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The concept of sustainable taxation and its impact on tax policy

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Abstract

The concepts of sustainability and taxation are increasingly associated with each other, and the question of sustainable taxation has never been more urgent. Sustainable taxation, which is still largely vague, carries the risk of moral subjectivity and threatens to influence policy-makers and taxpayers. This article performs a concept analysis to clarify the concept of sustainable taxation and its fundamental characteristics. Furthermore, this article highlights the interaction between tax policy and the Sustainable Development Goals (SDGs), distinguishing between indirect and direct implications. Indirectly, tax policy serves as a supportive mechanism to achieve the SDGs by promoting domestic resource mobilisation and financing sustainable development through tax revenues. On the other hand, direct support requires the design of tax laws with regulatory objectives in mind that go beyond mere revenue generation. Both these interactions represent two of the main objectives of taxation, revenue generation and behavioural regulation.

Keywords: sustainable taxation, tax policy, sustainable development goals (SDGs)

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1. INTRODUCTION

The international tax architecture is undergoing significant transformation and increasingly focusing on sustainability-linked reforms. Among the two main objectives of taxation, revenue generation and behavioural regulation, both are utilised as crucial instruments to achieve broader sustainability objectives. Concurrently, sustainability-related initiatives are increasingly incorporating taxation as an essential supportive means to attain these objectives. There appears to be a relationship of interchangeability between the inclusion of tax policy into the sustainability agenda and vice versa, the integration of sustainability principles into tax reforms and initiatives. Regardless of how this interaction is viewed, understanding the nature of the relationship between taxation and sustainability is crucial.

The primary motivator for research in this discipline is the noticeable lack of a clear definition and concept of sustainable taxation.[1] Despite the increasing discourse on sustainable taxation, there remains ambiguity regarding what it implies and how it should be operationalised. To address this gap, this study raises two research questions: 1) what is sustainable taxation and what are the main characteristics of the sustainable taxation concept, and 2) how do tax policies and laws interact with sustainability?

To answer these research questions, the authors employ a concept analysis methodology. This approach enables a thorough examination of the existing literature and the application of sustainable taxation. Initially, it is crucial to understand the use of sustainability as a concept from a tax perspective, to narrow down the broad and rather unquantifiable concept of sustainability, and then to incorporate it into the tax landscape. This particular step considers the two-way relationship (tax in sustainability and sustainability in tax) as described above. As observed, the most feasible sustainability parameter from a tax perspective is the Sustainable Development Goals (SDGs)[2] and, consequently, the authors define sustainable taxation as 'the alignment of tax reforms with the SDGs'.[3] This definition emphasizes the role of tax policy in supporting sustainable development and provides a foundation for further exploration of its practical implications.

As a second step, this article aims to illustrate the practical use of the concept. In doing so, the authors highlight the complex interaction between the SDGs and tax policies, making a clear distinction between indirect and direct implications. The authors follow

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[1] Danuše Nerudová, David Hampel, Jitka Janová, Marian Dobranschi and Petr Rozmahel 'Tax System Sustainability Evaluation: A Model for EU Countries' (2019) 54(3) *Intereconomics* 138 ('Tax System Sustainability Evaluation'); Karie Davis-Nozemack and Kathryn Kisska-Schulze, 'Applying Sustainability to Tax' (2020) 23(2) *Florida Tax Review* 502.

[2] Numerous scholars rely on the SDGs as their preferred term for sustainability. See Cécile Brokelind and Servaas van Thiel (eds), *Tax Sustainability in an EU and International Context* (IBFD Publications, 2020); Leonie C Kopetzki, Christoph Spengel and Stefan Weck, 'Moving Forward with Tax Sustainability Reporting in the EU – A Quantitative Descriptive Analysis' (2023) 15(2) *World Tax Journal* 291; Annet Wanyana Oguttu, 'Tax Reforms for Africa to Achieve the UN Sustainable Development Goals in the Post-COVID-19 Economic Fallout' [2021] (3) *British Tax Review* 298.

[3] For all the 17 goals and their content, see Table 1 (Appendix). For more detailed information, refer to United Nations General Assembly, *Transforming Our World: The 2030 Agenda for Sustainable Development*, Resolution A/RES/70/1, 25 September 2015 ('*The 2030 Agenda*').

the already established approach by Pirlot in this regard.[4] Indirectly, tax policy serves as a supportive mechanism to achieve the SDGs by promoting domestic revenue mobilisation and financing sustainable development through tax revenues. This includes measures such as improving tax efforts and consequently tax potential, strengthening anti-tax avoidance and evasion measures, and enhancing international tax cooperation. On the other hand, direct interaction requires the design of tax laws, through the introduction of tax reforms, expenditures, and incentives, with specific behavioural regulatory objectives to achieve. This involves tax incentives for sustainable behaviour, an increased tax burden on harmful and unsustainable activities, and the utilisation of tax policy as a tool for social equity and economic redistribution.

In conclusion, this study seeks to deepen the understanding of sustainable taxation and its critical role in contemporary tax policy. By clarifying the concept and exploring its practical implications, the authors aim to contribute to the ongoing discourse on how taxation can support sustainable development. The findings of this study are expected to provide valuable insights for policy-makers, researchers, and practitioners interested in employing tax policy for sustainable outcomes.

This article is organised as follows. Section 2 lays out the scene by providing a background on the United Nation's Sustainability Agenda. Section 3 describes the performed methodology in this study. Section 4 elaborates on the description and defines the concept of sustainable taxation. Section 5 analyses the application of sustainability in a tax context and focuses on the interaction between the SDGs and tax policy. Section 6 presents the tax institutional role in supporting sustainability targets. Section 7 elaborates on challenges that the achievement of sustainable taxation may encounter, and section 8 concludes the article.

2. United Nations setting the sustainability scene

For decades, the United Nations (UN) has been responsible for leading the efforts to promote sustainability and the role of the UN has been a major breakthrough as its programs are the most comprehensive and inclusive.[5] These programs cover decades of efforts to understand sustainability, raise awareness, draft specific goals and targets to achieve sustainability, and more. Prior to setting the scene for a global consensus on the SDGs, the UN started a campaign as early as 1992 for a National Sustainable Development Strategy (NSDS) where jurisdictions were called upon to integrate economic, social and environmental objectives into a strategically focused plan of action at the national level.[6] During the 19th Special Session of the General Assembly in June 1997, member states acknowledged the importance of NSDS and set 2002 as a target year for the formulation and communication of their national strategies. An example of such a national strategy is the case of the Austrian Strategy for Sustainable Development[7] published in April 2002. Tax matters were included in certain policy areas, such as lowering the tax burden for individual taxpayers to create greater tax

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[4] Alice Pirlot, 'A Legal Analysis of the Mutual Interactions between the UN Sustainable Development Goals (SDGs) and Taxation' in Cécile Brokelind and Servaas van Thiel (eds), *Tax Sustainability in an EU and International Context* (IBFD Publications, 2020) 87.
[5] See *Charter of the United Nations* and *Statute of the International Court of Justice*.
[6] Elaborated in section 8.7 of United Nations, *United Nations Conference on Environment and Development: Agenda 21* (June 1992).
[7] Austrian Federal Government, *The Austrian Strategy for Sustainable Development: A Sustainable Future for Austria* (April 2002).

equity,[8] appropriate tax incentives to promote education and training programs, further development of the system of environmental taxes, energy taxes, taxes on labour and taxes on transport. During the next two decades, many more significant targets[9] were set by the UN regarding adjustments or additional recommendations to push further these national strategies.

The continuous work of the UN to solidify a globally accepted sustainable framework culminated in 2015 with the publication of the United Nations *2030 Agenda for Sustainable Development*[10] and its distinct 17 SDGs and 169 specific targets. This new sustainability framework carries a high importance for this article as it is elaborated further in section 4. With the publication of the SDGs, the focus of the NSDS shifted or, better said, aligned with reports on the achievement of each goal. So, these national reports were subsequently rephrased as Voluntary National Reviews (VNR), with the objective of 'encouraging Member States to conduct regular and inclusive reviews of progress [in achieving each goal] at the national and subnational levels'.[11] An example of such VNR is the latest (second) report of the Government of the Principality of Liechtenstein, communicated in June 2023.[12] This report includes certain tax measures as mechanisms used by the Liechtenstein government. Some examples are environment-related taxes referring to SDG 12, and international tax cooperation on SDG 16.

Aligning tax reforms (or tax policy) with the SDGs is a key part of the agenda of major international organisations, particularly for the UN. In 2021, the UN launched its 'Tax for SDGs' initiative, aiming to help developing countries leverage tax policy towards achieving the goals set out by the *2030 Agenda for Sustainable Development*. Only in 2023, the Tax for SDGs initiative supported 25 countries (particularly least developed countries) to align their tax systems with SDG targets[13] and furthermore, launched a unique *SDG Taxation Framework Toolkit* designed for national governments to facilitate the alignment of their tax systems with the SDGs.[14] The UN is not alone in having recognised the interaction between taxation and the achievement of the SDGs. Other major international organisations such as the International Monetary Fund (IMF), the World Bank, and the Organisation for Economic Co-operation and Development (OECD) have also pointed out the role of taxes as an important source of domestic revenue mobilisation and have joined the UN in forming the Platform for Collaboration on Tax (PCT) to strengthen collaboration on domestic revenue mobilisation.[15]

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[8] Tax-to-GDP (gross domestic product) ratio of 45.9 per cent in 2001, above the EU average of about 41.7 per cent, and significantly higher the Organisation for Economic Co-operation and Development (OECD) average of 38.7 per cent: ibid 18.

