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AI Governance and Taxpayers' Rights in a Digital Age^{*}

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This article addresses the challenges faced by tax administrations, organizations, and policymakers arising from the use of Artificial Intelligence (AI). Several organizations such as the OECD, International Monetary Fund (IMF), Asian Development Bank (ADB), and the European Union (EU) have defined AI, however, finding a single definition is difficult. Therefore, it or its usage will be defined in accordance with the work of the organizations and taking into account the different sectors and stakeholders to which it will apply.

Despite the lack of a single definition, using AI affords opportunities for tax administrations to improve compliance and communication with taxpayers. For instance, its multifaceted use in tax administration includes better taxpayer services, profiling, assessing risk of fraud, and other functions. However, there are challenges related to the ethical and legal dimensions associated with the utilization of AI.

Considering the above, the main issue explored in this article is how taxpayers' rights are influenced by the integration of AI in tax administrations. To address this question, this article is structured as follows. The first section provides an overview of the topic of AI and taxation outlining AI definitions, its unique characteristics, and its governance in taxation. Through exploring the existing literature on this topic, the authors aim to identify framework conditions that will enable the broad principles that govern AI while securing that tax authorities operate within defined boundaries, avoid overreach, and simultaneously safeguard the individual rights of taxpayers. Balance between leveraging AI for efficiency gains and preserving the principles of legality and individual rights remains central to this inquiry. The next part of the article demonstrates the relationship between AI in tax administrations and taxpayers' rights, contextualizing the latter, highlighting their relevance and the effectiveness of the existing instruments in the protection of taxpayers' rights in the era of AI. The article concludes with a proposal for a new framework for protecting taxpayers' rights in the digital age

Keywords: Artificial intelligence, digital tax governance, taxpayer's rights, ethical, tax administration.

I INTRODUCTION

Artificial Intelligence (AI) has emerged as an umbrella term encompassing various forms of automation and data science techniques, however, there has been a growing

discourse in recent years surrounding the ethical and legal dimensions associated with utilizing it. This includes the need to balance its regulation while encouraging technological innovation at the same time.¹ The emergence of non-binding guiding principles

Notes

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¹ For a discussion on the general use of AI in different sectors, please see e.g., Rowena Rodrigues, *Legal and human rights issues of AI: Gaps, challenges and vulnerabilities*, 4 J. Res. Tech. 100005 (2020), doi: 10.1016/j.jrt.2020.100005; Monika Zalnieriute, Lyria Bennett Moses & George Williams, *Automating Government Decision making: Implications for the Rule of Law*, in *Technology, Innovation and Access to Justice: Dialogues on the Future of Law* Ch. 6, 40 (S. de Souza & M. Spohr eds, Edinburgh University Press, UNSWLRS 2021); Kirsten Martin & Ari Waldman, *Are Algorithmic Decisions Legitimate? The Effect of Process and Outcomes on Perceptions of Legitimacy of AI Decisions*, 183 J. Bus. Ethics 2023), doi: 10.1007/s10551-021-05032-7 and Karen Levy, Kyla E. Chasalow & Sarah Riley, *Algorithms and Decision-Making in the Public Sector*, 17 Annual Rev. L. & Soc. Sci. (2021), doi: 10.1146/annurev-lawsocsci-041221-023808 (accessed 1 Apr. 2025)

(and hard law as in the case of the European Union (EU)) for employing AI in international, regional, and domestic fora demonstrates this. This discussion becomes particularly pertinent in the context of taxation where introducing it presents opportunities for increased efficiency and tax compliance in the enforcement and administration of tax laws but also poses challenges to taxpayer rights.² Applying AI in taxation can be broadly categorized into two primary areas: by taxpayers and their advisers to adhere to existing tax laws and by tax administrations to ensure compliance, facilitate communication with taxpayers, and secure the collection of taxes. This article focuses on the latter and specifically explores how taxpayers' rights are influenced by the integration of AI in tax administration. Its multifaceted applications in tax administration include improved taxpayer service, profiling, assessing the risk of fraud, and other functions.

Concerns regarding using AI extend beyond tax administration and have gained global attention in forums such as the G20, the World Economic Forum, the European Parliament, the OECD, the United Nations, and the African Commission on Human and Peoples' Rights.³ These matters prompted collective action as evidenced by the signing of the Bletchley Declaration in November 2023.⁴ In it, twenty-eight countries and the EU committed themselves to collaborative efforts for inclusive, human-centric, trustworthy, and responsible AI, thus promoting safety and collective well-being through international and other relevant initiatives.⁵ This is also evident in the launching of Project D by the OECD Forum on Tax Administration (FTA) in December

2023 on enhancing the trustworthy use of AI in tax administration.

The Council of Europe Committee for AI has recently finalized the drafting of a Framework Convention (a legally binding instrument) on the development, design, and application of AI. The aim is to ensure that human rights, democracy, and the Rule of Law are protected and promoted in the digital environment.⁶ This work also follows the current 1981 Council of Europe Convention for the Protection of Individuals with regard to the Automatic Processing of Personal Data (now Convention 108+ amended through a protocol in 2018 to include Big Data).⁷ As it has been argued elsewhere by one of the authors:

In respect of big data, art. 11 (renumbered art. 9 of the Convention) of the 2018 Protocol introduces new rights for the persons in an algorithmic decision-making context, which are particularly relevant in connection with the development of artificial intelligence. For instance: (i) in order to obtain confirmation of the processing of personal data on request, at reasonable intervals, and without excessive delay or expense, the communication of the processed data must take place in an intelligible form in order to ensure the transparency of processing and (ii) the data subjects have the right not to be subject to a decision significantly affecting him or her based solely on an automated processing of data without having his or her views taken into consideration.⁸

This Convention and its new Convention 108+ are open for signature and ratification for the forty-six Member States of the Council of Europe and also for non-Member

Notes

² Some of these challenges and opportunities are briefly discussed in this article. For further discussion on the use of AI by tax administrations, please see Bruno Peeters, *European Law Restrictions on Tax Authorities' Use of Artificial Intelligence Systems: Reflections on Some Recent Developments*, 33(2) EC Tax Rev. 54–57 (2024), doi: 10.54648/ECTA2024006, <https://kluwerlawonline.com/api/Product/CitationPDFURL?file=Journals\ECTA\ECTA2024006.pdf> (accessed 1 Apr. 2025); Rita de la FERIA & Amparo Grau Ruiz, *The Robotisation of Tax Administration*, in *Interactive Robotics: Legal, Ethical, Social and Economic Aspects* Ch. 20 (A. Grau ed., Springer Nature 2022); Jose Manuel Calderón & João Sérgio Ribeiro, *Fighting Tax Fraud Through Artificial Intelligence Tools: Will the Fundamental Rights of Taxpayers Survive the Digital Transformation of Tax Administrations?*, 60(6) Eur. Tax'n 235–238 (2020), doi: 10.59403/12reg13 (accessed 1 Apr. 2025); Susan C. Morse, *Do Tax Compliance Robots Follow the Law?*, 16(1) Ohio State Tech. L.J. 291–298 (2020); Jeffrey Owens, Anastasiya Piakarskaya, Nathalia Oliveira Costa & Rhodah Noreen Kwamboka Nyamongo, *Generative AI: The Power Behind Large Language Models and Their Use in Tax Administration*, 112 Tax Notes Int'l 1256–1274 (2023); Fernando Serrano Antón, *Artificial Intelligence and Tax Administration: Strategy, Applications and Implications, With Special Reference to the Tax Inspection Procedure*, World Tax J. IBFD (2021), doi: 10.59403/bcs8j9 (accessed 1 Apr. 2025) and Mindy Herzfeld, *Godlike AI: Disrupter of Tax Worlds*, 110 Tax Notes Int'l (2023).

³ G20, *New Delhi Leaders' Declaration, Harnessing Artificial Intelligence (AI) Responsibly for Good and for All* New Delhi, India 24 (9–10 Sep. 2023); The World Economic Forum – The Presidio Recommendations on Responsible Generative AI; Commission – Proposal for a Regulation of the European Parliament and of the Council laying down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union Legislative Acts, COM(2021)206 (21 Apr. 2021) and OECD – OECD, *Artificial Intelligence in Society* (2019); UN AI Advisory Body, Interim Report: Governing AI for Humanity' Dec. 2023 and Resolution on the need to undertake a Study on human and peoples' rights and artificial intelligence (AI), robotics and other new and emerging technologies in Africa – ACHPR/Res. 473 (EXT.OS/ XXXI) 2021.

⁴ The Bletchley Declaration by Countries Attending the AI Safety Summit, 1–2 Nov. 2023: Policy paper (published on 1 Nov. 2023). Available at <https://www.gov.uk/government/publications/ai-safety-summit-2023-the-bletchley-declaration/the-bletchley-declaration-by-countries-attending-the-ai-safety-summit-1-2-november-2023> (accessed 1 Apr. 2025).

⁵ The Bletchley Declaration by Countries Attending the AI Safety Summit, 1–2 Nov. 2023: Policy paper (published on 1 Nov. 2023). See also the recent AI Action French Summit, 6–11 Feb. 2025 in which countries emphasized the need to not only regulate AI but also to use it to reduce the digital divide. The summit highlighted the need and urgency to narrow the inequalities and assist developing countries in artificial intelligence capacity-building so they can build AI capacities. Statement on Inclusive and Sustainable Artificial Intelligence for People and the Planet. Available at <https://www.elysee.fr/emmanuel-macron/2025/02/11/co-chairs-statement-on-international-artificial-intelligence-governance> (accessed 1 Apr. 2025).

⁶ The draft text will be referred to the Committee of Ministers for adoption and opened for signature at a later stage, <https://www.coe.int/en/web/artificial-intelligence/-/artificial-intelligence-human-rights-democracy-and-the-rule-of-law-framework-convention> (accessed 1 Apr. 2025).

⁷ <https://rm.coe.int/convention-108-convention-for-the-protection-of-individuals-with-regard-to-the-automatic-processing-of-personal-data-16808b36f1> (accessed 1 Apr. 2025).

⁸ Irma Mosquera Valderrama, *Processing of personal and business data and the rule of law in the era of digital trade*, Central European Political Science Review CEPSR Journal – 76. See also F. Debelva & Irma Mosquera Valderrama, *Privacy and Confidentiality in Exchange of Information Procedures: Some Uncertainties, Many Issues, but Few Solutions*, 45(5) Intertax 362–381 (2017), doi: 10.54648/TAXI2017029 (accessed 1 Apr. 2025).

States.⁹ In addition, the EU AI Act¹⁰ adopted in March 2024 has addressed employing AI systems for administrative proceedings by tax and customs authorities. However, unlike other AI systems, the act states that those used by these authorities should not be classified as high-risk.¹¹ Despite this classification, the importance of fundamental rights when tax authorities exercise enforcement activities should not be disregarded since the right to an effective remedy and fair trial should also be safeguarded by them when using AI tools. The latter increase transparency and accountability as well as ensure taxpayers' mutual trust when tax administrations perform these types of tasks.

The trend towards digitalization in tax authorities' activities is accelerating with approximately 95% of tax administrations using data science and analytical tools to utilize electronic data from third parties¹² and over 80% using big data in their work to majorly improve compliance.¹³ AI's ability to automate complex processes positions it as an increasingly integral element in these strategies.¹⁴ As tax administrations navigate the transition to a greater number of automated decision-making processes, questions emerge about the impact on the Rule of Law and taxpayer rights given the traditional derivation of tax levying authority from the legislature. The nature of AI technology further complicates understanding and articulating decisions affecting taxpayers, thereby potentially influencing their rights to scrutinize the tax administration, seek explanations, and appeal.

This accentuates the need to explore how tax enforcement and tax collection through AI can be executed securely and responsibly while upholding taxpayers' rights and the Rule of Law. The purpose of this article is to provide a background for discussion of the broader issue of governing AI use in the context of tax administration.¹⁵ It further develops the expanding literature regarding risks, challenges, and opportunities presented by AI in tax administration and highlights the following:

- (1) The principles for determining trustworthy AI use are factually not novel and should ideally underpin tax administrations' functioning especially when considering their responsibilities towards taxpayers (and the longstanding concept of the fiscal social contract). However, the increasing employment of AI tools that are more powerful, along with other technologies, amplifies pre-existing risks and introduces new and unprecedented risks.
- (2) Taxpayers' rights are increasingly becoming a policy issue as tax administrations continue to be automated. Many jurisdictions have had unilateral measures in place for many years for protecting taxpayers' rights in the form of bills or charters and codes of conduct for tax administrations, however, these may need to be revisited due to digitalization.
- (3) The article offers practical insight as a way forward for AI governance in the short and medium term which is a soft law approach reliant on the existing measures and principles. This article also recommends that tax administrations adopt checklists for ensuring the implementation of trustworthy AI somewhat similar to what is being discussed in the OECD FTA.
- (4) As a long-term solution, the authors are cognizant of the need for a new governance framework that can be applied in the tax area, and that it needs to be developed taking into account the diverse stakeholders (including the government, private sector, and civil society).

This article is divided as follows. The first section provides an overview of the topic of AI and taxation outlining the definitions of AI, its unique characteristics, and its governance in taxation. Through exploring the existing literature on this topic, the authors intend to identify framework conditions that will enable the broad principles that govern AI while securing that tax authorities operate within defined

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⁹ At the time of this writing, of the forty-six Member States, forty have signed (and twenty-eight have ratified). From the nine non-Member States that have expressed their interest in signing this Convention 108+, Argentina, Mauritius, and Uruguay have signed and ratified it while Cabo Verde, Russian Federation, and Tunisia have signed. Signature and ratification are still pending from Mexico, Morocco, and Portugal. Full list – Treaty Office (coe.int) (accessed 1 Apr. 2025).

