FED. 1231, 1236 (2022).

Commissioner.[226] In *Olsen*, the taxpayer, a law associate, in an endeavor to negate his tax burden, met with a solar energy tax shelter promoter.[227] The promoter had devised a plan in which participating taxpayers would buy lenses that were designed to generate solar energy and then lease them back to a company controlled by the promoter; when the plan was fully operational, the intended goal was to enable the taxpayer to capitalize upon robust accelerated depreciation deductions and investment tax credits.[228] Notwithstanding this tax-driven plan, the IRS challenged the taxpayer's accelerated depreciation deductions and qualification for investment tax credits on the basis that no trade or business existed.[229]

Litigation ensued, tasking the Tax Court with the mission of determining the legitimacy of the taxpayer's tax reporting position. The Tax Court made the following three important factual determinations: the taxpayer's activities never rose to the level of being a trade or business; the lenses were never placed in service; and the overall nature of the taxpayer's involvement was passive rather than active in nature.[230] On the basis of these findings, the Tax Court ruled against the taxpayer, disallowed the accelerated depreciation deductions and the qualification for the investment tax credits, and would have imposed accuracy-related penalties but "the IRS did not secure timely supervisory approval for them."[231]

On appeal, the Tenth Circuit sided with the Tax Court.[232] In ruling against the taxpayer, the Tenth Circuit employed a two-pronged approach. As part of the first prong, the court utilized a nine-factor test enumerated in the Treasury regulations to determine that the taxpayer lacked a profit motive.[233] The Tenth Circuit then identified three

226. No. 26469-14, 2021 WL 1259727, at *1 (T.C. Apr. 6, 2021).

227. *Id.* at *8.

228. *Id.* at *6-7, 11.

229. *Id.* at *18-19.

230. *Id.* at *28-29, 36, 42.

231. *Id.* at *3.

232. Olsen v. Comm'r, 52 F.4th 889, 904 (10th Cir. 2022).

233. To quote the Court:

> 1. The "[m]anner in which the taxpayer carries on the activity." Treas. Reg. 1.183-2(b)(1).
> 2. "The expertise of the taxpayer or his advisors." Treas. Reg. § 1.183-2(b)(2).
> 3. "The time and effort expended by the taxpayer in carrying on the activity." Treas. Reg. § 1.183-2(b)(3).
> 4. The "[e]xpectation that assets used in [the] activity may appreciate in value." Treas. Reg. § 1.183-2(b)(4).
> 5. "The taxpayer's profits and losses. Treas. Reg. § 1.183-2(b)(5) to (7). Factors 5, 6, and 7 concern whether the taxpayer had a reasonable hope of making a profit. Factor 5 addresses the taxpayer's "success . . . in carrying on other . . . activities," Factor 6 addresses the "taxpayer's history of income or losses with respect to

clear signs—i.e., "(1) The marketing materials focused on projected tax benefits"; "(2) Mr. Olsen paid a grossly inflated purchase price for the lenses without negotiating"; and "(3) Mr. Olsen lacked control over the business"[234]—which revealed that the taxpayer's actions were entirely tax-benefit driven rather than profit motivated. Thus, the court ruled against the taxpayer.

In retrospect, the taxpayer could have saved a lot of time, effort, and energy had he employed data analytics to determine his chances of courtroom success. Utilizing a data set of more than 700 decisions addressing the issue of whether a taxpayer has a trade or business and considering the following five factors—"(1) the type of activity; (2) whether the taxpayer engaged in businesslike practices; (3) the taxpayer's expertise and expectations; (4) the activity's income and loss history; and (5) the continuity, regularity, time, and effort spent on the activity"[235]—a machine-trained algorithm was able to predict "with over 95 percent confidence"[236] that the Tenth Circuit would uphold the Tax Court's position.[237]

In instances like this, even prior to making an investment, taxpayers should put data analytics to work. More specifically, with a few keystrokes, sophisticated data analytics can predict a taxpayer's chances of prevailing in court. This information may give comfort to the taxpayer regarding the legitimacy of a particular position or, alternatively, provide a healthy dose of reality that a particular investment is not entirely what it is cracked up to be. The IRS could also use this technology in objective ways to determine the merits of penalty imposition, rather than relying on the vagaries of subjective decisions that are currently being employed.[238]

These three cases are emblematic of the virtues that AI combined with predictive analytics offers. Indeed, they represent the future of tax practice. Admittedly, today's data analytics might lack the precision that taxpayers or a court would wish to rely upon to determine tax penalty applicability in all types of cases. But there is every reason to believe that data analytics could play an evolving and decisive role

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the activity," and Factor 7 addresses "[t]he amount of occasional profits, if any, which are earned." *Id.*

6. "The taxpayer's financial status, including other sources of income." Treas. Reg. § 1.183-2(b)(8).

7. "The presence of personal motives." Treas. Reg. § 1.183-2(b)(9).

Id. at 897-901 (emphases omitted).

234. *Id.* at 901.

235. Alarie & Yan, *supra* note 225, at 1236.

236. *Id.*

237. *Id.*

238. *See generally* Doran, *supra* note 8 (critiquing the current tax penalty regime for its sometimes arbitrary imposition of tax penalties on the part of the government).

in many tax penalty determinations.[239] The common denominator in these aforementioned three case studies were multi-factor tests that each one employed. Such multi-factor tests with hundreds of data points (i.e., prior court decisions) are the perfect platform to test the merits of predictive analytics.