[9] Examples include 'Integrating Climate Change into National Sustainable Development Strategies' (United Nations Expert Group Meeting, New York, 12-13 November 2007); 'The Future We Want' (United Nations Sustainable Development Conference, Rio de Janeiro, 20-22 June 2012).

[10] United Nations General Assembly, *The 2030 Agenda*, above n 3.

[11] Ibid para 79.

[12] Government of the Principality of Liechtenstein, *Sustainability in Liechtenstein: Second Report on the Implementation of the 2030 Agenda for Sustainable Development* (June 2023).

[13] United Nations Development Programme, *Tax for Sustainable Development Goals Initiative: Annual Report 2023* (2024) ('*Tax for Sustainable Development Goals Initiative*').

[14] United Nations Development Programme, *SDG Taxation Framework (STF): Toolkit* (2023).

[15] See, eg, 'First Global Conference of the Platform for Collaboration on Tax – Tax and the SDGs' (New York, 14-16 February 2018).

The PCT, and much of the literature on the interaction between taxation and the SDGs, focuses on Domestic Revenue Mobilisation (DRM)[16] as the connecting principle between tax policy and the SDGs.[17] Nonetheless, the UN's Tax for SDGs initiative sees tax policy not only as an instrument for mobilising revenue but also as a tool to directly influence behaviour towards desired outcomes related to the SDGs. This distinction is important since it hints at two different channels through which tax policy can help achieve the SDGs, the indirect and direct channels that are explained in detail in section 5. Hence, any analytical framework which aims to reflect on whether existing tax measures and initiatives for tax reforms support or undermine the achievement of the SDGs should look at both these channels.[18]

3. METHODOLOGY

To gain a deeper insight into the concept of sustainable taxation, this article employs a concept analysis methodology. Several other methodological approaches were considered, such as a scoping review or content analysis, but concept analysis is better suited to exploring a term or concept where the literature is rather vague and common features are not evident. In essence, concept analysis is the process of clarifying concepts, their characteristics, and their relationships to other concepts.[19] Following that definition, this method is applied for two main reasons: 1) the lack of a generally accepted definition/concept of sustainable taxation, and 2) the complex interaction between tax policy and sustainability dimensions.

Various models can be employed for concept analysis, depending on the specifics of the process, data sources, and disciplines. Researchers in different disciplines, such as philosophy, law, business, or medicine, may employ slightly different concept analysis models. This study uses elements from the models of Wilson, Nuopponen, and Walker and Avant.[20]

The authors follow a four-step approach to perform the concept analysis, as illustrated in Figure 1. Once this process is complete, the authors conduct an applicative analysis of the concept, examining how taxation contributes to and interacts with sustainability. As a first step, it is essential to justify the necessity for a conceptual analysis in the area of sustainable taxation. This section of the methodology addresses the rationale for conducting this analysis and examines the current state of the art of the concept's use, with the objectives of acknowledging and contributing to the existing sustainable taxation literature. As elaborated above, the concept of sustainable taxation is still largely vague and carries a high risk of moral subjectivity and, in this guise, also threatens to influence taxpayers and policy-makers. Another area of interest is the little-explored relationship between tax policy and sustainability. Therefore, the objectives of this research method are to elucidate the relationship between taxation and

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[16] Often DRM refers to both domestic 'revenue' and 'resource' mobilisation. From the tax viewpoint, the authors believe that 'revenue' might fit better to this article. Nevertheless, we acknowledge the fact that both these terms might be used as synonyms.

[17] Oguttu, above n 2.

[18] Pirlot, above n 4.

[19] Anita Nuopponen, 'Methods of Concept Analysis – A Comparative Study' (2010) 1(1) *Language for Special Purposes Journal* 4.

[20] John Wilson, *Thinking with Concepts* (Cambridge University Press, 1963) ('*Thinking with Concepts*'); Nuopponen, above n 19; Lorraine Olszewski Walker and Kay Coalson Avant, *Strategies for Theory Construction in Nursing* (Pearson, 6th ed, 2019).

sustainability, to define a concept for sustainable taxation, and to further clarify the interaction between taxation and sustainability.

The second step requires an analysis of the literature available on the topic. Sustainable taxation is a rather new concept and a literature review itself might not be a great fit to fully understand the characteristics and use of the concept, but nevertheless, it is an important aspect to recognise the use of the concept.[21] For this process, only literature in English is considered and the platforms utilised to search for academic publications were Google Scholar, Scopus, Web of Science Core Collection, and Swisscovery. Additionally, a comprehensive search for non-academic sources was performed. This involved identifying and examining various forms of grey literature, such as reports, policy papers, working documents and databases published by international organisations (EU, OECD, UN), non-governmental organisations and other non-academic sources on diverse online platforms. The aim was to ensure a thorough understanding of the topic by incorporating valuable insights and data from non-traditional and non-peer-reviewed sources. Once the available literature is collected, the process of screening for any sustainable taxation definition or concept is performed. Screening the available literature on sustainable taxation is crucial in three ways: 1) to identify all uses of the concept; 2) to apprehend some of the defining characteristics mentioned in the literature for sustainable taxation and, 3) to compare some of the distinguished views on sustainable taxation. Once this process is completed, an additional review process is performed to understand the use of the term 'sustainability' in other disciplines such as sustainable finance, sustainable economy, sustainable agriculture, sustainable construction, and so on. Careful consideration must be given to the fact that the meaning of a concept depends on the context of its use.[22] This raises the question whether 'sustainability' in 'sustainable finance' is identical, comparable, or very different to that term in 'sustainable agriculture', for example. This procedure helps to better understand the bigger picture of what characteristics sustainability is made of.

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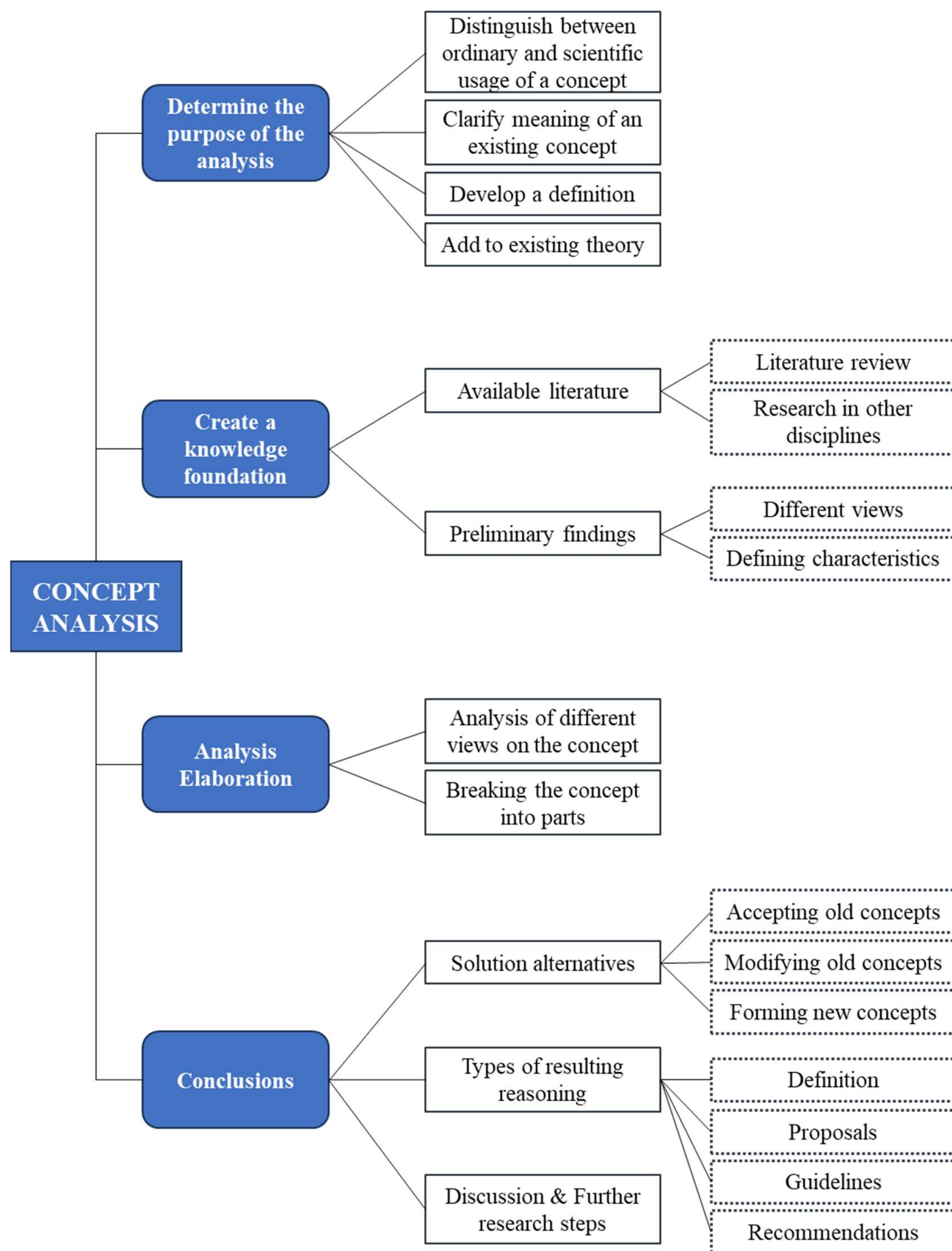
[21] A list of authors and publications related to the literature on defining sustainable taxation can be found in Table 2 (Appendix).
[22] Mark Risjord, 'Rethinking Concept Analysis' (2009) 65(3) *Journal of Advanced Nursing* 684.