¹⁰ Paragraph 59 European Parliament legislative resolution of 13 Mar. 2024 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonized rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union Legislative Acts (COM(2021)0206 – C9-0146/2021 – 2021/0106 (COD)). Available at https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138_EN.html (accessed 1 Apr. 2025).

¹¹ The AI Act states that, in view of the nature of the activities and the risks relation thereto, some AI systems to be used in the law enforcement context may affect the exercise procedural fundamental rights such as the right to an effective remedy and to a fair trial, among others. Therefore, these AI systems may be classified as AI-high risk for which their use may be permitted under relevant EU and national law but will require accuracy, reliability, and transparency. These requirements are particularly important 'to avoid adverse impacts, retain public trust and ensure accountability and effective redress'. para. 59.

¹² OECD, *Tax Administration 2023: Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris 21 (2023), <https://doi.org/10.1787/900b6382-en> (accessed 1 Apr. 2025).

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ The topic of taxpayers' rights and the rule of law has been widely discussed in the literature and at international conferences. Notable contributors include (in alphabetical order) Robert Attard, Philip Baker, Juliane Kokott, and Pasquale Pistone as well as institutions such as the IBFD Observatory on the Protection of Taxpayers' Rights and the Center for Taxpayer Rights. The latter has organized annual conferences focused on these themes, e.g., the 2024 event, Towards a Digital Taxpayer Bill of Rights, and the 2019 conference, Taxpayer Rights in the Digital Age: Implications for Transparency, Certainty and Privacy. The forthcoming 2025 annual report by the IBFD-based Observatory includes a dedicated section on AI and offers best practices and minimum standards. See Observatory on the Protection of Taxpayers' Rights (OPTR) | IBFD.

boundaries, avoid overreach, and simultaneously safeguard taxpayers' individual rights. Ensuring a balance between leveraging AI for efficiency gains and preserving the principles of legality and individual rights remains central to this inquiry. The next part of the article demonstrates the relationship between AI in tax administration and taxpayers' rights, contextualizing the latter, highlighting their relevance and the effectiveness of the existing instruments in them in the AI era. The article concludes with a proposal for a new framework for protecting taxpayers' rights in a digital age.

2 AI AND TAXATION

2.1 The Intersection of AI and Taxation

Before determining whether existing regulations provide sufficient governance over using AI in taxation, the authors must first define the scope activities and operations that AI performs. It could represent an entirely new tool for collecting taxes or further developing existing tools; it could become a component of the process for levying taxes or become an entirely different one on its own. Determining AI's exact nature as an instrument will guide determining what regulations should be applied to it, whether they are incomplete, and how they can be extended or altered effectively. A third possibility is that it is ascertained that current regulations actually do not cover what is defined as AI, thereby rendering its regulation in a particular tax process non-existent. Upon determining possible AI definitions, the authors will examine its unique characteristics by exploring current and future potential uses of AI by tax administrations. This will help identify areas of risk to taxpayer rights which will be explored in section 3 that will also examine how current laws and regulations mitigate these risks and explore ongoing regulatory initiatives aimed at further doing so.

2.1.1. Defining AI: Perspectives from International Organizations

In 1955, the term AI was coined by John McCarthy and defined as 'the science and engineering of making intelligent

machines'¹⁶ and has since then been redefined repeatedly though there is still no universally agreed-upon definition among global institutions.¹⁷ However, several organizations including the OECD, EU, International Monetary Fund (IMF), and Asian Development Bank (ADB) have their own definitions for it¹⁸ for which, notably, organizations including the EU, Council of Europe, and the United Nations use the OECD's definition of an AI system.¹⁹ The OECD identifies seven use cases or patterns within AI systems thus suggesting a structured approach to implementing and highlighting versatility.²⁰ The OECD definition states:

An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.²¹

The EU AI Act states that the definition of AI systems should be closely aligned with the work of international organizations²² (presumably including the OECD) and, similar to the OECD's definition, that it should draw from the key characteristics of AI systems including their capability to infer.²³ The IMF's definition broadly characterizes AI as a field of computer science imitating human behaviour that reflects a comprehensive view of it as a technological domain rather than a specific set of functionalities.²⁴ Similarly, the definition coined by the ADB focuses on AI's ability to acquire and apply knowledge, thereby encompassing a broad range of cognitive tasks. Additionally, it distinguishes machine learning as a subset of AI, illustrating the diverse facets within its broader domain.²⁵ These differences highlight the varied perspectives on AI among organizations. While its core concepts remain consistent across definitions, each organization brings its own perspective and emphasis based on its objectives and priorities. Different sectors will define it or its usage in ways more suitable to their specific needs thereby establishing a clearer understanding of the technology within that sector.²⁶ Therefore, developing a tailored definition for AI in the tax sector may be required to

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¹⁶ Christopher Manning, *Artificial Intelligence Definitions*. Stanford University Human Centered Artificial Intelligence (Sep. 2020).

¹⁷ Pei Wang, *On Defining Artificial Intelligence*, 10(2) J. Art. Gen. Intell. 10–12 (Walter de Gruyter GmbH 2019).

¹⁸ See the table in Annex 1.

¹⁹ <https://oecd.ai/en/ai-principles> (accessed 1 Apr. 2025).

²⁰ OECD, *Recommendation of the Council on Artificial Intelligence* OECD/LEGAL/0449 7–10 (2019), <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449> (accessed 1 Apr. 2025).

²¹ <https://oecd.ai/en/wonk/ai-system-definition-update> (accessed 1 Apr. 2025).

²² See Recital 12, EU AI Act.

²³ See Recital 12, EU AI Act.

²⁴ International Monetary Fund, *AI Lexicon*. Retrieved from <https://www.imf.org/en/Publications/fandd/issues/2023/12/AI-Lexicon> (accessed 1 Apr. 2025).

²⁵ *Launching A Digital Tax Administration Transformation*. Asian Development Bank 42 (2022), <https://doi.org/10.22617/tcs210343> (accessed 1 Apr. 2025).

²⁶ OECD, *OECD Framework for the Classification of AI Systems*, OECD Digital Economy Papers, No. 323, OECD Publishing, Paris 16–24 (2022).

align with the specific objectives and priorities related to taxation.

To establish an understanding of AI's significance in tax administration, various international organizations have emphasized its potential for improving efficiency and accuracy. The ADB outlines some of its uses by tax administrations. These include chatbots equipped with Natural Language Processing (NLP) that are useful in improving taxpayers' service, and predictive technology addresses tax gaps and fraud by comprehensively analysing data. AI simplifies identifying noncompliance by streamlining the analysis of taxpayer data. In 2024, the South African Revenue Service (SARS) reported collecting an additional USD 15.6 billion due to using an AI compliance program.²⁷ It used AI and machine-learning algorithms aimed at ensuring the issuance of legitimate tax refunds and the denial of fraudulent ones.²⁸ Additionally, AI facilitates tax debt management including predictions of non-compliance.²⁹ In 2023, Austria's Ministry of Finance (BMF) generated approximately EUR 185 million in tax income from using predictive analytics and AI.³⁰ The Predictive Analytics Competence Centre (PACC) is a special unit in the BMF that uses risk models which, in this case, analysed 6.5 million cases and uncovered false information in employee tax assessments and fraud attempts.³¹ AI in tax administration emerges as a versatile tool that impacts processes, improves accuracy, and fosters informed decision making.³²

2.1.2. The Unique Characteristics of AI

AI redefines technology with its unique capabilities, especially in taxation. Unlike traditional tools, it can learn to make decisions without explicit programming and adapts and updates new information to refine its performance over time.³³ This dynamic nature enables it to handle unstructured data with unprecedented accuracy and to combine data from a wide range of different sources; this

revolutionizes tax-related tasks. However, AI's autonomy introduces challenges as biases that were once human-induced become embedded in algorithms that potentially lead to discriminatory outcomes.³⁴ This accentuates the need for transparency, accountability, and ethical considerations in AI-driven tax processes.³⁵ Thus, AI's transformative potential in taxation lies in its dynamic learning, handling unstructured data, and its autonomy which simultaneously incites concerns about biases and ethical use. These characteristics mark a departure from previous technologies and therefore necessitate regulation and oversight in taxation.

AI's unique attributes that make it appealing for tax administrations to optimize their processes are also the very source of its regulatory challenges. Its nature causes regulations to quickly become outdated as they are unable to proceed at the same pace as AI's evolving capabilities. They will continue struggling to keep up if they do not encompass it for future uses considering rapid development and constant reinvention. Therefore, it is important to clearly define and identify AI's role within the tax realm to develop an appropriate mix of abstract and concrete laws while keeping a flexible approach to address future uses. However, it should be remembered that incorporating ideas such as technological neutrality into creating laws allows for anticipation of AI applications, yet, incorporating too many potential uses could have adverse effects. To summarize, AI's definition in taxation should be dynamic keeping in mind its potential uses and rapid development.

2.1.3. Training Data used in the Learning Process of AI Tools

Tax administrations are data rich as they have access to vast amounts of data drawing from a variety of sources that they can rely upon for training AI systems in their implementation.³⁶ AI algorithms that are commonly

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²⁷ Kiarra M. Strocko, *AI Program Recaptures \$15 Billion of South African Tax Revenue*, Tax Notes Int'l (8 Apr. 2024), at <https://www.taxnotes.com/tax-notes-international/budgets/ai-program-recaptures-15-billion-south-african-tax-revenue/2024/04/08/7jddm?highlight=SARS%20Ai> (accessed 1 Apr. 2025).

²⁸ <https://www.sars.gov.za/media-release/compliance-efforts-of-sars-bear-fruit-and-underpin-the-positive-revenue-results-despite-the-tough-prevailing-economic-conditions/> (accessed 1 Apr. 2025).

²⁹ <https://www.sars.gov.za/media-release/compliance-efforts-of-sars-bear-fruit-and-underpin-the-positive-revenue-results-despite-the-tough-prevailing-economic-conditions/> (accessed 1 Apr. 2025).

³⁰ <https://www.bmf.gv.at/en/press/press-releases/2024-New/August-2024/BMF-generated-around-EUR-185-million-in-tax-income-from-AI-in-2023-.html> (accessed 1 Apr. 2025).

³¹ *Ibid.*

³² Asian Development Bank (ADB), *A Comparative Analysis of Tax Administration in Asia and the Pacific: 2020 Edition* (2020), <http://dx.doi.org/10.22617/TCS190240> (accessed 1 Apr. 2025).

³³ Asian Development Bank, *supra* n. 25, at 42–43.

³⁴ Philippe Lorenz, Karine Perset & Jamie Berryhill, *Initial Policy Considerations for Generative Artificial Intelligence*, OECD Artificial Intelligence Papers, No. 1, OECD Publishing, Paris 17–18 (18 Sep. 2023), <https://doi.org/10.1787/fae2d1e6-en> (accessed 1 Apr. 2025).

³⁵ OECD, *supra* n. 20, at 8–9.

³⁶ Błażej Kuźniacki, Marco Almada, Kamil Tyliński & Łukasz Górski et al., *Towards eXplainable Artificial Intelligence (XAI) in Tax Law: The Need for a Minimum Legal Standard*, (4) World Tax J. 578 (2022), doi: 10.59403/2yhh9pa (accessed 1 Apr. 2025).

implemented rely on data for training and learning, which is a compute-intensive process that entails inputting substantial amounts of data and learning methods such as reinforcement learning.³⁷ This is seen with large language models such as ChatGPT. In some cases, AI tools draw conclusions from new data obtained based on the trained model.³⁸ The data that AI systems receive can determine the effectiveness of its output which is heavily dependent on the quality of input data and is thus affected by the adage of ‘garbage in, garbage out’.³⁹ This necessitates caution by tax administrations in determining the data to be used to train AI systems, and the examples presented later in this article demonstrate the threats that inaccurate, incorrect, and biased data can pose to the credibility of a tax administration thus undermining taxpayers’ trust in the entire tax system.

2.1.4. Uses of AI Tools by Tax Administration

As automated decision making becomes a reality, it is crucial to identify what exactly AI does within the tax levying process: is it merely a component of the process or the process itself? Tax administrations all over the world are using AI tools or are considering their use. This subsection provides a brief overview of some countries’ examples regarding the role of AI in tax collection and

enforcement process carried out by tax administrations. This subsection will demonstrate that AI use has been and can be beneficial for enhancing service provisions to taxpayers (for example, through chatbots), can be applied for managing risks (for example, predictive analytics), and can be applied in tax audits and dispute resolution.