In an earlier work,[240] we argued that machine learning programs should be capitalized upon, by both taxpayers and the government, to improve the tax valuation process. In that work, we laid out concrete steps that Congress and/or the Treasury could take to implement the use of computer algorithms to value non-liquid assets (such as real estate) for tax reporting purposes, including using machine learning valuations as a presumptive starting point for taxpayers, the IRS, and courts while giving taxpayers the ability to dispute the machine learning value if they so choose.[241] The same practical applications apply here in the case of using predictive analytics for tax penalty determinations. The government could identify one or more private companies that have created data-based prediction models for tax cases and designate those algorithms as presumptively accurate in determining whether taxpayers meet the sufficient legal standards (reasonable basis or substantial authority) to avoid civil tax penalties. Taxpayers could rely on these predictions in taking their return positions; the IRS could rely on them in the audit process in deciding whether to assert penalties; and courts would have a reliable, unbiased metric to adjudicate disputes involving tax penalties.

The end result would be enormous efficiency savings, as the government and taxpayers would avoid litigating the issue of sufficient legal authority in penalty determinations. An added benefit would be enhanced tax compliance, leading to more tax revenue collected, because taxpayers would be more likely to avoid taking aggressive tax positions for which they cannot demonstrate sufficient legal authority.

In sum, AI and predictive analytics constitute a dynamic duo that can fulfill the time-honored goals of enhancing tax compliance, making the tax system more efficient, and result in the construction of the Code in a manner that facilitates its administration.

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239. When it comes to novel tax issues stemming, for example, from newly enacted legislation, necessary data for predictive analytics may be lacking. As a result, the marvels of this technology may fall short of hitting their intended target and traditional twentieth-century analysis will likely have to be pursued. But in almost all other instances, AI and predictive analytics constitute a dynamic duo that can, as promised, fulfill the time-honored goals of enhancing tax compliance, making the tax system more transparent, and resulting in the construction of the Code in a manner that facilitates its administration.

240. Jay A. Soled & Kathleen DeLaney Thomas, *AI, Taxation, and Valuation*, 108 IOWA L. REV. 651 (2023).

241. *Id.*

CONCLUSION

A central feature of every tax system is a viable penalty regime. Absent one, many taxpayers might not fulfill their civic duties and, as a result, revenue collections would likely diminish. On the other hand, the better and more efficient a tax system's penalty regime, the greater the odds that the particular tax in question will flourish and result in the generation of sufficient funds to meet public expenditures.

For over a century, the nation's income tax has relied upon the existing penalty system to keep taxpayers' tax reporting positions in check, punctuated by periodic reform measures—the most recent being over three decades ago.[242] And, at least by numerical standards, the existing penalty regime has done an admirable job. With little fanfare, the IRS routinely collects trillions of dollars annually.[243] Furthermore, the nation's voluntary compliance rate is one of the highest in the industrialized western world.[244]

But the advent of AI coupled with predictive algorithms opens the door to vast reform opportunities. When auditing taxpayers' tax returns, the IRS can employ AI and predictive algorithms to determine, in light of the proffered probability thresholds and when it comes to subjective determinations, whether penalty imposition is apropos. However, Congress should consider instituting a safe harbor protection for circumspect taxpayers who utilize twenty-first-century technology to ascertain whether their reporting positions meet or exceed governing probability thresholds. Instituting these measures that incorporate AI and predictive algorithms into the fold of the tax system will yield far greater tax compliance and, in addition, transparency.

Technological advancements will admittedly not solve all of the tax collection issues besetting the nation's tax system. Insofar as tax penalties are concerned, however, AI and predictive analytics open a new chapter in tax administration, offering a powerful compliance platform

242. *See supra* note 18.

243. Statista Rsch. Dep't, *Revenues of the United States Government in the Fiscal Year of 2023, by Category*, STATISTA (2024), https://www.statista.com/statistics/216928/us-government-revenues-by-category/#:~:text=In%202021%2C%20the%20total%20revenues,totaled%20372%20billion%20U.S.%20dollars [https://perma.cc/ML7S-P49U] (showing that the United States collected over $4 trillion of revenue in 2023).

244. Relatively speaking, the United States' voluntary tax compliance rate is high compared to its European counterparts. *See, e.g.*, Edward Christie & Mario Holzner, *What Explains Tax Evasion? An Empirical Assessment Based on European Data* (Vienna Inst. for Int'l Econ. Stud., Working Paper No. 40, 2006), https://wiiw.ac.at/what-explains-tax-evasion-an-empirical-assessment-based-on-europeandata-dlp-540.pdf [https://perma.cc/KE74-89PL] (indicating that countries such as Austria (74.8%), France (75.38%), Germany (67.72%), and Italy (62.49%) have much lower compliance rates).

that, aside from being extraordinarily quick and cost-efficient, is transformative in nature. Their adoption would constitute a major step forward in tax administration, one that all parties—namely, Congress, the IRS, taxpayers, and tax practitioners—would be wise to quickly embrace.