Fig. 1: Concept Analysis



Source: authors' elaboration based on Wilson,[23] Nuopponen[24] and Walker and Avant.[25]

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[23] Wilson, above n 20.
[24] Nuopponen, above n 19.
[25] Walker and Avant, above n 20.

Thirdly, a concrete analysis is conducted on the concept of sustainable taxation based on the preliminary findings derived from the literature review. It is important to analyse the different views on the raised concept of sustainable taxation. Therefore, this article distinguishes and delimits sustainable taxation in relation to other related concepts and the more general field of taxation. An investigation on concepts such as 'Tax for SDG', 'sustainable tax system', 'tax sustainability', 'environmental taxes', and 'green taxes' is performed. Concepts are expressed by a word or phrase in a given language, and therefore an analysis of a concept must be an analysis of the descriptive word and its use. Wording and the assumption that 'SDG', 'sustainable', or 'green' are synonyms must be carefully addressed. This step supports the principle of breaking the concepts into parts and determining the main attributes or characteristics of the concept.

Fourthly, this analysis aims to observe and compare the collected alternatives and currently used concepts of sustainable taxation. This will help to either accept or reject the definitions and concepts of sustainable taxation already in use and possibly modify them or form a new concept as a result of the research carried out. Such results may vary depending on the preliminary findings, but in general an outcome could be a new definition, a proposal, a recommendation or a set of guidelines to be followed by policy-makers and researchers in the future.

Finally, the practical application of the concept is considered, following the suggestions of Risjord[26] and Walker and Avant.[27] All of these authors argue that the defining attributes of the concept should be brought together in the real world, so an explanation of the practical application is illustrated. To support this process, Berenskoetter[28] argues that the nature of the relationship between the defining attributes of the concept shapes the conflict between theory and practice. Considering the practical use of the defined concept, the present authors apply this new knowledge to further elaborate the relationship between tax policy and the SDGs. As a result, the direct and indirect interactions between taxation and the SDGs are analysed and described in detail in section 5.

4. CONCEPT OF SUSTAINABLE TAXATION

4.1 Description of the concept in policy-making

Categorised as one of the supportive mechanisms to attain sustainability, taxation stands out for its potential to contribute in two particular ways. First and foremost, taxes serve as a financial instrument to generate revenues for governments. These revenues are fundamental to the financing of sustainability-related projects. In the EU, tax revenue accounted for 40.6 per cent of GDP in 2021,[29] while in OECD countries it accounted for 34.1 per cent of GDP[30] with countries like Denmark having the highest tax-to-GDP ratio (46.9 per cent). Bearing in mind such data, it is a necessity to assess the ability of tax systems to generate tax revenues to support a more sustainable and fairer future.

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[26] Risjord, above n 22.
[27] Walker and Avant, above n 20.
[28] Felix Berenskoetter, 'Approaches to Concept Analysis' (2017) 45(2) *Millennium: Journal of International Studies* 151.
[29] European Commission, *Annual Report on Taxation 2023: Review of Taxation Policies in EU Member States* (June 2023).
[30] OECD, *Revenue Statistics 2022: The Impact of COVID-19 on OECD Tax Revenues* (OECD Publishing, 2022) ('*Revenue Statistics 2022*').

Nevertheless, the capacity to raise revenue through taxation alone is not sufficient. It is important that a portion of these revenues are allocated to projects that contribute to the achievement of sustainability, or at the very least, do not contradict them. Secondly, taxes could be directly used to address matters closely linked to sustainability and encourage behavioural change rather than elevate government tax revenue. Appropriately designed and balanced tax policy can play a key role in shifting unsustainable behaviours towards sustainable alternatives. A more detailed explanation of this matter is elaborated in section 5 of this article.

Reforms are being introduced to include taxation within the sustainability agenda at national, regional, and international levels. The aim is to observe the role of tax policy as a supportive instrument to achieve sustainability and to endorse the role of tax in the design and accomplishment of sustainable targets. At the national level, numerous jurisdictions have presented local sustainable strategies and measures, which are typically designed to improve the domestic economic, social, and environmental situation. To illustrate some national reforms, the present authors make reference to two national examples: the German Sustainable Development Strategy,[31] which is compiled by the German Federal Government, and the Swiss 2030 Sustainable Development Strategy,[32] compiled by the Swiss Federal Council. Both strategies were published in 2021. The aforementioned reports were established in response to the ongoing crisis related to the COVID-19 pandemic and in reaction to mounting pressure from the international community to implement reforms that prioritise sustainability. These exemplary sustainability strategies indicate the role of taxation as a policy mechanism that governments utilise to facilitate the achievement of various sustainability targets. The German Federal Government enacted the following tax measures: reduced sales tax rates during COVID times (July-December 2020), supporting companies through economic recovery investment incentives (tax loss carry-backs), supporting young individuals and families (tax relief doubled to EUR 4,008 for single parents), lower tax burden for drivers using vehicles with lower emissions (from 2021), and overall preferential tax treatment for purely electric vehicles. Similarly, the Swiss Confederation refers to the reduction or restructuring of subsidies and tax incentives for fossil fuels, negative employment incentives reduction (individual taxation plans dependent on different life trajectories and associated needs of women and men), prevention of illicit financial flows bound up with illegal activities such as money laundering or tax evasion and avoidance to promote sustainability in the financial market.

At the European Union level, the Europe 2020 Strategy[33] marks a clear proposal that addresses the need for sustainability reforms and illustrates a detailed guideline on the achievement of these sustainability targets. In addition, the European Green Deal[34] exhibits the European roadmap for the sustainable development of the EU's economy, health, quality of life and environment. It targets transformation of the current

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[31] German Federal Government, *Sustainable Development Strategy for Germany, Update 2021* (March 2021).
[32] Swiss Federal Council, *2030 Sustainable Development Strategy* (June 2021).
[33] For tax-related information, see sections 2, 3 and 4 of European Commission, *Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth*, COM(2010) 2020 final (3 March 2010).
[34] Ursula von der Leyen (President, European Commission), 'Press Remarks by President von der Leyen on the Occasion of the Adoption of the European Green Deal Communication' (Speech, 11 December 2019).

environmental, societal and economic challenges into opportunities across all policy areas. It is noteworthy that various matters under the European Green Deal are legislative Acts and proposals,[35] including the Emissions Trading System (ETS) Directive[36] and the Circular Economy Action Plan.[37] It is evident that these exemplary EU sustainability strategies refer to taxation as a mechanism at both national and European levels utilised to achieve sustainability.

4.2 Description of the concept in literature

One can argue that concepts of sustainability in taxation have been employed since the 18th century by the famous Scottish economist and philosopher, Adam Smith. Among various economic fundamentals elaborated in his volume *The Wealth of Nations*,[38] Smith argues that taxation should be imposed according to the canons of equality, certainty, convenience, and economy.[39] That definition provides certain links to sustainability but does not make up for a clear sustainable taxation settling. Despite the approach of Smith centuries ago, the concept of sustainable taxation seems to have gained significant attention only during the last few decades. The turning point towards sustainability and sustainable development particularly occurred in March 1987 with the famous Brundtland Report,[40] a report that shaped the concept of sustainable development as the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs'.[41] The report contributed to making sustainability a central topic in policy discussions. Applying the same notion and adding taxation to it, sustainable taxation may be interpreted as the requirement to draft tax laws to influence present developments that will not create a burden for future generations. Nevertheless, sustainability is not framed and sealed under the criterion of 'considering the needs of the future generations' when reforms account for the impact on the present generation(s) as well.

In the search for a sustainable taxation concept, Gunnarsson argues that tax policy must include the concept of social justice to ensure that sustainability is not conflated with the dominant notion of 'taxing for economic growth'.[42] Nerudová and co-authors define a sustainable tax system as 'a tax system that contributes to the sustainability of a country's economic, social, environmental and institutional pillars' and '[a]lternatively … a system of taxes, tax-related legislative measures and fiscal tools

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[35] European Commission, 'Commission Welcomes Completion of Key "Fit for 55" Legislation, Putting EU on Track to Exceed 2030 Targets' (News Article, 9 October 2023).
[36] For tax-related information, see articles 3 and 30 of European Parliament and European Council, Directive (EU) 2023/959 of 10 May 2023 Amending Directive 2003/87/EC Establishing a System for Greenhouse Gas Emission Allowance Trading Within the Union and Decision (EU) 2015/1814 Concerning the Establishment and Operation of a Market Stability Reserve for the Union Greenhouse Gas Emission Trading System [2023] OJ L 130/134.
[37] For tax-related information, see section 6.2 in European Commission, *Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 11 March 2020, A New Circular Economy Action Plan for a Cleaner and More Competitive Europe*, COM(2020) 98 final (11 March 2020).
[38] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (W Strahan and T Cadell, 1776).
[39] Ibid Bk V, Ch 2.
[40] United Nations, *Report of the World Commission on Environment and Development: Our Common Future* (1987) (Brundtland Report).
[41] Ibid 15.
[42] Åsa Gunnarsson, 'Fair and Sustainable Taxation – From a European Horizon' (2020) 23(2) *Florida Tax Review* 695.