Within the EU, countries including Belgium⁴⁰ and Germany⁴¹ have incorporated AI use in their tax administrations to perform functions such as web scraping that predicts risks of non-compliance and nudging.⁴² The ADB indicates that at least nineteen Asian countries have implemented AI in their tax levying processes or are in the implementation phase.⁴³ Nepal has a pilot project that introduces AI in combination with satellite imagery to tax officials to create a more accurate revenue estimate related to property.⁴⁴ This serves as a clear assistive tool that streamlines the search for tax officials and provides data that is more accurate on which to base decisions. Singapore introduced an actual filing robot that the taxpayer interacts with and has a conversation with the AI robot while filing taxes.⁴⁵ Here, it assists and clarifies aspects of the filing process for the taxpayer in real-time thus resembles a tax officer providing decisions on pre-approval before filing. This raises questions about the extent to which a taxpayer can rely on the advice of an AI robot given out by the tax administration: is it

Figure 1 Common uses of AI in Tax Administration

Repetitive activities	Research activities or knowledge acquisition activities
- Assistance systems, e.g. for the treatment of series transactions, withholding tax deduction or incentives § Support in tax determination in the area of VAT - Assistance in the determination of tariff proposals in the customs area - Automatic accounting machines or accounting detectors for the validation of accounting records. - Recognition and analysis of tax assessments, such as in the area of business tax or real estate tax	- Finding the appropriate case law, administrative instruction or literature opinion based on the context by means of an artificially created understanding of the search query. - Intelligent briefs with alert function, which indicate the need for tax action (=> NLP – Natural Language Processing) - Contract analyses - Generative AI (e.g., Chat GBT)
Audit and risk analysis	
- Use of machine learning to enrich or combine with BI solutions (=> BI – Business Intelligence) and Tax CMS instances - Continuous auditing via predefined pattern recognition in the area of sales tax or payroll tax - Detection of high risk sectors and taxpayers - Predictive Analytics	

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³⁷ Huawei Technologies Co., Ltd, *Artificial Intelligence Technology* 16 (Springer 2023).

³⁸ *Ibid.*

³⁹ Jeffrey Owens, Anastasiya Piakarskaya, Nathalia Oliveira Costa & Rhodah Noreen Kwamboka Nyamongo, *Generative AI: The Power Behind Large Language Models and Their Use in Tax Administration*, 112 *Tax Notes Int'l* 1260 (2023).

⁴⁰ <https://taxadmin.ai/country/belgium-ai-country-report/> (accessed 1 Apr. 2025).

⁴¹ <https://taxadmin.ai/country/germany-ai-country-report/> (accessed 1 Apr. 2025).

⁴² See <https://taxadmin.ai/country-reports/> for country reports on AI use by tax administrations in the European Union (accessed 1 Apr. 2025).

⁴³ Asian Development Bank, *supra* n. 25.

⁴⁴ *Ibid.*

⁴⁵ *A Comparative Analysis of Tax Administration in Asia and the Pacific-Sixth Edition*, Asian Development Bank 48 (2022), <https://doi.org/10.22617/tcs220571-2> (accessed 1 Apr. 2025).

definite, and who bears the burden when such a system makes a mistake? When AI is solely responsible for final decision making and offering advice to individuals, concerns arise regarding accountability for AI-induced errors and the availability of adequate recourse mechanisms for taxpayers. Therefore, the risks to taxpayers' rights seem to increase when final decision making heavily or exclusively depends on AI. However, this is a matter of scale, and it does not imply that every use of AI needs to be regulated, as demonstrated in the case of estimating property taxes for Nepalese tax officials to further analyse. Thus, the determination of risk levels for each process should be assessed in relation to the AI employed in that specific case.

Another example is the Australian Tax Office's (ATO) virtual assistant, Alex, leveraging AI to facilitate conversational inquiries about tax-related matters via the ATO website. Since its debut in February 2016, it has experienced a substantial increase in conversation volumes, reaching 1.4 million between July 2020 and March 2021 and has maintained a performance metric with an average of 94% for 'Final answer – provided'.⁴⁶ Here, AI has been utilized by the ATO to assist individuals with questions which is much like the information on a tax administration's website forming part of the service intended to aid people with general tax inquiries. Thus, it does not seem to significantly infringe on taxpayers' rights.

Regarding risk management, the Canada Revenue Agency (CRA) is using AI to improve taxpayer service provisions, detect non-compliance, and improve the efficiency of internal affairs. The CRA employs risk identification algorithms to classify taxpayer activities and has developed new systems and capabilities that provide detailed information on economic and legal relationships and analyse non-compliance in a more horizontal manner considering other data sources more systemically to understand and profile tax non-compliance.⁴⁷ Poland has experienced substantial revenue loss due to value added tax (VAT) related fraud and has consequently adopted the *System Teleinformatyczny Izby Rozliczeniowej* (STIR) that allows risk analysis and exchanging information between the financial sector, the National Revenue Administration, and the Central Register of Tax Data.⁴⁸

2.2 Principles to Ensure the Safe and Responsible Implementation of a Trustworthy AI

With the growing burden on tax administrations to adhere to the complex and increasing number of tax laws, it is to be expected that the efficiency benefits provided by AI cannot be disregarded and will therefore lead to implementing AI systems. However, this must be accompanied by safeguards to ensure that using AI tools respects well-established principles to protect taxpayers in tax administration procedures including tax collection, enforcement, and recovery. Additionally, using them must be cost efficient. Utilizing AI contrary to its intended use or failing to use responsible/trustworthy AI may otherwise lead to incurring high costs to correct any mistakes (*see* paragraph 3.2. where it is explained that the Dutch Government has a bill of over EUR eight billion).

International organizations and forums such as the G20, the World Economic Forum, the European Parliament, and the OECD acknowledge the need to adopt AI and have therefore created various essential principles regarding the safe and responsible implementation of a trustworthy AI.⁴⁹ From the various reports produced by these organizations, it can be seen that five principles are repeatedly found in the recommendations made in the reports by these organizations: transparency, explainability, accountability, fairness, and robustness.⁵⁰ These are traditionally the principles that have been used within tax systems but may need to be revisited and bolstered considering the digital age comprising AI tools and techniques to aid in tax administrations' traditional functions and also demonstrated the risks posed by the failure to uphold these principles.

The importance of transparency in AI directly relates to the opacity often associated with this technology that is commonly referred to as the 'black box' effect.⁵¹ The transparency and explainability principles complement each other, however, the latter is not always easy to achieve with the more complex and opaque AI tools. Explainability refers to AI's capacity to produce details or reasons that provide clarity and understanding of its functioning.⁵² It externally demonstrates what is occurring internally in the model by providing a human-readable explanation of the

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⁴⁶ *Ibid.*

⁴⁷ Serrano Antón, *supra* n. 2, at 580.

⁴⁸ Aleksandra Bal, *Black-Box Models as a Tool to Fight VAT Fraud*, in *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice* 227 (Bart Custers & Eduard Fosch-Villaronga eds, Springer Information Technology and Law Series IT & Law No. 35, 6 Jul. 2022).

⁴⁹ OECD, *supra* n. 20, at 8–9.

⁵⁰ OECD, *supra* n. 26.

⁵¹ Warren J. von Eschenbach, *Transparency and the Black Box Problem: Why We Do Not Trust AI*. In *Philosophy & Technology*, 34(4) Springer Sci. & Bus. Media LLC 1607–1622 (2021), doi: 10.1007/s13347-021-00477-0 (accessed 1 Apr. 2025)

⁵² Alejandro Barredo Arrieta, Natalia Díaz-Rodríguez & Javier Del Ser et al., *Explainable Artificial Intelligence (XAI): Concepts, Taxonomies, Opportunities and Challenges Toward Responsible AI*, 58 Info. Fusion 82–115, at 85 (2020), doi: 10.1016/j.inffus.2019.12.012 (accessed 1 Apr. 2025)

model's decision.⁵³ The black box effect arises from the AI applying an algorithm based on training data for which users can observe the input and output (the decision) of the algorithm. However, its inner workings, including the considerations made by the AI, remain obscure. This complexity within the system limits users' insights into its operations and consequently directly impact the principle of explainability.

Transparency focuses on the user's comprehension of the system while explainability pertains to the ability to elucidate the system's decisions for the individuals affected by those decisions. Given that users often lack access to the considerations preceding key decisions made by the AI, explaining these decisions to individuals impacted by it becomes challenging. Therefore, prioritizing transparency during the implementation and construction of the AI is crucial for addressing these challenges.⁵⁴ It is worth noting that AI tools are not necessarily antithetic to transparency and explainability as popularly stated and have and could effectively promote transparency and explainability of tax administrations. An example is tax administrations using large language models (LLMs) such as AI chatbots to provide advice and guidance to taxpayers in an attempt to improve taxpayers' service.

The third principle is that of accountability. As AI makes its decisions autonomously, questions arise concerning the responsible party in cases when it makes incorrect or harmful decisions. Various factors such as biased training data, inadequate user scrutiny of the AI, or the programmer incorporating discriminatory variables can contribute to flawed decisions of which each assigns responsibility to different entities. Consequently, various reports highlight the importance of establishing a clear framework that delineates the ultimate responsibility for each component of the AI before its implementation.⁵⁵

Fourth, fairness is continuously presented as a key consideration in AI, focusing on impartiality and equity within the system's functionality. The challenge arises from potential biases in training data, algorithms, or decision outcomes leading to unbalanced impacts on different social and economic groups. Mitigating these biases is essential for preventing discriminatory practices and upholding ethical standards. Achieving fairness involves

attention to biased sources that are used in the training data, transparent decision-making processes, and continuous monitoring to rectify unintended consequences. The goal is to develop AI systems that treat individuals fairly without perpetuating societal inequalities or biases.⁵⁶

Last, robustness is another routinely mentioned principle. It emphasizes the system's ability to perform effectively under various conditions and handle unexpected inputs without compromising accuracy. This is crucial in dynamic environments where AI systems must adapt to new challenges and laws. Maintaining robustness requires a comprehensive approach to system design, including stress-testing under diverse scenarios and anticipating potential vulnerabilities. By enhancing system resilience, organizations ensure reliability and integrity when faced with uncertainties. This involves strategies to identify and mitigate biases, incorporating fairness and transparency considerations into decision-making processes, and continuous monitoring and updates to enhance robustness.⁵⁷

The principles mentioned above are repeatedly cited by various organizations in numerous reports and are considered fundamental to the use of AI.⁵⁸ However, directly implementing them in the world of tax administration would require aligning them with existing legal concepts in tax law or, at the very least, contemplating their interaction with established principles in tax law. As described by organizations like the OECD, these principles have a general nature so that they may be applied across different sectors.⁵⁹ Given this abstract nature, it must be questioned whether these ethical principles from AI development can be directly applied to another field without modifications. Mittelstadt argues that relying solely on these AI principles will not be sufficient for ensuring a trustworthy AI system.⁶⁰ He opines that the relatively young principles from the AI field lack the specificity needed for application in a different field. He uses the example of AI applications in the medical industry to illustrate this. Mittelstadt notes that the ethical frameworks of AI development overlook various factors in this context such as societal impact, the absence of legal rules governing AI liability, and the lack of frameworks that can translate these principles into concrete and workable regulations. He suggests that, before applying AI in a

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⁵³ Sajid Ali et al., *Explainable Artificial Intelligence (XAI): What We Know and What Is left to attain Trustworthy Artificial Intelligence*, 99 Info. Fusion 5 (2023), doi: 10.1016/j.inffus.2023.101805 (accessed 1 Apr. 2025)

⁵⁴ OECD, *supra* n. 20, at 8.

⁵⁵ *Ibid.*, at 9.

⁵⁶ *Ibid.*, at 8.

⁵⁷ *Ibid.*, at 9.

⁵⁸ OECD, *supra* n. 26.

⁵⁹ *Ibid.*

⁶⁰ Brent Mittelstadt, *Principles Alone Cannot Guarantee Ethical AI*. In *Nature Machine Intelligence*, 1(11), Springer Sci. & Bus. Media LLC 501–507 (2019), doi: 10.1038/s42256-019-0114-4 (accessed 1 Apr. 2025)

specific field, the distinct use case must be discussed first, and standards need to be crystallized before implementing AI safely. It remains uncertain whether current laws and regulations have foreseen this technological development as laws may not be technologically neutral with legislators possibly having been unable to anticipate the applications of AI. Consequently, Mittelstadt asserts that there are standards around AI that have yet to be developed in society precisely because this application is a product of the modern era.⁶¹

2.3 Preliminary Conclusions

This examination of the literature regarding AI in taxation has provided insights into the principles needed to secure taxpayer rights when implementing it within tax administrations. The global attention towards the intersection of AI and society has led to collaborative efforts as seen in initiatives such as the 2023 Bletchley Declaration (*see* section 1 above) and the current work by the Council of Europe on the development of a Framework Convention advocating for trustworthy AI. The trend towards digitization for tax authorities' activities with reported adoption rates exceeding 70% positions AI as pivotal for automating complex processes. The transition to automated decision making raises questions about the Rule of Law and individual taxpayer rights and emphasizes the need to balance efficiency gains; preserve legality and individual rights; and the need for technologically neutral laws. However, the authors have noticed that only a minimal number of the reports published by major international organizations have focused on the issue of taxpayer rights in relation to implementing AI.

This review defining AI as a tool enabling digital automation through software and emphasizes its potential to

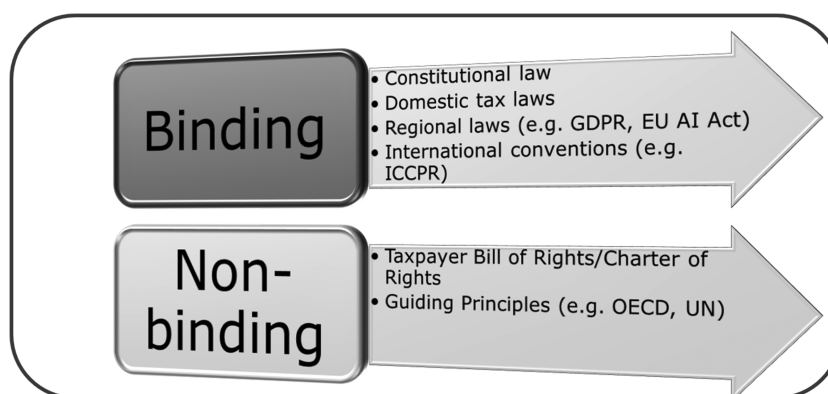
enhance efficiency for tax administrations' activities. Applications range from chatbots assisting taxpayers to predictive technology addressing tax gaps and fraud. However, the inclination to swiftly adopt technology without the necessary safeguards may be especially compelling for a tax authority grappling with a substantial workload that could result in violating taxpayers' rights. Transparency, explainability, accountability, fairness, and robustness emerge as fundamental considerations in responsible AI implementation to possibly prevent this. Transparency and explainability address opacity, accountability navigates responsibility questions, fairness focuses on impartiality, and robustness emphasizes effective performance under diverse conditions. Despite recognizing these principles as fundamental, their direct application in taxation requires alignment with existing legal concepts or contemplation of their interaction with tax law principles. The authors therefore emphasize and reiterate the concerns raised by scholars, such as Mittelstadt, regarding the specificity of AI principles for different fields. The necessity for nuanced discussions and crystallized standards before AI implementation in tax administrations should therefore be underscored when reviewing the relation between AI principles and tax law.

3 AI AND TAXPAYER'S RIGHTS

3.1 Situating Taxpayers' Rights in AI-powered Tax Administration

There is no universally accepted definition of taxpayers' rights.⁶² They may be regarded as the protection offered by written or unwritten rules governing both fiscal aspects such as the levying of taxes that would otherwise be inconsistent with the law and non-fiscal aspects of the relationship between the taxpayers and the tax administrations. The sources of taxpayers' rights can be domestic

Figure 2 Sources of Taxpayers' Rights in a Digital Age



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⁶¹ *Ibid.*, at 501–507.

⁶² Bogumił Brzeziński, *Taxpayers' Rights: Some Theoretical Issues in Protection of Taxpayer's Rights: European, International and Domestic Tax Law Perspective* 18 (Wolters Kluwer 2009).

or international laws that can be either binding or non-binding.

It is crucial to first contextualize taxpayers' rights in the era of AI, before discussing their relevance. It was previously highlighted that using AI tools provides opportunities for tax administrations to reap efficiency gains through the automation of their various mandates. In the assessment of tax administrations' functions, one key element is that they all relate to the existence of a relationship between the tax administration and taxpayers. This extends to all of the functions ranging from enhancing services to taxpayers (for example, by employing large language models such as chatbots or virtual assistants)⁶³ to the more coercive forms such as using predictive analytics for risk management, tax audits, and compliance checks and, finally, dispute resolution. To achieve the efficiency goals, AI tools do not remove but instead reduce the human discretion in these functions by either replacing the tax officials (for example, chatbots that work independently) or reducing their role to supervisors of the AI tools. Naarttijärvi states that 'automation can move the exercise of discretion from the frontlines of administrative agencies to the backrooms, to system engineers and IT consultants'.⁶⁴ Therefore, tax officials redirect their attention from simple and mundane tasks and instead expend their efforts in resolving complex tax matters by becoming the checks and balances for verifying the results from using AI tools particularly in complex tax matters. Bentley summarizes the impact of AI on taxpayers' rights based on its adoption from basic to advanced level uses. The former involves utilizing it for customer service-related functions such as chatbots and voice support which uses early-stage AI reliant on stable, well-defined, and highly structured information sets to enable effective machine learning and reliable and ascertainable outcomes.⁶⁵ Further, for the latter continuum, AI automates work requiring some level of human intelligence to support (rather than replace) most tax administration roles to increase their effectiveness and efficiency.⁶⁶

Due to the diversity of systems leveraged by tax administrations and their central role in the tax compliance risk management process, the integration of AI generates a

number of externalities against taxpayers' rights. Most notably, tax administrations' use of AI generates risks of conflicts with taxpayers' right to privacy and data protection as well as the right to transparency, accountability, non-discrimination, and legality. These risks have materialized in a number of landmark cases presented in section 3.2 below.⁶⁷

Arguably, the relationship between taxpayers' rights and AI-powered tax administration may be regarded as interconnected in that the failure to uphold taxpayers' rights in algorithmic and automated tax administration potentially leads to violating their rights and vice versa. Considering this, the case law discussed in subsequent sections in this article show the positioning of taxpayers' rights and their relevance in the adoption of AI tools by tax administrations globally. The analysis of the selected cases below is not exhaustive.⁶⁸ Its goal is to illustrate some recent cases where the interaction between the use of technology and the tax administration powers to collect and enforce taxes have disrupted the balance between taxpayers' rights and digitalization.

3.2. Relevance

Fundamental rights and the Rule of Law are carefully balanced between the administration's prerogatives and the taxpayers' rights. This is equally true for taxpayers' fundamental rights. The integration of AI has disrupted the existing balance of powers in favour of the administration particularly due to its rapid pace and the absence of a dedicated framework to regulate this disruptive technology. Current technological developments generate significant transformative effects for revenue authorities and tax governance thus exacerbating risks of conflicts with taxpayers' rights. These developments highlight the need for new rules to ensure that the Rule of Law transfers to a Digital Rule of Law. This will be explained more comprehensively below. The need for such a legislative framework ensuring the responsible AI-readiness of tax administrations has already been emphasized by other international organizations such as the OECD and the IMF.⁶⁹ The analysis focuses on specific landmark cases of fiscal algorithmic governance where,

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⁶³ OECD, *Tax Administration 2022: Comparative Information on OECD and Other Advanced and Emerging Economies* (2022); OECD et al., *Inventory of Tax Technology Initiatives*, at Table TT5 (2022) ('Tax Administration 2022').

⁶⁴ Markus Naarttijärvi, *Situating the Rule of Law in the Context of Automated Decision-Making*, in *The Rule of Law and Automated Decision-Making: Exploring Fundamentals of Algorithmic Governance* 21 (Markku Suksi ed. Springer 2023).

⁶⁵ Duncan Bentley, *Taxpayer Rights and Protections in a Digital Global Environment*, in *Ethics and Taxation* 269 (Robert F. Van Bredorpe ed., Springer 2020).

⁶⁶ *Ibid.*, at 269.

⁶⁷ Other cases could be cited, for instance, the data leak at the Bulgarian Revenue Agency in 2019 or the Earned Income Tax Credit audit rate disparity at the IRS in 2021; see respectively: Ivana Kottasova (21 Jul. 2019) 'An entire nation just got hacked' CNN; <https://edition.cnn.com/2019/07/21/europe/bulgaria-hack-tax-intl/index.html> (accessed 1 Apr. 2025); Hadi Elzayn et al., *Measuring and Mitigating Racial Disparities in Tax Audits*, Stan. Inst. Econ. Pol'y Res. 38–39 (2023); see also Kathleen Bryant & Chye-Ching Huang, *New Evidence on Racial Disparities in IRS Audit Selection Calls for Immediate Action*, NYU Tax Law Center 1–15 (2023).

⁶⁸ For the discussion of cases regarding taxpayers' rights and the rule of law, see for instance, the work carried out by the IBFD Observatory of Taxpayers' Rights Observatory on the Protection of Taxpayers' Rights (OPTR) | IBFD and the Annual International Conferences Organized by the Center of Taxpayers' Rights CENTER FOR TAXPAYER RIGHTS – Advancing Taxpayer Rights in the US and Internationally.

⁶⁹ See for instance, Joshua Aslett, Stuart Hamilton, Ignacio Gonzalez, David Hadwick & Michael A Hardy, *Understanding Artificial Intelligence in Tax and Customs Administration* 15–17 (Technical Notes and Manuals No. 006, 2024,), <https://doi.org/10.5089/9798400290435.005> (accessed 1 Apr. 2025); OECD, *Digital Transformation Maturity Model*, OECD, Paris 26–27 (2022), www.oecd.org/tax/forum-on-tax-administration/publications-and-products/digital-transformation-maturity-model.htm (accessed 1 Apr. 2025).

despite the existence of a rule of law and a constitution, protection for the taxpayer was sufficient due to a lack of precise ad hoc norms on the use of AI by tax administrations.

In the absence of ad hoc norms on the use of AI by tax administrations, fundamental rights and general principles of law are not sufficiently precise to be operationalized by tax officials. Web scraping systems collect volumes of taxpayer and third-party data disrupting the declarative nature of tax reporting; social network analyses enables 'social scoring' or computing taxes through data generated in entirely different contexts; and nudging can be so effective as to entirely distort taxpayer behaviour.⁷⁰ These considerations are entirely novel to fundamental rights and tax procedures that remain primarily based on the paper-based model of the tax administration 1.0. An absence of ad hoc norms for the tax administrations' using AI does not ensure that the protection guaranteed by fundamental rights will be adequately applied to algorithmic compliance risk management.

3.3 Digital Rule of Law

3.3.1 Electronic Data

Technology expands tax administrations' capacity to gather substantial amounts of data from the internet, social media, camera surveillance, satellites, transmission towers, etc. The OECD mentions seven sources available for tax audits: data from devices, banks, merchants or payment service providers, suppliers, customers, governmental agencies, unstructured data concerning taxpayers, and international data.⁷¹ This enables collecting personal and sensitive information such as biometric data,⁷² posts on protected social media pages,⁷³ information on search history via data brokers, etc. It can reveal someone's racial or ethnic origin, political opinions, religious beliefs,⁷⁴ or sexual preferences that can be negatively exploited and further combined to create new information. This knowledge can be disclosed without any loss of quality and without any boundaries especially when a cloud environment is used.⁷⁵ The increased pace of collection and sharing information render rectifications of inaccuracies

more complex and hinder protection against data leaks, breaches, and violations of privacy.⁷⁶

3.3.2 Technological Developments

Technological developments have, in practice, increased the discretionary authority of tax administrations via, e.g., using risk models, real time surveillance, humanoid robots, drones, or advanced automated decision-making systems. These use cases create new societal paradigm and correspondingly new legal questions such as: is it allowed to fly with a drone to examine a taxpayer's place of residence, does a principle of legal certainty apply when chatbots provide information, or can AI be used for behaviour interventions to enforce a tax liability? Current legislation may not offer a sufficient system of legal protection in tax law since it is not designed for or considering the possibilities provoked by such advanced technology. Additionally, legislation may constantly lag behind compared to technological developments. This means that it is also important to formulate new general principles of law to secure taxpayers' rights.⁷⁷

3.3.3 Reliance on automation

Several factors such as ageing populations, loss of human workforce, and increasing administrative and documentary burdens accelerate the digitalization of tax administrations.⁷⁸ The OECD indicates that seamless taxation and tax monitoring are the leading examples of this. The former denotes a decentralized model of fiscal governance in which tax administrations' algorithms and sensors in applications are directly embedded within the taxpayers' digital ecosystems. The OECD's tax administration 3.0 model foresees that, in the near future, taxpayers' tax burdens will be determined in real-time on their IoT devices based on sensors and applications collecting inputs directly from the taxpayers' natural environment. These applications will also enable automatic tax payments without any taxpayer intervention.⁷⁹ The OECD presents the example of 'Mary in the 2030s' who is an employee working across countries.⁸⁰ Mary's tax

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⁷⁰ Diana van Hout, *Gedragsbeïnvloeding in het belastingrecht: Are you 'nudge'*, Tijdschrift voor Fiscaal Recht, [549–550], at 928–936 (2018).

⁷¹ OECD, *The Changing Tax Compliance Environment and the Role of Audit*, OECD Publishing, Paris 73 and 74 (2017).

⁷² OECD, *Forum on Tax Administration, Tax Administration 3.0*. The Digital Transformation of Tax Administration 29, 45 and 47 (8 Dec. 2020), https://www.oecd.org/en/publications/tax-administration-3-0-the-digital-transformation-of-tax-administration_ca274cc5-en.html and, <https://www.irs.gov/newsroom/irs-statement-new-features-put-in-place-for-irs-online-account-registration-process-strengthened-to-ensure-privacy-and-security> (accessed 1 Apr. 2025).

⁷³ For example, OECD, *supra* n. 71, at 75.

⁷⁴ Article 9 GDPR defines this kind of information as special categories of personal data.

⁷⁵ Diana van Hout, *Fiscale Technologie en het Nationale Formele Recht*, in *Belastingrecht en technologie* 113–117 (A. Bomer e.a. eds, Deventer: Wolters Kluwer 2022).

⁷⁶ See also Debelva & Mosquera Valderrama, *supra* n. 8, at 362–381.

⁷⁷ Diana van Hout, *Algemene beginselen van binair bestuur* 11 (Den Haag: Sdu 2019).

⁷⁸ van Hout, *supra* n. 75, at 113–117.

⁷⁹ OECD, *Tax Administration 3.0: The Digital Transformation of Tax Administration* 11–16 (2020).

⁸⁰ *Ibid.*, at 32–33.

liability is determined in real-time based on input data collected from different sources such as her employer (e.g., salary), her real estate agent (e.g., ownership of property), and her hospital (e.g., pregnancy). As she has an international working position, geolocation determines her place of taxation. Taxes are automatically transferred from her bank account to the tax administrations of her working countries; Mary has no need to be involved.⁸¹ This example illustrates how this model could alleviate compliance costs both for the administration and the taxpayer. Seamless taxation represents a significant departure from the current model, which relies on taxpayer-reported data and retrospective enforcement.