that do not distort the sustainable behaviour of economic agents in the sense of Brundtland's definition'.[43] Similarly, Schratzenstaller indicates that a sustainable tax system should pursue economic, social and environmental sustainable objectives.[44] In that regard, to assess tax system sustainability, input indicators are needed to capture their design and potential impact. Outcomes are determined by applying quantitative methods to find relationships between sustainability-related tax features (eg, share of environmental taxes) and sustainability-related outcomes (eg, development of greenhouse gas emissions). Therefore, a sustainable tax system should identify output indicators that specify the pillars of sustainability.[45]

Analysing the impact of sustainability according to its three-pillar approach[46] has raised discussions among tax researchers whether one of the pillars is more important than the other two or they are all equally to be addressed through tax policy. Schratzenstaller argues that a tax system can only be sustainable if it addresses the three pillars of sustainability whereas Davis-Nozemack and Kisska-Schulze argue that sustainable taxation should come to the rescue of the society and the planet because of the effects of industrialisation during the past century.[47] In their views, the latter authors insist that sustainable taxation must be 'more than equitable, certain, convenient, and efficient to support the society that we want to sustain', urging tax scholars to consider how tax policy can support quality of life, social justice and cohesion, diversity and human rights.[48] As outlined, there is a lack of consensus among tax scholars regarding the extent to which tax policy should address sustainability concerns. Nerudová and co-authors propose a four-pillar approach, while Schratzenstaller asserts that the three-pillars of sustainability have equal importance in a tax context.[49] Moreover, Davis-Nozemack and Kisska-Schulze argue that tax policy should be exclusively concerned with addressing the adverse impacts of economic activities on the two other pillars of sustainability: environmental and societal.

As elaborated already in section 2, sustainability as a concept is reframed from the Brundtland definition to the one known as the emergence of the SDGs. This new approach is a more concrete and measurable definition, as it consists of quantifiable targets. From a very pragmatic standpoint, the definition of sustainability became the equivalent of the SDGs for a great number of researchers and policy-makers.[50] Moreover, the emergence of the SDGs has impacted the perspective of conceptualising

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[43] Nerudová et al, 'Tax System Sustainability Evaluation', above n 1, 139.
[44] Margit Schratzenstaller, 'Sustainable Tax Policy: Concepts and Indicators Beyond the Tax Ratio' (2015) 141(5) *Revue de l'OFCE* 57.
[45] Ibid 67-68.
[46] Ben Purvis, Yong Mao and Darren Robinson, 'Three Pillars of Sustainability: In Search of Conceptual Origins' (2019) 14(3) *Sustainability Science* 681.
[47] Schratzenstaller, above n 44; Davis-Nozemack and Kisska-Schulze, above n 1.
[48] Davis-Nozemack and Kisska-Schulze, above n 1, 520.
[49] Danuše Nerudová, Marian Dobranschi, Marek Litzman and Petr Rozmahel, 'Tax Policy Areas and Tools for Keeping Sustainable Economy and Society in the EU' in Cécile Brokelind and Servaas van Thiel (eds), *Tax Sustainability in an EU and International Context* (IBFD Publications, 2020) 71 ('Tax Policy Areas and Tools'); Schratzenstaller, above n 44.
[50] Eelco van der Enden and Bronetta Charlotte Klein, 'Good Tax Governance? …Govern Tax Good!' (1 May 2020) <https://ssrn.com/abstract=3610858>; Alfio Valsecchi, 'What Corporate Tax Policy Has to Do with Sustainability and How Companies Should Deal with It' (2022) 14(1) *World Tax Journal* 113; Oguttu, above n 2.

sustainable taxation.[51] A growing number of scholars have begun to examine sustainable taxation as a potential convergence point for tax policy that could facilitate the achievement of the SDGs. In this regard, Brokelind[52] addresses the need that policy-makers must consider the UN SDGs as tax policy tools. The SDGs can interact with tax systems, encouraging governments to reform their tax laws to achieve the goals (or at least not contradict them) and align their tax systems more closely with SDG targets.[53] In the context of sustainable development, taxation is not an end in itself, but a subordinate instrument for achieving the goals of sustainability. The ultimate goals of sustainability are not set by tax lawyers or tax economists, but they are the result of a political decision-making process. However, taxation as an instrument, among many objectives that it aims to attain, can be important in two specific ways: as a behavioural tool to encourage a change in taxpayers' appetite and as a revenue source to elevate the governmental budget.[54]

4.3 Development of the sustainable taxation concept

Defining the concept of sustainable taxation presents considerable challenges. These challenges appear to arise from the focus on tax initiatives that promote sustainability, such as transparency, fairness, and equality, rather than considering the full scope of sustainability in the tax context. As a result, there is a tendency to overlook the possible conceptualisation of the term itself. Notably, there is no universally accepted definition of sustainable taxation, nor a specific way to measure or evaluate it.[55] Scholars appear to agree on the individual terms, but the narrative becomes muddled when both terms are employed in conjunction. The existing tax literature addresses terms such as 'fair taxation'[56] or 'equality in taxation',[57] yet it fails to adequately address all the sustainability dimensions holistically.

To comprehend and potentially measure the impact of sustainability, it is essential to divide it into at least three principal pillars, Economic (ECO), Social (SOC), and Environmental (ENV). As described in section 4.2, tax researchers and also researchers

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[51] Despite the use of sustainability as a synonym of Sustainable Development Goals, sustainability is often referred to in terms of the long-term goals and sustainable development in terms of the processes to achieve them. See UNESCO, *Education for Sustainable Development: Sourcebook* (2012).
[52] Cécile Brokelind, 'Introduction' in Cécile Brokelind and Servaas van Thiel (eds), *Tax Sustainability in an EU and International Context* (IBFD Publications, 2020) 1, 6.
[53] United Nations Development Programme, *Tax for Sustainable Development Goals Initiative: Annual Report 2022* (2023).
[54] N Kaldor, 'The Role of Taxation in Economic Development' in E A G Robinson (ed), *Problems in Economic Development* (International Economic Association, 1965) 170; Robin Burgess and Nicholas Stern, 'Taxation and Development' (1993) 31(2) *Journal of Economic Literature* 762.
[55] Nerudová et al, 'Tax System Sustainability Evaluation', above n 1.
[56] Attila Bánfi, 'A Few Thoughts on Fair Taxation' (2011) 19(2) *Periodica Polytechnica Social and Management Sciences* 67; Åsa Gunnarsson, 'Fair Taxes to End Poverty' in Martha F Davis, Morten Kjaerum and Amanda Lyons (eds), *Research Handbook on Human Rights and Poverty* (Edward Elgar, 2021) 474.
[57] William B Barker, 'The Three Faces of Equality: Constitutional Requirements in Taxation' (2006) 57(1) *Case Western Reserve Law Review* 1; Dietmar von der Pfordten, 'Justice, Equality and Taxation' in Helmut P Gaisbauer, Gottfried Schweiger and Clemens Sedmak (eds), *Philosophical Explorations of Justice and Taxation: National and Global Issues* (Springer, 2015) 47; Dennis M Davis, 'Taxation and Equality: The Implications for Redressing Inequality and the Promotion of Human Rights' (2019) 10(3) *Humanity: An International Journal of Human Rights, Humanitarianism, and Development* 465.

from different disciplines have widely referred to these three sustainability pillars.[58] However, in the same way as the research of Nerudová and co-authors,[59] this article includes the institutional (INST) pillar as a fourth dimension of analysing sustainability, at least in the context of taxation. This is essential for this study as the present authors rely significantly on the role of institutions to analyse the application of sustainability in a tax context. The assumption to assess sustainability in a scope of more than three dimensions is supported by the UN itself through the five principles (P) of the SDGs.[60] These five principles, namely, People, Planet, Prosperity, Peace, and Partnerships represent a grouping scheme for all the 17 goals.[61] Following other researchers' logic on grouping the SDGs on their desired outcome and principles,[62] the authors identify a link between the five Ps of the SDGs and the four sustainability pillars of Nerudová and co-authors.[63] The relationship seems rather straightforward regarding SOC, ECO, and ENV pillars being the equivalent of People, Prosperity and Planet. That is justified under the similarity of grouping between goals 1 to 15, under the three mentioned principles/pillars. However, it is unclear if Peace and Partnerships (both representing SDG 16 on 'Peace, Justice and Strong Institutions' and SDG 17 on 'Partnership for the Goals') could be comparable to the INST pillar. Investigating that potential relationship, some researchers support the idea that Peace and Partnerships are closely related to each other as they both represent matters linked to building effective, accountable, and inclusive institutions and encourage collaboration among governments to share knowledge and implement effective strategies nationally and internationally.[64] Following that, this article draws a link between the four-pillar approach of sustainability and the principles of the SDGs. Table 3 (Appendix) illustrates this relationship in more detail.

This relationship helps to clarify the potential impact of tax policies and legislative measures on the four pillars of sustainability and the broader SDG principles. To gain a

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[58] Mohan Munasinghe, *Environmental Economics and Sustainable Development* (World Bank Environment Paper 3, 1993); Purvis, Mao and Robinson, above n 46; Ralph Hansmann, Harald A Mieg and Peter Frischknecht, 'Principal Sustainability Components: Empirical Analysis of Synergies Between the Three Pillars of Sustainability' (2012) 19(5) *International Journal of Sustainable Development and World Ecology* 451; Becky J Brown, Mark E Hanson, Diana M Liverman and Robert W Merideth, Jr, 'Global Sustainability: Toward Definition' (1987) 11(6) *Environmental Management* 713.