Giving the above-described developments, the relationship between taxpayers and tax administrations creates a new balancing equation. This can be illustrated in greater detail by a number of examples: the Dutch ‘Toeslagenaffaire’ (Child Care Allowance Scandal) and, more specifically, the ‘Fraude Signalerend Voorziening’ (Fraud Detection System (FDS)); the Slovakian *eKasa* case; *RoboDebt* in Australia; and the British Postmasters scandal.

3.4 Dutch FDS

The FDS was discovered during the Child Care Allowance Scandal and revealed the risks generally associated with AI such as: bias in the data and the system, the lack of protection of privacy sensitive information, the exchange of incorrect digital information, and legal systems that failed to protect taxpayers sufficiently. Due to the limited scope of this research, however, the authors will primarily discuss the exchange of polluted data to illustrate an important deficiency in the system of legal protection in tax law.

The FDS was a system implemented by the Dutch Tax Administration to enhance efficiency and deal with ICT problems related to executing childcare allowance legislation. The FDS was a central compliance risk register used for several purposes such as assessing income tax returns, providing VAT identification numbers, evaluating social security applications, and information exchange with other government organizations.⁸² During the Childcare Allowance Scandal, research of the Dutch Data Protection Authority (Dutch DPA) revealed that all sorts of risk signals could end up in the FDS database. The DPA also

discovered that the FDS contained inaccurate data either due to a lack of thorough research or a failure to correct and update the information in the event of false positives. The FDS had records of over more than 270,000 citizens and entrepreneurs, including nearly 1,800 minors. Since the FDS system was missing a separate tab for victims of (identify) fraud, it also contained data from more than 1,500 victims.⁸³

According to PwC’s research, approximately 58% of the FDS registrations in the individuals department and about 16% in the small and medium-sized businesses departments of the Dutch Tax Administration were based on risk signalling during the examination of income tax returns.⁸⁴ In the manuals for the analysts, certain queries contained descriptions of risk indicators for incorrect tax returns that were based on personal characteristics such as nationality, surname, postal code, age, gifts to mosques, etc. Although the evidence in the research was incomplete and could not be independently verified, PwC found enough proof to conclude that part of the selection of the income tax returns for examination was more focused on taxpayers’ characteristics rather than on tax-related risks. PwC additionally concluded that returns with such alleged increased fraud risk (AKI 1043) were placed in the FDS and could then be used again as a high-risk indicator for the following tax year (hence, subjecting taxpayers to intensive scrutiny for multiple years).⁸⁵ The state secretary therefore declared that the Dutch Tax Administration committed ‘institutional racism’.⁸⁶

The FDS was not only used by the individuals and small and medium-sized businesses department of the Dutch Tax Administration but also by other departments. Being registered in the FDS implied a higher risk indicator of tax fraud for at least three risk models. A total of 5,123 employees had access to the system, although it was officially limited to approximately 1,000. Tax officers with mutation rights could change all kinds of information in the FDS. This was not sufficiently logged or monitored in the system and thus not protected in a manner that complies with prescribed standards of data protection.⁸⁷ The Dutch Tax Administration also shared data of persons listed in the FDS with other government agencies. Data from the system could be exported to Excel or sent to private email accounts of individual tax officials.

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⁸¹ *Ibid.*, at 36–37.

⁸² Autoriteit Persoonsgegevens, *Onderzoeksrapport Belastingdienst Verwerking van Persoonsgegevens in de Fraude Signalerend Voorziening (FSV)* (Oct. 2021), at 11 https://www.autoriteitpersoonsgegevens.nl/uploads/imported/onderzoek_belastingdienst_fraude_signalerend_voorziening_fsv.pdf (accessed 1 Apr. 2025).

⁸³ Vgl. Brief Staatssecretaris van Financiën d.d. 17 Jun. 2021, nr. 2021–0000117558, V-N 2021/28.3 and d.d. 29 Mar. 2022, nr. 2022–0000107779, V-N 2022/16.17.

⁸⁴ Kamerstukken II, 2021/22, 31066 nr. 957, attachment I, Rapport PwC effecten FSV Particulieren, p. 13; and Kamerstukken II, 2021/22, 31066 nr. 992, attachment I, Rapport PwC effecten FSV MKB, p. 17.

⁸⁵ PwC Onderzoek Query’s aan de poort, 22 Mar. 2022, <https://www.rijksoverheid.nl/documenten/rapporten/2022/03/16/onderzoek-query's-aan-de-poort> (accessed 1 Apr. 2025).

⁸⁶ Brief Staatssecretaris van Financiën d.d. 7 Jul. 2022, 2022–0000183867 V-N 2022/32.22 and Brief Staatssecretaris van Financiën d.d. 30 May 2022, ongenummerd, V-N 2022/26.3.

⁸⁷ Persoonsgegevens, *supra* n. 82.

Consequently, it was no longer possible to precisely determine how often and with whom specific data was shared despite strict confidentiality provisions prescribed by Dutch tax law.⁸⁸

The inclusion in the FDS could have had far-reaching consequences. For instance, if someone had debts exceeding EUR 10,000, the tax collector would no longer cooperate in reaching a debt settlement. This combination of inclusion in the FDS and such tax debts meant that the taxpayer was considered not to be acting 'in good faith'.⁸⁹ Given the disclosure of data from the FDS to other government bodies, it is conceivable that citizens also faced other consequences of being listed in that system in other legal areas even if it did not lead to a legal decision.⁹⁰

The FDS was used from 4 November 2013 until 27 February 2020,⁹¹ and it was clear that the Dutch Tax Administration breached the General Data Protection Regulation (GDPR) for which the Ministry of Finance received a fine of EUR 3.7 million from the DPA.⁹² However, this fine did not help the taxpayers that were registered in the FDS. First, only natural persons were informed by the Ministry of Finance that they were listed. The more than 85,000 legal entities that were registered were, as far as is currently known, not informed because the GDPR does not apply to legal entities according to the State Secretary of Finance.⁹³ Second, the tax court in the Netherlands declared that the breach of the GDPR by the Dutch Tax Administration does not have any effect on the tax assessment because its legality has to be tested by the rules in tax law.⁹⁴ This means that Dutch citizens basically have to lodge an appeal to every single decision of a governmental institute that is (presumably) based on the FDS' polluted data. Legislation for the system's recovery procedure was implemented on 1 January 2024 in the

Netherlands and mitigates this deficiency in the system of legal protections.

However, before 2024, the rectification of polluted data was extraordinary difficult or even impossible to rectify and, thus, the taxpayers have to deal with the consequences. For instance, in the Child Care Allowance Scandal, it took years of perseverance before the government believed these people. The expected costs of the recovery procedure for it were EUR eight billion in 2023,⁹⁵ and the FDS recovery procedure has cost an additional EUR 137 million⁹⁶ for the Dutch state.

3.5 RoboDebt and Horizon scandals

The fundamental risks posed by inaccurate data can be equally observed in *RoboDebt* in Australia for which the Australian Government sought to automate the system of debt recovery and issue computer-generated debt notices to welfare recipients who had been overpaid.⁹⁷ The system was implemented in January 2017 and extended less than a year later to welfare payments for disability and pensions.⁹⁸ In May 2020, three year after its deployment, *RoboDebt* was stopped after it issued 470,000 erroneous debts notices.⁹⁹ The root cause was the program's method of income calculation that relied on specific data points to average yearly income. Later inquiries show that *Robodebt* relied on matching data from the Australian Taxation Office (ATO) with Centrelink's own records with lax verification and discrepancies elimination processes. In turn, the automated decision-making system issued incorrect debt notices of more than AUD 1.2 billion in repayments.¹⁰⁰

In the British Post Office scandal, or *Horizon* scandal, over 900 sub-postmasters were erroneously convicted of fraud by the post office between 1999 and 2015 because

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⁸⁸ Kamerstukken II, 2021/22, 31066, nr. 957, bijlage II Rapport PwC, Onderzoek gegevensdeling met derden, <https://www.rijksoverheid.nl/documenten/rapporten/2022/01/19/bijlage-2-rapport-pwc-externe-gegevensdeling-uit-fsv> (accessed 1 Apr. 2025).

⁸⁹ Brief Staatssecretaris van Financiën 27 Jan. 2021, Kamerstukken II 2020/21, 31066, nr. 807, <https://zoek.officielebekendmakingen.nl/kst-31066-807.html?idp=https%3A%2F%2Fengine.surfconext.nl%2Fauthentication%2Fidp%2Fmetadata> (accessed 1 Apr. 2025).

⁹⁰ Marlies van Eck, Diana van Hout & Martijn Weijers (2022), *Olievllek op vlek De zwarte lijst(en) bij de Belastingdienst*, NJB 2022/1283, at 6.

⁹¹ Brief Staatssecretaris van Financiën d.d. 2 Mar. 2020, nr. 2020-0000046117, <https://open.overheid.nl/documenten/ronl-525a7f55-196c-442d-9a60-b2017fd053a4/pdf> (accessed 1 Apr. 2025).

⁹² Brief Staatssecretaris van Financiën d.d. 12 Apr. 2022, 2022-0000119406, V-N 2022/18.17, <https://www.rijksoverheid.nl/documenten/kamerstukken/2022/04/12/kamer-brief-handhavingsbesluit-autoriteit-persoonsgegevens-fsv> (accessed 1 Apr. 2025).

⁹³ Brief van de Staatssecretaris van Financiën d.d. 24 Feb. 2022, 2022-0000055632, V-N 2022/11.13, <https://open.overheid.nl/documenten/ronl-036332cbfc69fe6d1c32fb5f8e82285086a8d1b6/pdf> (accessed 1 Apr. 2025).

⁹⁴ Hoge Raad 10 Dec. 2021, ECLI:NL:HR:2021:1748 and Hoge Raad 14 Jan. 2022, ECLI:NL:HR:2022:14.

⁹⁵ For example, Algemene Rekenkamer, *Resultaten verantwoordingsonderzoek, Ministerie van Financiën en Nationale Schuld*, Rapport bij het jaarverslag 5, 71 and 72 (2023), <https://www.rekenkamer.nl/actueel/nieuws/2024/05/15/helft-van-de-ouders-wacht-nog-maar-hersteloperatie-toeslagen-wel-op-gang> (accessed 1 Apr. 2025) A reservation solely for the compensation is € 5.7 billion by the government in 2024: Miljoenennota, Belastingplan, begrotingen en bijbehorende stukken | Prinsjesdag: Miljoenennota en Rijksbegroting | Rijksoverheid.nl (accessed 1 Apr. 2025).

⁹⁶ Kamerstukken II 2023/24, 36424, nr. 6 and Tegemoetkomingsbeleid FSV vastgesteld door kabinet, Nieuwsbericht | Rijksoverheid.nl.

⁹⁷ Parliament of Australia (Sep. 2020), Community Affairs References Committee, *Centrelink's compliance program – Second Interim Report*, Commonwealth of Australia, at 4–10.

⁹⁸ Richard Glenn, *Centrelink's Automated Debt Raising and Recovery System*, Report by the Acting Commonwealth Ombudsman, Report n°02, 5–6 (2017).

⁹⁹ Luke Henriques-Gomes, *Robodebt: government to refund 470,000 Unlawful Centrelink Debts Worth 721m*, The Guardian (29 May 2020), <https://www.theguardian.com/australia-news/2020/may/29/robodebt-government-to-refund-470000-unlawful-centrelink-debts-worth-721m#maincontent> (accessed 1 Apr. 2025).

¹⁰⁰ *Prygodicz v. Commonwealth*, Federal Court of Australia, Order N° VID1252/2019 (23 Dec. 2020).

of faults in the Fujitsu Horizon software.¹⁰¹ Although the exact causes of the fault remain under investigation, it is established that the Horizon software caused discrepancies in account balances.¹⁰² Despite complaints from sub-postmasters, the post office did not take adequate steps to investigate the Horizon system.¹⁰³ Critics argue that this occurred as English and Welsh law prescribed a general presumption of reliability for evidence produced by computers such as the faulty outputs generated by the Horizon system.¹⁰⁴ Hence, the post office scandal exhibits the same traits as *RoboDebt* and the *Toeslagenaffaire*, specifically inaccurate data and an absence of human discretion in technology-related matters.

3.6 eKasa

In *eKasa*,¹⁰⁵ 33 deputies of the Slovak Parliament initiated proceedings before the constitutional court and claimed that the real-time remittance of transactional data for algorithmic processing was contrary to taxpayers' fundamental rights. In July 2019, Slovakia passed rules mandating the use of online cash registers that transmitted transactional data to the tax administration in real-time.¹⁰⁶ The data was meant to be processed by machine-learning algorithms to detect risks of non-compliance or fraud and to classify taxpayers into risk deciles to inform tax audit selection.¹⁰⁷ This was meant to curb tax fraud and reduce the VAT compliance gap in Slovakia that is among the highest in the EU.¹⁰⁸ However, while the law regulated the use of the online cash registers, it did not explicitly provide a legal basis nor safeguards for the use of the machine-learning algorithms.¹⁰⁹

The deputies argued inter alia that such an absence of regulation is contrary to the principle of legality as well as

taxpayers' rights to privacy and data protection.¹¹⁰ In addition, the complaints asserted that the system in question posed substantial risks of discrimination, particularly as it attributed a unique identifier to sellers and buyers that enabled access to buyers' purchase history.¹¹¹ Data on individual consumption habits may indeed potentially reveal sensitive attributes such as gender or religious or political affiliation that subsequently generates a risk of unjustified differentiating between taxpayers based on those. Moreover, upon aggregation, individual consumption habits bear the risks of revealing even more information about individual taxpayers thereby exceeding the realm of what is necessary for taxation purposes. The Slovak Constitutional Court sided with the claimants and found that the absence of safeguards was contrary to the constitutional right to privacy. Citing seminal work of data protection scholars such as Pasquale¹¹² and Hildebrandt¹¹³ and the landmark ECHR case *Big Brother Watch*,¹¹⁴ the court confirmed that using machine-learning classifiers in this case constitutes a form of surveillance that may produce detrimental effects on taxpayers.¹¹⁵ The court weighed heavily on the fact that, although there was a general legislative framework for cash registers, the legislature did not explicitly consider the risks generated by the AI classifier that would score taxpayers based on their transactional data, including individual consumption habits (known as 'silent law').¹¹⁶ In that regard, *eKasa* constitutes a carbon copy of *SyRI*¹¹⁷ as both Dutch and Slovak legislatures failed to demonstrate an appropriate assessment of the risks incurred by taxpayers and to adopt a blend of technical and legal safeguards to cope with those risks. The Slovak Court prescribed a number of *ex-ante* and *ex-post* measures

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¹⁰¹ Michael Race & Lora Jones, *Post Office Scandal: The Ordinary Lives Devastated by a Faulty IT System*, BBC News (2024), <https://www.bbc.com/news/business-67956962>; *Post Office IT System Criticised in Report* BBC News, <https://www.bbc.com/news/uk-29130897> (accessed 1 Apr. 2025).

¹⁰² *Alan Bates et al. v. Post Office Limited*, [2019] EWHC 606 (QB), §§44 et seq.

¹⁰³ James Robinson, *Sub-postmasters Used as 'Guinea Pigs', Says Expert Who Warned of Problems in 2003* SkyNews (2024), <https://news.sky.com/story/post-office-scandal-sub-postmasters-used-as-guinea-pigs-to-grind-out-issues-in-horizon-says-expert-who-warned-of-problems-in-2003-13045484> (accessed 1 Apr. 2025).

¹⁰⁴ Nicholas Bohm et al., *The Legal Rule That Computers are Presumed to Be Operating Correctly – Unforeseen and Unjust Consequences*, 19 DEESLR 124–125 (2022), doi: 10.14296/deeslr.v19i0.5476 (accessed 1 Apr. 2025).

¹⁰⁵ Constitutional Court of the Slovak Republic, PL. ÚS 25 /2019-117.

¹⁰⁶ Act no. 289/2008 Coll. on the use of an electronic cash register and on amendments to Act of the Slovak National Council No. 511/1992 Coll. on the administration of taxes and fees and on changes in the system of territorial financial authorities, as amended 1 Jul. 2018 (latest version 17 Dec. 2021).

¹⁰⁷ Constitutional Court of the Slovak Republic, PL. ÚS 25 /2019-117, II. 6, Opinion of the Financial Directorate, §17.

¹⁰⁸ When considering percentage of VTTL, not absolute values. See DG TAXUD, Study and Report on the VAT Gap in the EU – 28 Member States: 2018 final report TAXUD/2015/CC/131, at 19 & 47 – VAT Gap as % of VTTL is 26% – above the EU average of 12.3%.

¹⁰⁹ Constitutional Court of the Slovak Republic, PL. ÚS 25 /2019-117, §123.

¹¹⁰ *Ibid.*, Petition, §19.

¹¹¹ *Ibid.*, §§63–73.

¹¹² Frank Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information* 140–141 (Harvard University Press 2015).

¹¹³ Mireille Hildebrandt, *Defining Profiling: A New Type of Knowledge?*, in *Profiling the European Citizen* 17–45 (Hildebrandt & Gutwirth eds, Springer 2008) doi.org/10.1007/978-1-4020-6914-7_2 (accessed 1 Apr. 2025).

¹¹⁴ ECHR, *Big Brother Watch and Others v. The United Kingdom*, 25 May 2021, Applications n° 58170/13, 62322/14 and 24960/15.

¹¹⁵ Constitutional Court of the Slovak Republic, PL. ÚS 25 /2019-117.

¹¹⁶ *Ibid.*

¹¹⁷ Rechtbank Den Haag 5 Feb. 2020, ECLI:NL:RBDHA:2020:865.

to mitigate the risks posed by the classifier divided into three main headers: (1) transparency; (2) individual protection; and (3) collective supervision.

The extensive focus on the concept of 'feeling of surveillance' by the Slovak Court in *eKasa* is particularly interesting as it portends the future of tax enforcement as envisaged in the model of 'seamless taxation', 'frictionless taxation', or 'tax administration 3.0'. Reports on tax administration 3.0 omit the obvious significant issue that this governance model requires inviting the tax administration directly in one's personal (digital) environment. Similar to the findings of the Slovak Constitutional Court in *eKasa*, the integration of government-supported applications with real-time access to taxpayers' data entails the risk of a feeling of surveillance and may be detrimental to taxpayers' rights. Such profound changes reiterate the paramount importance of dedicated future-proof norms for protecting taxpayers' rights in the context of algorithmic governance.

3.7 The Effectiveness of the International and Regional Instruments

Taxpayers' data constitutes a critical element of tax administration as tax authorities would be unable to conduct their mandate of ensuring tax compliance without the access to it in the first instance. The use of AI has shifted the balance creating information asymmetry in that tax administrations increasingly have access to significant amounts of taxpayers' data even without their or their advisors' knowledge. AI-powered tax administration has increased the accessibility to taxpayers' personal and business data that can be used to better understand their behaviour, increase transparency, and enhance the fight against tax evasion and tax fraud.¹¹⁸ The discourse on collection, processing, managing, and storing taxpayers' data by tax administrations vis a vis taxpayers' rights predates the use of digital tools such as AI. However, such discourse is increasingly gaining relevance presently given that technology only amplifies the legal risks posed to taxpayers' rights by tax information exchange.¹¹⁹ Significant literature on protecting taxpayers' rights focuses on the impact of the cross-border exchange of tax information by tax administrations especially with the emergence of automated exchange of information. Protections for taxpayers' rights can be found in unilateral

(countries' constitutions or domestic data protection laws), bilateral (for example, double tax conventions and tax information exchange agreements that provide for exchange of information between contracting states and the limitations), and multilateral measures as adopted by countries although the majority of the multilateral measures are non-binding and constitute soft law. This section will focus on multilateral measures championed by international organizations of which some are binding. The various bills of rights for taxpayers in different countries can be included in this context.

Regarding international tax instruments, both the OECD and UN Model Tax Conventions provide for the confidentiality of information shared under the exchange of information provisions. Both conventions prescribe that it is treated as confidential when obtained under the receiving state's domestic laws limiting the disclosure of such information only to the persons or authorities 'concerned with the assessment or collection of, the enforcement or prosecution in respect of, the determination of appeals in relation to the taxes referred to in paragraph 1, or the oversight of the above'.¹²⁰ The commentaries to both conventions also refer to the right to privacy and data protection. They state that countries may include within their bilateral conventions the protection of personal data which includes an individual's rights and fundamental freedoms and especially the right to privacy concerning automatic processing of personal data.¹²¹ Therefore, the two model tax conventions preserve the taxpayers' substantive rights to confidentiality, privacy, and data protection insofar as they limit the persons to whom the disclosure is made and using that information for the purposes stipulated. The Multilateral Convention on Mutual Administrative Assistance in Tax Matters (MAC) refers in its preamble to the necessity of upholding the confidentiality of information and international instruments for protecting privacy and flows of personal data. The convention also has a provision similar to the OECD Model by requiring that information obtained thereunder be treated as secret and accorded the necessary level of protection as would be provided under the receiving party's domestic law and safeguards that are provided under that of the supplying party.¹²²

At a regional level, the EU's Directive on Administrative Cooperation (DAC1) mandates that 'information communicated between Member States in

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¹¹⁸ Irma Mosquera Valderrama, *An ASEM Model of Cooperation in Digital Economy Taxation: Digitalisation and New Technologies*, in *13th Asia-Europe Meeting (ASEM) Summit: Multilateral Cooperation for a Resilient, Sustainable and Rules-Based Future for ASEM*, Jakarta: ERIA, Phnom Penh: ASEM13 and The Royal Government of Cambodia 86–111, at 87 (Anita Prakash eds 2021).

¹¹⁹ Arthur J. Cockfield, *Protecting Taxpayer Privacy Rights under Enhanced Cross-Border Tax Information Exchange: Toward A Multilateral Taxpayer Bill of Rights*, 42(2) U.B.C.L. Rev. 420 (Jan. 2010).

¹²⁰ Article 26(2), The OECD Model Tax Convention on Income and on Capital; Art. 26(2), The UN Model Double Taxation Convention.

¹²¹ OECD, Commentary on Art. 26 of the Model Tax Convention, para. 10 and Commentary to Art. 26 of the UN Model, para. 5.2. See also Debelva & Mosquera Valderrama, *supra* n. 8, at 362–381.

¹²² OECD and Council of Europe, *The Multilateral Convention on Mutual Administrative Assistance in Tax Matters: Amended by the 2010 Protocol*, OECD Publishing (2011), Art. 22.

any form pursuant to this Directive shall be covered by the obligation of official secrecy and enjoy the protection extended to similar information under that national law of the Member State which received it'.¹²³ Instruments that may also be relied upon although they have scope beyond taxation and insofar as they are binding on their signatories are the European Convention on Human Rights (ECHR)¹²⁴ and the EU's GDPR.¹²⁵ The analysis of these instruments have been dealt with in literature,¹²⁶ however, as in the OECD and the UN Model, the rights provided in these instruments are not specifically related to taxpayer's rights and AI. To illustrate this, the right to appeal automated (algorithm) decision making has not been mentioned in the OECD, the UN, the DAC, the ECHR, nor the GDPR. The first reference that can be found to this right is in the revised Council of Europe Convention 108+ that has been mentioned in this article's introduction.

In addition, another relevant instrument that can also be useful for addressing taxpayers' rights and AI is the recently finalized Council of Europe's Framework Convention on AI, Human Rights, Democracy and the Rule of Law developed by the Committee on AI.¹²⁷ The purpose of the convention is the establishment of 'certain fundamental principles, rules and rights aimed at ensuring that design, development and application of AI systems is fully consistent with respect for human rights, the functioning of democracy and the observance of rule of law'.¹²⁸

Beyond the scope of taxation, countries have also relied upon international instruments such as the International Covenant on Civil and Political Rights (binding) and the 1948 United Nations Declaration of Human Rights (non-binding). Also worth mentioning are the protections

accorded under the Inter-American Convention on Human Rights and the African Charter on Human and Peoples' Rights. Further regarding the latter, the African Commission on Human and Peoples' Rights adopted a resolution on the need to undertake a study on human and peoples' rights and AI, robotics, and other new and emerging technologies.¹²⁹ In the United States, the Executive Order on the Safe, Secure, and Trustworthy Development and Use of AI with a framework on AI outlines the principles for the responsible use and development of AI.¹³⁰

A multilateral instrument for protecting taxpayers' rights particularly in the era of AI does not presently exist, although this is becoming an urgent policy issue given AI's evolving nature, the continued integration of AI systems within tax administrations, and the need to preserve the delicate balance between AI-powered tax administrations and the taxpayers' rights. In the absence of a multilateral instrument, protection of taxpayers' rights is usually based on that afforded to human rights under the domestic laws of countries, bilateral agreements, and the international conventions that provide for the protection of human rights. Essentially, 'taxpayers rights are a subset of human rights'.¹³¹ In the longer term, policymakers may consider the proposal of an international or regional multilateral instrument for the protection of taxpayers' rights in the digital age. Cockfield proposes developing a multilateral taxpayer bill of rights to ensure a minimum level of legal protection and to cover the 'gaps' created by pre-existing unilateral measures or bilateral tax treaties in the context of tax information exchange between revenue authorities.¹³² Currently, protecting taxpayers' rights in the era of AI is based on a disjointed and somewhat scattered body of principles as issued by different organizations.¹³³ To remedy this would

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¹²³ European Union, 2011 *Directive on Administrative Co-operation (DAC1)*, Art. 16 (1).

¹²⁴ Provisions of the ECHR specifically relevant to taxpayers and automated tax administration include Art. 6 on the right to a fair trial, Art. 8 on the right to respect for private and family life, Art. 13 on the right to an effective remedy, and Art. 14 on the prohibition of discrimination. See M. Richardson, *Taxpayers' Right to Defence in the EU Law and European Convention on Human Rights Regimes* (vol. 71) IBFD (2024).

¹²⁵ Xiaoqing Huang, *Ensuring Taxpayer Rights in the Era of Automatic Exchange of Information: EU Data Protection Rules and Cases*, 46(3) Intertax 225–239 (2018), doi: 10.54648/TAXI2018024, <https://kluwerlawonline.com/JournalArticle/Intertax/46.3/TAXI2018024> (accessed 1 Apr. 2025).

¹²⁶ Belisa Ferreira Liotti, *Taxpayers' Data Protection: Do International, Regional, and Domestic Instruments Guarantee Adequate Rights in Tax (A)Eol?*, 50(2) Intertax 138–158 (2022), doi: 10.54648/TAXI2022014, <https://kluwerlawonline.com/JournalArticle/Intertax/50.2/TAXI2022014> (accessed 1 Apr. 2025). See also on AI and enforcement Tina Ehrke-Rabel & Barbara Gunacker-Slawitsch, *Tax Administration AI: The Holy Grail to Overcome Information Asymmetry in Tax Enforcement?*, 53(2) Intertax 128–140 (2025), doi: 10.54648/TAXI2025019, <https://kluwerlawonline.com/JournalArticle/Intertax/53.2/TAXI2025019> (accessed 1 Apr. 2025); and Peeters, *supra* n. 2.