[59] Nerudová et al, 'Tax Policy Areas and Tools', above n 49.

[60] United Nations Economic and Social Commission for Western Asia, 'The 5Ps of the Sustainable Development Goals' <https://www.unescwa.org/sites/default/files/inline-files/the_5ps_of_the_sustainable_development_goals.pdf>.

[61] SDG Services, 'What Are the Sustainability Principles?' and 'The Pillars and Frameworks of the SDGs' in 'The Main Principle of Sustainability Is the Common Good' (Web Page) <https://www.sdg.services/principles.html>.

[62] Shujiro Urata, Kazuo Kuroda and Yoshiko Tonegawa, *Sustainable Development Disciplines for Humanity: Breaking Down the 5Ps—People, Planet, Prosperity, Peace, and Partnerships* (Springer, 2023); Marina Mattera and Carmen Alba Ruiz-Morales, 'UNGC Principles and SDGs: Perception and Business Implementation' (2021) 39(2) *Marketing Intelligence and Planning* 249; Sherif Goubran, 'On the Role of Construction in Achieving the SDGs' (2019) 1(2) *Journal of Sustainability Research* e190020.

[63] Nerudová et al, 'Tax Policy Areas and Tools', above n 49.

[64] Stephen Morton, David Pencheon and Neil Squires, 'Sustainable Development Goals (SDGs), and Their Implementation: A National Global Framework for Health, Development and Equity Needs a Systems Approach at Every Level' (2017) 124(1) *British Medical Bulletin* 81; Angkana Lekagul, Anamika Chattong, Putthipanya Rueangsom, Orratai Waleewong and Viroj Tangcharoensathien, 'Multi-Dimensional Impacts of Coronavirus Disease 2019 Pandemic on Sustainable Development Goal Achievement' (2022) 18(1) *Globalization and Health* 65.

deeper understanding of these interactions, it is important to link specific tax measures with legislative interventions, as described below.[65]

- *Economic Pillar (Prosperity)*: increasing debt levels to a point where it becomes a burden for future generations contradicts the sustainability principles. The concept of debt and its ratio to GDP has been gaining renewed attention in recent years, mostly because debt levels in some countries such as the US have reached previously unseen levels.[66] The projected path of national debt poses significant economic risks, as illustrated by the US example, where, without changes in tax and spending policies, the debt could rise from 62 per cent of GDP to over 100 per cent by the decade's end and nearly double within 25 years.[67]

- *Social Pillar (People)*: regarding the social pillar, social cohesion and specifically reducing poverty levels and the gap between the wealthier and the poorer citizens is an important target. Wealth and income inequality have increased in most OECD countries over the past three decades,[68] expanding even further the gap between different social classes in society. From a tax system perspective, the introduction of a wealth tax makes a strong case to address wealth inequality and redistribution, and additionally raise more tax revenues.[69]

- *Environmental Pillar (Planet)*: aspects of environment protection, carbon emission, and climate change have been addressed as policy areas of high importance, where immediate action is required.[70] Organisations like the OECD and the EU have acknowledged the importance of tax reforms on climate matters. One example is the ETS Directive enforced by the EU[71] that aims to financially incentivise the reduction of overall carbon emissions and carbon pricing mechanisms[72] through tax levied on the carbon content of fossil fuels.

- *Institutional Pillar (Peace and Partnerships)*: the objective is to provide policy-makers with the necessary mechanisms and capacities to effectively collect taxes and fight or put an end to tax avoidance and evasion. Legislative frameworks are already in place to address aggressive tax avoidance behaviours

[65] Nerudová et al, 'Tax Policy Areas and Tools', above n 49.
[66] Melissa S Kearney, Justin Schardin and Luke Pardue (eds), *Building a More Resilient US Economy* (The Aspen Institute, 2023).
[67] Martin Feldstein, 'Preventing a National Debt Explosion' (2011) 25(1) *Tax Policy and the Economy* 109.
[68] OECD, *The Role and Design of Net Wealth Taxes in the OECD*, OECD Tax Policy Studies 26 (OECD Publishing, 2018) 28.
[69] Ibid 98.
[70] Simon Bushell, Géraldine Satre Buisson, Mark Workman and Thomas Colley, 'Strategic Narratives in Climate Change: Towards a Unifying Narrative to Address the Action Gap on Climate Change' (2017) 28 *Energy Research and Social Science* 39.
[71] European Parliament and European Council, *Directive (EU) 2023/959 of 10 May 2023 Amending Directive 2003/87/EC Establishing a System for Greenhouse Gas Emission Allowance Trading Within the Union and Decision (EU) 2015/1814 Concerning the Establishment and Operation of a Market Stability Reserve for the Union Greenhouse Gas Emission Trading System* [2023] OJ L 130/134.
[72] OECD, *Effective Carbon Rates 2021: Pricing Cabon Emissions Through Taxes and Emissions Trading* (OECD Publishing, May 2021).

such as the Anti-Tax-Avoidance Directive (ATAD)[73] at the EU level or the action plan developed by the Inclusive Framework (OECD/G20) on anti-Base Erosion and Profit Shifting (BEPS).[74] It is important that BEPS practices and ATAD measures create a level of protection against tax avoidance and at the same time ensure a more transparent tax environment. Additionally, to strengthen collaboration on domestic resource mobilisation and share expertise, the Platform for Collaboration on Tax (PCT)[75] emerged as a supportive initiative in developing guidance and tools to assist countries achieve sustainable tax system reforms and improve tax collection capacities.

To gain a deeper insight into the characteristics of sustainable taxation, the authors draw upon the literature elaborated in section 4.2, as well as the integration of taxation into the four pillars of sustainability. It is of significant importance to recognise that a combination of policy objectives designed to: 1) finance the achievement of the Sustainable Development Goals (SDGs), and 2) motivate taxpayers to orient their behaviours towards more sustainable actions, is fundamental to understand the interaction between taxation and sustainability. To conclude, considering the interplay between the SDG principles and the four-pillar sustainability approach and the role of taxation in addressing sustainable development, the authors assert that 'the alignment of tax reforms with the SDGs' represents the most accurate definition of sustainable taxation.

5. Application of sustainability in a tax context – direct and indirect interaction between the SDGs and tax policy

5.1 Indirect interaction

Government revenue, more broadly, and tax revenue, specifically, is seen as a key funding source to support the implementation of the SDGs.[76] It is important to note that tax revenue represents the most significant source of revenue for most governments.[77] Furthermore, assuming that the collected taxes will be allocated to pursue policy objectives that are in line with the SDGs, domestic revenue mobilisation plays a pivotal role in the achievement of the SDGs. Countries that can raise more revenue are, in principle, also able to spend more towards the achievement of the SDGs. This correlation between taxes raised and SDG performance is very high (correlation 0.78) and is also evident in the data (Figure 2). Countries such as Austria, Denmark, Finland, Sweden, Germany, and France with a relatively high tax-to-GDP ratio also score highest in the SDG performance score. Meanwhile, countries such as Afghanistan, Chad, Democratic Republic of the Congo, Madagascar, Niger, and Somalia with very low tax-to-GDP ratios also have very low scores of SDG performance.

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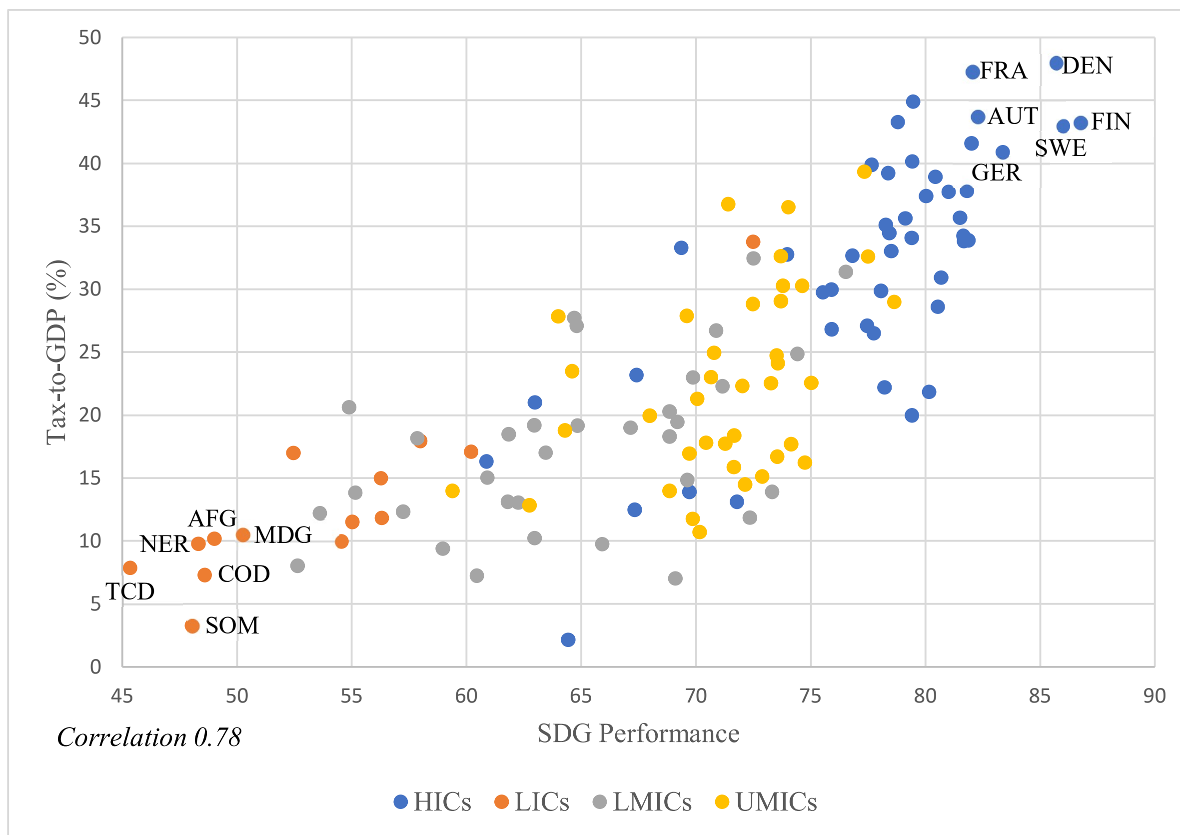
[73] European Council, *Directive (EU) 2016/1164 of 12 July 2016 Laying Down Rules Against Tax Avoidance Practices that Directly Affect the Functioning of the Internal Market* [2016] OJ L 193/1.
[74] OECD, *Addressing Base Erosion and Profit Shifting* (OECD Publishing, 2013) ('*Addressing Base Erosion and Profit Shifting*').
[75] Platform for Collaboration on Tax, 'Who We Are' (Web Page) <https://www.tax-platform.org/who-we-are>.
[76] 'First Global Conference of the Platform for Collaboration on Tax – Tax and the SDGs', above n 15; United Nations General Assembly, *The 2030 Agenda*, above n 3.
[77] United Nations Development Programme, *Tax for Sustainable Development Goals Initiative*, above n 13.