¹²⁷ Available at <https://www.coe.int/en/web/artificial-intelligence/-/artificial-intelligence-human-rights-democracy-and-the-rule-of-law-framework-convention> (accessed 1 Apr. 2025).

¹²⁸ Committee on Artificial Intelligence, Revised Zero Draft [Framework] Convention On Artificial Intelligence, Human Rights, Democracy And The Rule Of Law, Art. 1(1).

¹²⁹ Resolution on the need to undertake a study on human and peoples' rights and artificial intelligence (AI), robotics, and other new and emerging technologies in Africa – ACHPR/Res. 473 (EXT.OS/ XXXI) 2021. Available at <https://achpr.au.int/en/adopted-resolutions/473-resolution-need-undertake-study-human-and-peoples-rights-and-art-1> (accessed 1 Apr. 2025).

¹³⁰ Available at Federal Register: Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence accessed on 1 Apr. 2025.

¹³¹ Bentley, *supra* n. 65, at 253.

¹³² Cockfield, *supra* n. 119, at 463.

¹³³ See e.g., the OECD AI Principles, <https://oecd.ai/en/ai-principles> (accessed 1 Apr. 2025); the UN AI Advisory Body, Interim Report: Governing AI for Humanity, Dec. 2023, https://www.un.org/sites/un2.un.org/files/ai_advisory_body_interim_report.pdf (accessed 1 Apr. 2025). and UNESCO, Recommendations on the Ethics of Artificial Intelligence, adopted on 23 Nov. 2021, <https://unesdoc.unesco.org/ark:/48223/pf0000381137> (accessed 1 Apr. 2025).

require the contribution to international law making by countries that seek to be bound by the multilateral instrument either on their own merit or through their representation by international organizations of which they are members. By allowing all countries to participate in the process of creating such a framework would guarantee the legitimacy of the resultant multilateral instrument on the protection of taxpayers' rights in a digital age¹³⁴; the development of this multilateral instrument exceeds the scope of this article. This could be a topic to be further developed in forthcoming articles and also to be taken upon by the UN and/or regional member associations such as the Council of Europe, the OECD, West African Tax Administration Forum (WATAF), Inter-American Center of Tax Administrations (CIAT), and Intra-European Organization of Tax Administrations (IOTA).

Further research is required to assess the appropriate form and content of a multilateral standard for protecting taxpayers' rights in a digital context. For that purpose, the article underscores the need for an inclusive horizontal dialogue between the different stakeholders subject to the digital transformation of the administration from legislators, tax administrations, and businesses to individual taxpayers subject to AI. Absent such inclusive dialogue, standards on protecting taxpayers' rights are best dealt with through a soft law instrument such as a voluntary code of conduct.¹³⁵ In the authors' view, this is a more politically feasible alternative for developing a binding multilateral instrument that may require profound amendments of tax procedural codes.¹³⁶

3.8 Policy Making Considerations

3.8.1 Regulatory Coverage of AI Risks in Taxation: Assessment and Gaps

The EU's recent adoption of the AI Act marks a significant step in establishing regulations specifically focusing on AI.¹³⁷ Additionally, mentions of 'automated decision-making' primarily arise in the context of processing vast amounts of personal data such as those in Article 11 of the Council of Europe Convention No. 108¹³⁸ and Article 22 of the GDPR.¹³⁹ These articles outline rights related to algorithmic decision making with an emphasis on

transparency and human oversight. However, taxation involves complex legal and financial considerations that are not addressed by these general provisions. Tax decisions often significantly impact individuals' financial obligations and rights thereby necessitating tailored regulations to ensure fairness and accuracy. While Article 22 mentions the right not to be subjected to decisions made solely by automated processes, the concept of 'solely' automated is an exceptionally high standard for taxpayers as tax administrations remain very large scale organizations where any decision will be stamped by several departments. In turn, questions arise regarding the criteria for determining that a decision was made algorithmically and whether tax officials exercised sufficient discretion for each of them. These aspects appear to lack specific regulations under both the Convention No. 108 and the GDPR. Even within the provisions of Article 52 of the AI Act which dictates that AI systems engaging with natural persons must disclose their AI nature, the fundamental issue of individuals being subject to automated decisions remains unaddressed. Notably, the legislation predominantly concentrates on regulating interactions with AI thereby diminishing its utility for taxpayers as the subject of an automated decision. Additionally, it includes exemptions for lawful uses of AI-assisted fraud detection and further limit its applicability in ensuring transparency and accountability in such contexts.¹⁴⁰

3.8.2 Enhancing Regulatory Frameworks for AI Governance in Taxation

The existing regulations can potentially be expanded to encompass AI by incorporating the principles (previously mentioned in the literature review) established by international organizations such as fairness, transparency, robustness, and accountability. However, this would require considering the challenges posed by AI in taxation, particularly regarding algorithmic decision making and protecting taxpayers' rights. Specific amendments to existing regulations could address deficiencies in coverage and ensure that AI-driven tax processes adhere to established principles and standards. In cases when expanding existing regulations is not feasible, new regulations

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¹³⁴ For detailed discussion on legitimacy in making international tax law, see Irma Mosquera Valderrama, *Legitimacy and the Making of International Tax Law: The Challenges of Multilateralism*, 7(3) World Tax J. (2015), doi: 10.59403/3mqgr50 (accessed 1 Apr. 2025)

¹³⁵ Cockfield, *supra* n. 119, at 463; see for instance, EU AI Act, Art. 95 and Preamble Recital 165.

¹³⁶ The 2025 annual Report of the IBFD-based Observatory on the Protection of Taxpayers' Rights has included a section on AI in its annual report and has suggested certain best practices and minimum standards. The report will be available at Observatory on the Protection of Taxpayers' Rights (OPTR) | IBFD.

¹³⁷ EU AI Intelligence Act, 2021/0106 (COD).

¹³⁸ Council of Europe. (1981). European Treaty Series No. 108: Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data. Strasbourg.

¹³⁹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 Apr. 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

¹⁴⁰ EU Artificial Intelligence Act, 2021/0106 (COD).

tailored to AI in taxation must be created. It is evident that specific provisions are needed, especially regarding determining what constitutes AI within tax, what an algorithmic end decision is, informing taxpayers that they are being subjected to an automated decision, the right to rely on information given out by an AI, how to divide the responsibility for using AI, determining the risk levels for AI within a tax process, and the appeals procedures regarding a (partially) automated decision. The present regulatory framework concerning AI appears inadequate for effectively overseeing the safe and practical implementation of AI within taxation. As highlighted earlier, it is not imperative to subject every facet of AI utilization in the tax process to regulatory oversight. Nevertheless, instances when it encompasses substantial risks do demand regulatory intervention.

3.9 Towards a New Framework for Taxpayers' Rights in the Digital Age

Do existing data protection norms and upcoming rules of the AI Act guarantee sufficient protection for taxpayers in this new environment?

3.9.1 An EU Perspective

In the absence of dedicated rules on AI, the integration and use of those systems by tax administrations of EU Member States has been primarily regulated through data protection (as prescribed by Convention 108, the GDPR, and the Law Enforcement Directive (LED)). It is apparent that existing EU data protection rules constitute a robust foundation for regulating AI, all fields considered. The data that is a critical factor for developing and using AI automatically generates a strong normative connection between, respectively, the regulation of data and of AI. A connection that is practically codified as several foundational principles of responsible algorithmic governance, e.g., transparency, accountability, accuracy, data security, and fairness, are directly derived from data protection rules.¹⁴¹ However, the current rules in the EU for this exhibit a number of shortcomings in the specific context of data processing for enforcing tax rules whether in

administrative or criminal matters. These strongly indicate that current data protection norms do not guarantee sufficient protection to taxpayers who are subject to fiscal algorithmic governance. Some of these drawbacks are likely to be reproduced in the EU AI Act in the context of tax administrations using AI systems. At least three major disadvantages can be identified when applying data protection norms on the use of AI systems by tax administrations: substantive limitations to data subjects rights, important normative gaps, and a shifting scope.

First, it is crucial to mention that data protection norms do not, in principle, protect data of legal persons and thus exclude a substantial part of the roster of taxpayers. In addition, current EU rules prescribe that data subject rights can be restricted by legislative measures when data processing occurs in pursuit of important economic interests, including taxation.¹⁴² These rights can and have been restricted whether the tax administration acts in administrative or in criminal matters. For instance, transparency requirements and data subject rights to access their data held by tax administrations prescribed in Articles 14 LED and 15 GDPR have been restricted by law as evidenced by the transposition of these norms in the domestic tax procedural rules of a number of Member States.¹⁴³ In effect, these restrictions limit any prospect to access details on the features used by tax administrations in their machine-learning systems as this may hinder detecting further crimes. In addition, the authors have pointed out that the principled prohibition on automated decision making and duty to provide an explanation as stipulated in Article 11 LED and Article 22 GDPR, two obligations that *prima facie* directly relate to AI are not adapted to tax enforcement processes.¹⁴⁴ The concept of 'solely' automated decision making excludes any setting from its scope for which a significant part of the decision was taken by a human agent rather than through algorithmic means. By virtue of their size and organizational hierarchy, tax enforcement processes under a CRM approach will often involve a chain of command where a decision is never the product of one unique input, whether from a human or an algorithm. In such a setting, the significance of each decision cannot be accurately determined nor precisely traced. Accordingly, though crucial in AI research and regulation, EU data protection principles of transparency and semblance of explainability

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¹⁴¹ See inter alia OECD, *supra* n. 20 (revised 8 Nov. 2023); US Executive Order on the Safe, Secure, and Trustworthy Development and Use of AI; California Legislature, Assembly Bill n°302, Department of Technology: high-risk automated decision systems: inventory (23 Mar. 2023); US Blueprint for an AI Bill of Rights, p. 6.

¹⁴² See GDPR, Art. 23(1)(e).

¹⁴³ David Hadwick, *Behind the One-Way Mirror: Reviewing the Legality of EU Tax Algorithmic Governance*, 31(4) EC Tax Rev. 200, doi: 10.54648/ecta2022019 (accessed 1 Apr. 2025); in Belgium, see Loi du 5 Septembre 2018 instituant le comité de sécurité de l'information et modifiant diverses lois concernant la mise en oeuvre du Règlement (UE) 2016/679 du Parlement européen et du Conseil du 27 avril 2016 relatif à la protection des personnes physiques à l'égard du traitement des données à caractère personnel et à la libre circulation de ces données, et abrogeant la directive 95/46/CE, Arts 89, 1° and 2°; in France: Arrêté du 21 Février 2014 portant création par la DGFIP d'un traitement automatisé de lutte contre la fraude dénommé « ciblage de la fraude et valorisation des requêtes » (as amended by Arrêté du 8 mars 2021), Art. 4(1). Germany: Abgabenordnung, ss 88(5), 4; Poland: STIR law, Art. 119.

¹⁴⁴ Maja Brkan, *Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond*, 27(02) Int'l J.L. & Info. Tech. 119–121 (11 Jan. 2019), doi: 10.1093/ijlit/ey017 (accessed 1 Apr. 2025); Maja Brkan & Grégory Bonnet, *Legal and Technical Feasibility of the GDPR's Quest for Explanation of Algorithmic Decisions: of Black Boxes, White Boxes and Fata Morganas*, 11(1) Eur. J. Risk Reg. 18–50 (2020), doi: 10.1017/err.2020.10 (accessed 1 Apr. 2025).

fail to suffice when applied to the use of AI by tax administrations.¹⁴⁵

Second, data protection rules exhibit substantial normative gaps as these leave undefined principles that should be a necessary fact when regulating AI systems. Particularly, the principles of data accuracy and fairness are ambiguous and do not correspond conceptually to state-of-the-art prescriptions of data accuracy or fairness in machine-learning scholarship.¹⁴⁶ The principles of data accuracy and fairness in data protection rules prescribe *in fine* very few obligations on data controllers: the prohibition of deceit for fairness and the obligation to process and maintain data up-to-date and free of errors for data accuracy. The obligations derived from these two principles exclusively relate to the data itself as an object of an individual right and not as aggregated input to a statistical model. This is perhaps testimony to the framing of data protection as an individual right without a collective component. Accordingly, data protection is entirely silent on the design choices in the algorithms or the quality of the inferences derived from processing that data unlike corresponding concepts in machine-learning literature where these aspects are regarded as crucial.¹⁴⁷ Recently, the CJEU clarified that the principle of data accuracy also obligates data controllers to process data 'that mirrors an objective reality'.¹⁴⁸ Yet, principles of data protection do not directly require them to operate design choices that are statistically sound or in accordance with standards of statistical science. In turn, current data protection rules do not address a range of risks to taxpayers' rights that could arise in the development of AI systems, most notably the risks of biases and discrimination, and are not concerned with outputs of the models. This is surprising as these risks have already been acknowledged in *eKasa* and

*SyRI*¹⁴⁹ and materialized in cases such as the *Toeslagenaffaire*¹⁵⁰ or *RoboDebt*.¹⁵¹

Third, as the tax administration oscillates between administrative and criminal enforcement, it is often unclear whether data processing activities are encompassed within the scope of the GDPR or the LED in a given situation. This confusion was the object of two CJEU cases, *Latvijas Republikas Saeima*¹⁵² and *SS SIA*¹⁵³ in which the court reiterated the distinction between purely administrative and criminal matters. In practice, since AI systems are predictive and are used prior to the qualification of an offense, that distinction is highly arbitrary and does not correspond to the empirical reality of tax enforcement. This confusion can also be observed in domestic laws for which norms purporting to implement the GDPR rules also transpose the more stringent limitations to the LED's data subject rights.¹⁵⁴ In effect, the confusion between administrative and criminal matters erodes taxpayers' rights by enabling cherry-picking rules within the two regimes. This distinction is of great importance to the EU AI Act, where the use of AI for law enforcement is recognized as a high risk in Annex II of the instrument. In effect, this distinction provides a substantial carve-out for AI systems used by tax administrations that will, similar to the GDPR and LED, enable authorities to shop for the most favourable regime and most lenient risk category.¹⁵⁵

3.9.2 Multi-stakeholder approach

A new framework for taxpayers' rights in the digital age also needs to consider the shift in actors involved in the taxation process and their role. As mentioned above, the digital models rely on data aggregated from many

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¹⁴⁵ David Hadwick, *Breaking the Fiscal Omerta: The Roadmap to Transparency in EU tax Algorithmic Governance*, in *Proceedings from the First Annual International FIRE Conference* 118–121 (Kristofferson ed., Örebro University, Istus Förlag 2023).