Fig. 2: Correlation Between Tax-to-GDP and SDG Performance



Source: SDG Index[78] and UNU-WIDER Government Revenue Dataset.[79]

Note: Tax-to-GDP ratio data is collected from the UNU-Wider Government Revenue Dataset. It uses General Government Tax Revenue and is for the most recent available year (typically 2021). SDG Performance data is collected from the SDG Index and measures total progress towards achieving all 17 SDGs. The highest score is 100, and it indicates that all SDGs have been achieved or are on track to be achieved by 2030. Countries are grouped into low-income (LIC), lower middle-income (LMIC), upper middle-income (UMIC), and high-income (HIC) according to the World Bank classification.

However, correlation does not mean causation and the assumption that higher DRM would necessarily translate to better SDG performance may not always hold true.

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[78] Jeffrey D Sachs, Guillaume Lafortune, Grayson Fuller and Eamon Drumm, *Sustainable Development Report 2023: Implementing the SDG Stimulus* (Dublin University Press, 2023).
[79] UNU-WIDER, *Government Revenue Dataset* (2023) <https://www.wider.unu.edu/project/grd-government-revenue-dataset>.

Converting higher DRM into better SDG performance requires the alignment of fiscal policy as a whole, including the expenditure side, with the SDG agenda. Otherwise, the extra revenue could be spent on projects that are not well aligned with the SDGs or are actively contributing to the detriment of certain SDGs (eg, subsidies for environmentally harmful industries). On the other hand, a lower tax-to-GDP ratio may be indicative of a general approach to taxation at the national level. Some countries may exhibit a low tax-to-GDP ratio due to a lack of government capacity to collect taxes[80] (eg, tax effort, as described below) or as a policy objective to attract investment and offer lower tax rates and potentially more generous deductions.[81]

While empirical literature on the effect of increased tax revenues on SDG performance is scarce, some scholars have studied the link between the SDGs and gross domestic product (GDP), the latter of which is highly correlated with DRM. Hence, to achieve the goals, GDP growth is seen as a key indicator. However, there is no consensus among scholars that higher GDP will lead to the achievement of the SDGs.[82] In addition, Costanza and co-authors point out that higher GDP growth has a negative impact on goals linked to protecting the environment and climate change.[83]

Additionally, other scholars and policy-makers have shown a growing interest in other factors that might influence governments' ability to raise tax revenue, such as tax capacity and tax efforts. In simple terms, tax effort defines the ratio of actual tax collection to the full tax potential.[84] Empirical studies estimate through numerous variables tax effort scores for countries around the world as a high-level benchmark for the level of tax that a country might be able to collect. Among the most common variables used to estimate and score tax effort, researchers agree that certain *revenue variables* (total tax), *economic variables* (GDP/capita, openness to trade, grants), *demographic variables* (urbanisation, public goods), and *varieties of democracy* (accountability index, rule of law index, public sector corruption index) play an essential role in countries' tax effort and tax potential. Estimations based on some of the most common variables mentioned above, covering a specific time frame and number of countries, are described in Table 4. There are different approaches and variables used to derive these estimates, which is why it is necessary to be cautious about comparing and drawing any conclusions about these scores. Nevertheless, no matter the difference in estimations, some of the mentioned studies refer to the need that most countries have

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[80] Christine Fauvelle-Aymar, 'The Political and Tax Capacity of Government in Developing Countries' (1999) 52(3) *Kyklos* 391; Dina Pomeranz and José Vila-Belda, 'Taking State-Capacity Research to the Field: Insights from Collaborations with Tax Authorities' (2019) 11 *Annual Review of Economics* 755.
[81] Howell H Zee, Janet G Stotsky and Eduardo Ley, 'Tax Incentives for Business Investment: A Primer for Policy Makers in Developing Countries' (2002) 30(9) *World Development* 1497.
[82] Bahram Adrangi and Lauren Kerr, 'Sustainable Development Indicators and Their Relationship to GDP: Evidence from Emerging Economies' (2022) 14(2) *Sustainability* 658; Luca Coscieme, Lars F Mortensen, Sharolyn Anderson, James Ward, Ian Donohue and Paul C Sutton, 'Going Beyond Gross Domestic Product as an Indicator to Bring Coherence to the Sustainable Development Goals' (2020) 248 *Journal for Cleaner Production* 119232; Eyup Dogan, Sabina Hodžić and Tanja Fatur Šikić, 'Do Energy and Environmental Taxes Stimulate or Inhibit Renewable Energy Deployment in the European Union?' (2023) 202 *Renewable Energy* 1138.
[83] Robert Costanza, Lew Daly, Lorenzo Fioramonti, Enrico Giovannini, Ida Kubiszewski, Lars Fogh Mortensen, Kate E Pickett, Kristin Vala Ragnarsdottir, Roberto De Vogli and Richard Wilkinson, 'Modelling and Measuring Sustainable Wellbeing in Connection with the UN Sustainable Development Goals' (2016) 130 *Ecological Economics* 350.
[84] Mark Miller and Cathal Long, 'Taxation and the Sustainable Development Goals: Do Good Things Come to Those Who Tax More?' (Overseas Development Institute, April 2017) 8.

to improve their effort to mobilise revenue to finance the SDGs.[85] Unsurprisingly, following the estimations of Fenochietto and Pessino,[86] Miller and Long[87] indicate a strong connection between tax-to-GDP and tax effort (correlation 0.718).

Table 4: Comparison of Tax Effort Estimates

Authors	Latest Available Year	Number of Countries	Tax Effort, % (Sample Average)
Fenochietto & Pessino	2012	113	0.68
Langford & Ohlenburg	2010	85	0.63
Mawejje & Sebudde	2015	150	0.47
McNabb, Danquah & Tagem	2019	161	0.84

Source: the authors' elaboration is based on the calculations of Fenochietto and Pessino,[88] Langford and Ohlenburg,[89] Mawejje and Sebudde,[90] and McNabb, Danquah and Tagem.[91]

Furthermore, while DRM is the main (and most preferred) channel to fund the SDGs, it is not the only option. Countries that face greater financing needs, mainly developing countries, receive support from the Development Assistance Committee (DAC) through Official Development Assistance (ODA). Foreign aid through DAC countries is roughly at 0.36 per cent of their gross national income (GNI) (UN set a target of 0.7 per cent).[92] Hence, aligning ODA funds with the SDGs is another way to help those countries most in need fund the achievement of the SDGs. Removing the requirement of many DAC countries that their ODA remains untaxed in the recipient country would be an important step to contribute towards the SDGs also through the DRM channel.[93]

[85] Joseph Mawejje and Rachel K Sebudde, 'Tax Revenue Potential and Effort: Worldwide Estimates Using a New Dataset' (2019) 63 *Economic Analysis and Policy* 119, 124; Kyle McNabb, Michael Danquah and Abrams ME Tagem, 'Tax Effort Revisited: New Estimates from the Government Revenue Dataset' (UNU-WIDER Working Paper 2021/170, November 2021) 1.
[86] Ricardo Fenochietto and Carola Pessino, 'Understanding Countries' Tax Effort' (International Monetary Fund Working Paper WP/13/244, November 2013).
[87] Miller and Long, above n 84.
[88] Fenochietto and Pessino, above n 86.
[89] Ben Langford and Tim Ohlenburg, 'Tax Revenue Potential and Effort: An Empirical Investigation' (International Growth Centre Working Paper, January 2016).
[90] Mawejje and Sebudde, above n 85.
[91] McNabb, Danquah and Tagem, above n 85.
[92] OECD, *Official Development Assistance (ODA) in 2022, by Members of the Development Assistance Committee (Preliminary Data)* (2023).
[93] Iain Steel, Roel Dom, Cathal Long, Nara Monkam and Paddy Carter, 'The Taxation of Foreign Aid: Don't Ask, Don't Tell, Don't Know' (Overseas Development Institute and African Tax Administration Forum Briefing Note, May 2018).