¹⁴⁶ Elisabetta Biasin, *Why Accuracy Needs Further Exploration in Data Protection*, in *Proceedings of the 1st International Conference on AI for People: Towards Sustainable AI* 96–99 (Wicke et al. eds, CAIP (EAI) 2021); Dara Hallinan & Frederik Borgesius, *Opinions Can Be Incorrect (in Our Opinion): On Data Protection Law's Accuracy Principle*, 10(1) *Int'l Data Privacy L.* 1–10 (2020), doi: 10.1093/idpl/ipz025 (accessed 1 Apr. 2025).

¹⁴⁷ Ninareh Mehrabi et al., *A Survey on Bias and Fairness in Machine Learning* 4 et seq. (2002), <https://arxiv.org/pdf/1908.09635.pdf>; Sam Corbett-Davies, Johann D. Gaebler, Hamed Nilforoshan, Ravi Shroff & Sharad Goel, *The measure and mismeasure of fairness*, 24(1), *J. Mach. Learn. Res. Art.* 312, at 18–2 (Jan. 2023); Wachter et al., *Why Fairness Cannot be Automated: Bridging the Gap Between EU Non-Discrimination Law and AI*, *Comp. L. & Sec. Rev.* 41, at 54–55, doi: 10.1016/j.clsr.2021.105567 (accessed 1 Apr. 2025); Sandra Wachter, *The Theory of Artificial Immutability: Protecting Algorithmic Groups under Anti-Discrimination Law*, *Tulane L. Rev.* 14–15 (2022) Available at SSRN, <https://ssrn.com/abstract=4099100> or, doi: 10.2139/ssrn.4099100 (accessed 1 Apr. 2025); Toon Calders & Indre Zliobaitė, *Why Unbiased Computational Procedures Can Lead to Discriminative Decision Procedures*, in *Discrimination and Privacy in the Information Society* 44–53 (Custers et al. eds Springer 2013). Giovanni Seni & John Elder, *Ensemble Methods in Data Mining: Improving Accuracy Through Combining Predictions* 25–30 (Springer 2022).

¹⁴⁸ Court of Justice of the European Union, Case C434/16 *Peter Nowak v. Data Protection Commissioner* [2017] ECLI:EU:C:2017:994, §§53 et seq.

¹⁴⁹ See aforementioned *SyRI* and *eKasa*.

¹⁵⁰ Tweede Kamer der Staten-Generaal, *Eindverslag Ongekend Omrecht* (2021); De Nationale Ombudsman, *'Geen powerplay maar fair play'*, Rapport no. 2017/095 (2017); Autoriteit Persoonsgegevens, *Belastingdienst/Toeslagen – De verwerking van de nationaliteit van aanvragers van kinderopvangtoeslag*, Rapport no. z2018-22445 (2020).

¹⁵¹ *Prygodicz v. Commonwealth*, Federal Court of Australia, Order N° VID1252/2019 (23 Dec. 2020).

¹⁵² CJEU Case C-439/19, *B v. Latvijas Republikas Saeima*, 22 Jun. 2021, ECLI:EU:C:2021:504.

¹⁵³ CJEU Case C-175/20, *SIA 'SS' v. Valsts iekārtumu dienests*, 24 Feb. 2022, ECLI:EU:C:2022:124.

¹⁵⁴ See for instance, in Belgium, Loi de 5 Septembre 2018 instituant le comité de sécurité de l'information et modifiant diverses lois concernant la mise en oeuvre du Règlement 2016/679 du Parlement européen et du Conseil du 27 avril 2016 relatif à la protection des personnes physiques à l'égard du traitement des données à caractère personnel et à la libre circulation de ces données, et abrogeant la directive 95/46/CE, Arts 66 and 67.

¹⁵⁵ See Recital 37 and 38, Proposal for a Regulation of the EP and Council laying down harmonized rules on artificial intelligence (AI Act), Final Draft, 21 Jan. 2024; D. Hadwick, *Error 404 – Match not Found: Tax Enforcement and Law Enforcement in the EU Artificial Intelligence Act*, 1 *eucriim* 55–60 (2023), doi: 10.30709/eucriim-2023-005 (accessed 1 Apr. 2025).

different sources and third parties (e.g., employer, real estate agent, hospital, etc.). In addition, in their digital transformation, tax administrations also rely on AI models that are developed by third parties (such as ICT companies) or operated through interfaces of third parties (such as tax advisors). This incites the question of how the legislative framework should provide a legal ground for the involvement of all of these actors and how the respective duties and responsibilities should be determined. While these questions and the powers of the tax administration are traditionally mainly governed by the principles of administrative law and good administration principles, the increased role of other actors entails issues at the intersection of tax law and civil law.¹⁵⁶ For example, two questions that should also be dealt with by policy makers and government officials are how the legal responsibility should be regulated for ICT companies that provide tax software (for instance, in a case of breach of confidentiality and privacy) and how taxpayers rights such as the right to appeal algorithm (automated) decision making should be protected in this multi-stakeholder context. CJEU cases *SCHUFA Holding* and *Dun & Bradstreet* emphasize the importance of these questions in the area of credit scoring which is an industry equally characterized by the use of risk management and predictive modelling.¹⁵⁷ Responsible use of AI by tax administrations entails the development of a normative framework creating an appropriate balance between the interests of all taxpayers from ICT companies that collaborate with the tax administrations to AI subjects of algorithmic decision making. In such a context, a lack of sufficiently transparent understanding of how algorithms work risks undermining judicial review and render certain taxpayers' rights, such as the right to appeal, entirely moot.

4 CALL FOR FUTURE ACTION

AI is complicated and dynamic; it adapts to designated processes, and new functionalities are constantly being developed. While its regulation, like with every technology, is certainly possible, it presents its own set of challenges particularly due to its continuously evolving characteristic. Initiating the regulation of this technology within the tax realm requires further concretizing and mapping its use within taxation and considering its meaning in tax. Various uses of the technology within tax have been observed, yet, not all of them require regulation. Therefore, each process must be assessed to create a risk profile and determine whether regulation development is necessary. When doing so, one goal is to ensure it is

flexible enough to anticipate future uses of AI, making it technologically neutral while also being specific enough to effectively establish clear compliance duties. The task of regulating AI specifically for tax is undoubtedly challenging, and policymakers are facing a critical dilemma. Overregulating may impede technological advancement, whereas underregulating exposes tax systems to various legal and ethical concern that consequently potentially erode public trust. The challenge therefore lies in crafting policies that encourage responsible AI use and development. Regardless, this decision is imperative: either define and regulate AI within tax or allow it to operate without oversight. It is in society's best interest to initiate regulation now to ensure that regulatory tax frameworks evolve alongside AI technology rather than endlessly attempting to sufficiently do so to maintain the same progress.

The deployment of AI tools in tax administration has introduced both opportunities and challenges for taxpayers' rights. As highlighted, it presents opportunities for more effective, accurate, and efficient tax administration through streamlining functions ranging from service provision to taxpayers to risk management, predictive analysis and tax compliance that benefit tax administrations and ultimately taxpayers. Regardless, this deployment of AI into the tax system has also been marred with concerns of transparency, explainability, accountability, and taxpayers' substantive (including right to privacy, right to confidentiality, and right to data protection) and procedural rights (such as the right to a fair trial and right to be informed). These risks require a review of taxpayers' rights in a digital age. In light of these developments, this article addresses some of the foundational concepts and the taxpayer's rights that should be considered by policy makers at international, regional, and national levels and tax administrations when using AI. These systems leveraged by tax administrations do not form a unitary ensemble that systematically entails the same risks of conflict with taxpayers' rights. Rather, the risks of AI systems depend on a number of conjectural factors ranging from the data processed by a system to the degree of human intervention of AI operators. The article suggests a set of rights that are likely to be directly impacted by the integration of core systems leveraged for tax compliance risk management to inform future policy formulation. Some examples are the right to appeal an automated (algorithm) decision making, the right to transparency and accountability when using AI tools for tax collection and tax enforcement; and the rights to protect taxpayer' privacy sensitive information, confidentiality, and against data leaks and excessive use of

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¹⁵⁶ William Brink & Lorraine Lee, *The Effect of Tax Preparation software on Tax Compliance. A Research Note*, 27(1) Behav. Res. Acc. 121–135 (2015), doi: 10.2308/bria-50977 (accessed 1 Apr. 2025); Morse, *supra* n. 2, at 278–305.

¹⁵⁷ CJEU Case C-634/21 *SCHUFA Holding (Scoring)*, 7 Dec. 2023, ECLI:EU:C:2023:957; CJEU Case C-203/22 *Dun & Bradstreet Austria*, 27 Feb. 2025 ECLI:EU:C:2025:117, §§54–63.

advanced technology due to tax administrations' discretionary power (e.g., utilizing risk models, real time surveillance, humanoids, and robots). Nonetheless, tax administrations' AI systems should systematically be subjected to a casuistic risk assessment framework composed of at least the aforementioned fundamental rights but sufficiently modulable to also include other provisions.

AI is already being extensively used by tax administrations and taxpayers globally either singularly or in conjunction with other technologies hence the urgency for reforms. Much remains to be done to address the prevalent legal issues. This article and recent discourse on the need for trustworthy AI in tax administration signals the urgency for legislative and regulatory reforms that specifically address the intersection of AI and taxpayers' rights to ensure that legal protections remain relevant and effective considering the dynamic nature of AI and the possibility of further technological advancements. There is

presently a lack of consensus on whether new rules for taxpayers' protection should be formulated or whether those already existing can be applied noting the dynamic nature of technologies. Ultimately, balancing between leveraging AI for efficient tax administration and safeguarding of taxpayers' rights necessitates collaborative efforts not only at domestic and regional levels but also at an international level involving different stakeholders. Additionally, an entire government approach is essential. Taxpayer protection requires collaboration across multiple government agencies beyond merely the tax authorities to effectively address the implications of AI-driven tax administration.

5 ANNEX TABLE: OVERVIEW OF AI GOVERNANCE AND REGULATION BY INTERNATIONAL ORGANIZATIONS

<i>Organization</i>	<i>Definition of AI</i>	<i>Principles for AI in Tax</i>	<i>Existing Regulations Related to AI</i>	<i>Existing Other Regulations Applicable to Tax</i>
OECD	An AI System is a machine-based system that can make predictions, recommendations, or decisions for a given set of human-defined objectives influencing real or virtual environments. AI has seven different use cases or patterns that can coexist in parallel within the same AI system.	Not found	N/A	N/A
EU	An AI system is machine based and designed to operate with varying levels of autonomy. It may exhibit adaptiveness after deployment and, for explicit or implicit objectives, infers from the input it receives how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.	Not found	The EU's AI Act provides some regulations specifically focusing on AI, but questions remain regarding algorithmic decision making in taxation.	EU GDPR includes provisions related to automated decision-making, but it may not fully address the complexities of tax-related decisions.
IMF	A field of computer science that focuses on building systems to imitate human behaviour and demonstrate machine intelligence. It distinguishes machine learning as a subset of AI.	Not found	N/A	N/A

<i>Organization</i>	<i>Definition of AI</i>	<i>Principles for AI in Tax</i>	<i>Existing Regulations Related to AI</i>	<i>Existing Other Regulations Applicable to Tax</i>
ADB	AI is the ability of machines and systems to acquire and apply knowledge including by performing a broad variety of cognitive tasks such as sensing, processing language, pattern recognition, learning, and making decisions and predictions. Machine learning is a subset of AI.	Not found	N/A	N/A
CIAT	CIAT has not defined AI itself.	Yes: Principle of Prudence, Principle of Non-Discrimination, Principle of Proportionality, Principle of Transparency, and Data Governance Principle	N/A	N/A
UN	The UN has not defined AI itself.	Not found	N/A	N/A
Council of Europe	CoE defines an AI system as 'any algorithmic system or a combination of such systems that, as defined herein and in the domestic law of each Party, uses computational methods derived from statistics or other mathematical techniques to carry out functions that are commonly associated with, or would otherwise require, human intelligence and that either assists or replaces the judgment of human decision-makers in carrying out those functions'.	Not found	Article 9 of Convention No. 108 addresses rights in algorithmic decision making important in the context of AI. It allows individuals to confirm processed personal data and prohibits decisions based solely on automated processing without considering their input.	

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