Nonetheless, despite not being a perfect approach targeting the achievement of SDGs, increased DRM remains a valid path as shown above and discussed at the UN and OECD[94] often, albeit in an indirect way.

5.2 Direct interaction

In addition to focusing on the indirect approach, countries can also design tax policies that directly influence the achievement of various SDGs. These can take three primary forms: 1) revenue-positive policies, in the form of additional taxation for certain goods, services, or activities to disincentivise certain types of behaviour; 2) burden-shifting policies which redistribute tax responsibility among taxpayers to achieve regulatory objectives or correct market failures, and 3) revenue-negative policies, such as tax expenditures, which incentivise certain activities or behaviour by forgoing potential revenue.

Revenue-positive policies can often take the form of excise taxes on goods like alcohol and cigarettes. Such excise taxes not only generate revenue (that could in itself be spent towards the financing of the SDGs) but also discourage harmful behaviour and improve public health. For example, countries like Finland and Sweden have implemented high excise taxes on alcohol and tobacco products, contributing to lower levels of consumption and associated health problems, thereby supporting SDG 3 on 'Good Health and Well-Being'.[95] Revenue-positive policies can also take the form of wealth taxes which target the wealthiest individuals, helping to mitigate wealth concentration and promote economic equity. They aim to reduce inequality and promote social justice, aligning with SDG 10 on 'Reduced Inequalities'. Countries such as Norway, Spain and Switzerland have introduced wealth tax regimes, helping to reduce inequality.[96]

The most common type of burden-shifting policy is progressive personal income taxation. Virtually all countries that have a personal income tax (PIT) design it in a progressive way.[97] Such a design aims to reduce inequality (SDG 10) by ensuring that higher-income individuals contribute a larger share of their income in taxes compared to lower-income individuals and is seen as a key mitigator of inequality.[98] Another example of burden-shifting policies is carbon pricing, which aims to internalise the external costs of carbon emissions and incentivise cleaner production methods and consumption patterns, supporting SDG 13 on 'Climate Action'. Carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, can effectively address climate change by encouraging businesses and individuals to reduce their carbon footprint. For instance, the EU's ETS imposes a cap on greenhouse gas emissions and allows companies to buy and sell emission allowances, thereby creating a market-based incentive for emissions reduction while remaining revenue-neutral for governments. Similarly, the revenues from taxes on single-use plastics or fossil fuel subsidies can be

[94] OECD, *OECD Secretary-General Tax Report to G20 Finance Ministers and Central Bank Governors* (February 2024) 12.
[95] Š Papadaki, 'The Amount of Excise Tax and its Effect on the Consumption of Alcohol and Cigarettes in European Countries' (2022) 22(4) *Addictology* 234.
[96] See chapter 7 in Lucas Chancel, Thomas Piketty, Emmanuel Saez and Gabriel Zucman, *World Inequality Report 2022* (World Inequality Lab, 2022).
[97] Eberhard Karls University of Tübingen Research School of International Taxation, *The International Tax Institutions Database* (2024).
[98] World Bank, *Poverty and Shared Prosperity 2022: Correcting Course* (2022).

earmarked for renewable energy projects, supporting SDG 7 on 'Affordable and Clean Energy' while maintaining overall revenue neutrality.

Tax expenditures are a key component of the third type of direct interaction between tax policy and the SDGs – the revenue-negative type. The term refers to benefits granted to specific sectors, activities or groups through preferential tax treatments such as exemptions, deductions, credits, deferrals and lower tax rates. Almost all (central) governments use tax expenditures typically to pursue a multitude of goals spanning across almost all SDGs.[99] The number of such policies, on average, is around 180 but in some countries, it can exceed 1,000 (eg, in Greece or Cameroon).

In relation to climate-related SDGs for instance, the Global Tax Expenditures Database (GTED) found 713 tax expenditure provisions from around the world with such goals.[100] Of these provisions, 301 are related to the promotion of renewable energy generation (eg, sales tax exemptions of photovoltaic modules in Pakistan or customs duty and value added tax (VAT) exemptions for wind turbines in Cameroon). Electric vehicles provisions account for 113 (eg, in Ukraine, Mexico, South Korea, and many other countries). The remaining provisions are aimed to incentivise the usage or development of public transport (eg, PIT reimbursements for commuting expenses using public transport in Belgium), incentivising energy efficiency (eg, 65 per cent PIT deduction for various energy redevelopment interventions of existing buildings in Italy), or other climate-related goals.

6. APPLICATION AT DIFFERENT LEVELS – THE ROLE OF INSTITUTIONS

As previously outlined, the four-pillar approach proposed by Nerudová and co-authors identifies the institutional pillar of sustainability as a pivotal element in the achievement of the SDGs.[101] The implementation of diverse social, economic, and environmental reforms frequently necessitates a certain degree of institutional commitment. The amendment or drafting of tax legislation that supports the achievement of sustainability goals also requires the involvement of national and international institutions. Accordingly, this section delineates the function of institutions in the pursuit of a sustainable future. The institutional features of tax compliance and cooperation, the capacity to adapt to the 21st century technological advancement, carbon pricing, international tax dialogues and initiatives, and tax capacity contribute to the development of sustainable taxation. By focusing on the institutional pillar, this article emphasises the need for strong governance structures at both national and international levels to navigate the complexities of implementing sustainable and coordinated tax policies.

From a tax perspective, DRM requires the minimisation of tax loopholes, to prevent the loss of potential tax revenue. The existence of a well-defined and functioning national tax law is regarded as insufficient when the matters and involvements are of a cross-border nature. It is therefore crucial to agree on international rules and guidelines and enforce them in practice to provide all the engaged stakeholders with some certainty when exposed to additional legislation. As a result, the establishment of a level playing

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[99] Augustin Redona, Christian von Haldenwang and Flurim Aliu, *Global Tax Expenditures Database* (GTED) (2023) <https://gted.taxexpenditures.org/data-download>.

[100] Christian von Haldenwang, Agustin Redonda and Flurim Aliu, *Tax Expenditures in an Era of Transformative Change: GTED Flagship Report 2023* (Tax Expenditures Lab, 2023).

[101] Nerudová et al, 'Tax Policy Areas and Tools', above n 49.

field on international tax policy and standards is critical, given the ease of individuals' mobility and technological advances in the 21st century. As previously stated, this essential coordination is pivotal to combat any tax avoidance or evasion behaviour and to provide jurisdictions across the globe with increased tax revenue. However, there are debates surrounding the desired impact and scope of cooperation for tax purposes, particularly regarding the loss of sovereignty by most nations. One argument is that a lack of cooperation could result in a loss for all nations, particularly the least powerful.[102] On the other hand, Dagan challenges the assertion that international tax cooperation benefits all countries. In her volume, *International Tax Policy: Between Competition and Cooperation*, Dagan refers to the phenomenon of the 'marketization' of taxation, whereby countries compete for investments, but the decisions that sovereign countries make domestically are now constrained by international standards.[103] Her analysis focuses on the role of tax treaties as a fundamental element of the international tax system, their failure to promote greater welfare for all countries, the power imbalances between the most and least economically developed nations in the context of treaty negotiations, and the shortcomings of the OECD in revising tax treaties and enhancing source taxation rights as a means of improving the position of developing countries.

Tax revenue loss as a result of the use of tax havens by both individuals and multinational entities over the past few decades has created a significant challenge for tax authorities in identifying taxpayers and levying taxes. The Tax Justice Network estimates tax losses worldwide amount to USD 483 billion annually, of which USD 312 billion are attributed to corporate tax avoidance and USD 171 billion to tax evasion by individuals.[104] Furthermore, the OECD estimates that between USD 100 and 240 billion in revenue is lost annually due to multinational corporations' activities.[105]

Initiatives that aim to implement global tax transparency and exchange of information standards, such as Exchange of Information upon Request (EoIR) of the Global Forum on Tax Transparency and Exchange of Information for Tax Purposes and Automatic Exchange of Information (AEoI) under the Common Reporting Standard have managed to achieve success in the fights against tax avoidance and evasion.[106] As an outcome of the global financial crisis and the emergence of the need to increase transparency, the G20 issued in April 2009 at their London Summit a declaration to put an end to the banking secrecy era.[107] That is the establishment of Global Forum's work to endorse EoIR and later AEoI (2013) as the new international tax transparency standards. A regional response to address cooperation and respond to international development regarding compliance and exchange of information mechanisms is the Directive on Administrative Cooperation in the Field of Taxation at the EU level, initially introduced

[102] Laurens van Apeldoorn, 'BEPS, Tax Sovereignty and Global Justice' (2018) 21(4) *Critical Review of International Social and Political Philosophy* 478.
[103] Tsilly Dagan, *International Tax Policy: Between Competition and Cooperation* (Cambridge University Press, 2018).
[104] Tax Justice Network, *The State of Tax Justice 2021* (November 2021).
[105] OECD, 'Base Erosion and Profit Shifting (BEPS)' (Web Page) <https://www.oecd.org/en/topics/policy-issues/base-erosion-and-profit-shifting-beps.html>.
[106] Global Forum on Transparency and Exchange of Information for Tax Purposes, *Pioneering Global Progress in Tax Transparency: A Journey of Transformation and Development, 2023 Global Forum Annual Report* (OECD Publications, 2023).
[107] G20, 'London Summit – Leaders' Statement' (2 April 2009).

in 2011.[108] From its introduction in 2011 until 2023, there have been seven amendments to expand the scope of AEoI within the EU covering a broad range of taxpayers and taxable income.[109]

From a sustainable taxation stance, countries that effectively implement exchange of tax information are generally better off. However, it is essential to evaluate the efficacy of information exchange mechanisms in practice, as not all countries possess the same technological capabilities, sufficient human resources, or even the willingness to participate in such agreements. Nevertheless, as demonstrated below, since the introduction of information exchange mechanisms, a greater number of taxpayers engaged in cross-border situations have been identified, resulting in an increase in tax revenue.[110] In principle, the wider and more effective the network of exchange of information, the more complicated it is for tax avoiders and evaders to take advantage of secrecy granted in some jurisdictions. The introduction of various forms of exchange of information for tax purposes has been a successful program to address untaxed offshore wealth. According to the EU Tax Observatory, since the application of automatic exchange of information in 2016, the share of untaxed offshore wealth has declined drastically.[111] This is a very significant progress towards enabling tax authorities around the world to identify additional taxpayers and raise extra tax revenue. The OECD reports more than EUR 126 billion of additional revenues (tax, interest, penalties) raised as a result of exchange of information and tax transparency standards enforced by at least 171 jurisdictions (EoIR) and 123 jurisdictions (AEoI), where EUR 41 billion are raised in developing countries.[112]

The Inclusive Framework on BEPS contributes to the sustainability of the current international tax framework through a project involving 15 Actions, with a particular focus on the engagement of multinational entities in cross-border operations. BEPS is designed to combat tax avoidance and double non-taxation of multinational entities' profits by addressing loopholes that have emerged in the international tax system because of globalisation and digitalisation.[113] Among the most prominent actions that aim best to improve the sustainability of the international tax framework are Country-by-Country Reporting (CbCR/Action 13) and the Two-Pillar Solution (Action 1/BEPS 2.0). However, there are ongoing initiatives to address and better coordinate reforms in the near future in areas such as taxation and value creation, reallocation of tax rights, and taxation of the digital economy.

Capacity-building is what the OECD/UN are pushing towards so all the countries participating in internationally developed standards are capable of enforcing such standards. It is often pointed out that developing countries need technical assistance or

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[108] European Council, *Directive 2011/16/EU of 15 February 2011 on Administrative Cooperation in the Field of Taxation and Repealing Directive 77/799/EEC* [2011] OJ L 64/1.
[109] For an overview of all amending legislative Acts, see European Union, <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32011L0016>.
[110] Sebastian Beer, Maria Coelho and Sébastien Leduc, 'Hidden Treasures: The Impact of Automatic Exchange of Information on Cross-Border Tax Evasion' (International Monetary Fund Working Paper WP/19/286, 2019); Hjalte Fejerskov Boas, Niels Johannesen, Claus Thustrup Kreiner, Lauge Truels Larsen and Gabriel Zucman, 'Taxing Capital in a Globalized World: The Effects of Automatic Information Exchange' (National Bureau of Economic Research Working Paper 32714, 2024).
[111] Annette Alstadsæter, Sarah Godar, Panayiotis Nicolaides and Gabriel Zucman, *Global Tax Evasion Report 2024* (EU Tax Observatory, 2024) 25-30.
[112] Global Forum on Transparency and Exchange of Information for Tax Purposes, above n 105.
[113] OECD, *Addressing Base Erosion and Profit Shifting*, above n 74.

know-how from the developed countries. That is the only way to achieve a global consensus and enforcement, so countries do not miss out on tax revenues simply because they were unable to implement in time new tax standards. The best example to illustrate this enhanced tax collaboration is the PCT,[114] as already elaborated earlier in this article, and Tax Inspectors Without Borders (TIWB). Since its inception in 2012, TIWB has generated USD 2.30 billion in additional tax collections and USD 6.05 billion in additional tax assessments, with USD 230 million in additional tax revenue collected and USD 1.11 billion in additional tax revenue assessed in 2023 alone.[115]

Another crucial area where the institutional pillar plays a central role is the global effort to implement carbon pricing mechanisms, such as carbon taxes or emissions trading systems (ETS), in support of SDG 13 on Climate Action. While carbon pricing is widely recognised as a crucial tool for reducing greenhouse gas emissions, global cooperation is essential for its success. A cohesive multilateral framework could help to ensure consistency and fairness across borders.[116] The absence of such a framework, however, may be limiting the full potential of carbon pricing. Studies indicate that, although carbon pricing has been effective in reducing emissions in some regions, its overall impact remains modest – typically resulting in reductions ranging from only zero to 2 per cent annually.[117] This limited effectiveness may be attributed, in part, to the fragmented national approaches and the lack of coordinated international action. Without robust international coordination to harmonise carbon pricing frameworks and address equity concerns, the global effectiveness of such policies will remain constrained. Instruments like border carbon adjustments can help mitigate competitiveness concerns and prevent carbon leakage in countries that unilaterally adopt carbon pricing, but these measures offer only modest incentives for broader global adoption.[118] Stronger international cooperation, such as implementing an international carbon price floor, would be far more effective.

The importance of institutional coordination extends beyond environmental policies to the global tax landscape. The abovementioned tax initiatives have played a significant role in shaping the current international tax architecture. Furthermore, these initiatives have influenced a large number of countries to align their tax systems with internationally agreed standards[119] and a growing number of developing countries are undergoing tax reforms to support the achievement of the SDGs. Recently, even the discussions at the United Nations regarding the new proposal for an UN Tax Framework

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[114] 'First Global Conference of the Platform for Collaboration on Tax – Tax and the SDGs', above n 15.
[115] These data represent operations from 59 ongoing programs across Africa, Asia, Arab States, Europe, Latin America and the Caribbean. See United Nations Development Programme, *Tax for Sustainable Development Goals Initiative*, above n 13, 38.
[116] Tatiana Falcão, *A Proposition for a Multilateral Carbon Tax Treaty* (IBFD Publications, 2019).
[117] Jessica F Green, 'Does Carbon Pricing Reduce Emissions? A Review of Ex-Post Analyses' (2021) 16(4) *Environmental Research Letters* 43004.
[118] Ian Parry, Peter Dohlman, Cory Hillier, Martin Kaufman, Kyung Kwak, Florian Misch, James Roaf and Christophe Waerzeggers, 'Carbon Pricing: What Role for Border Carbon Adjustments?' (International Monetary Fund Staff Climate Note 2021/004, 2021).
[119] Referring to membership of the Multilateral Convention on Mutual Administrative Assistance in Tax Matters, Inclusive Framework on BEPS, Global Forum, Common Reporting Standards, Two-Pillar Solution and other international initiatives.

Convention include topics related to sustainable development and emphasise the role that taxation should play in the scope of equality, inclusiveness and fairness.[120]

7. Challenges to the establishment of sustainable taxation

The achievement of sustainability goals and SDGs more precisely is a challenge for countries acting on their own, through tax measures and reforms implemented alone.[121] As an international commitment, it requires national reforms and considerations and regional/global coordination. Unfortunately, by the midpoint of the 2030 Agenda timeline, in 2023, it has become evident that the SDGs are significantly behind schedule. On a worldwide scale, considering all jurisdictions, there is not one SDG that is expected to be achieved by 2030, with the poorest jurisdictions struggling the most.[122] Yet, undeniably, taxation carries a crucial role in supporting the achievement of these goals, facilitating the process of reaching the targets and maintaining stable and desired progress once the targets are achieved, in particular because tax revenue remains the most sustainable source of revenue for governments across the globe – for example, tax collection rates sit between 15 per cent and 20 per cent of the GDP in many developing countries and are at 34 per cent of the GDP in OECD countries – and it reduces the dependence on international assistance to lower debt levels. Additionally, significant progress is observed in countries that have aligned their tax systems with SDG targets, particularly developing countries.[123]

Several challenges to address sustainability through taxation are observed. The first challenge is to apply all 17 SDGs in tax policy since they can be contradictory. Achieving a specific target on a given SDG could have a negative impact on another goal. An example to support this matter could be tax incentives/deductions for electric vehicles which aim to promote environmental sustainability (eg, SDG 13). Such deductions aim to encourage the purchases and usage of e-vehicles and to reduce the usage of oil/petrol engine cars for any transportation purpose. However, these types of tax deductions might also have a negative impact and go against some SDGs that promote communities with sustainable transport networks, less traffic and a lower number of passenger cars per 1,000 inhabitants (eg, SDG 9, SDG 11). Often there are trade-offs and tensions that come with choices that require a balance between economic growth that can contribute to poverty reduction and the preservation of the environment.[124]

In relation to overall tax expenditure regimes, while most countries provide some form of climate-related tax expenditures, they, at the same time, also provide fossil fuel subsidies through the tax system.[125] For example, aviation fuel is tax-exempt in all

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[120] United Nations, *Promotion of Inclusive and Effective International Tax Cooperation at the United Nations: Report of the Secretary-General*, UN Doc A/78/235 (26 July 2023).

[121] Pernilla Rendahl and Katarina Nordblom, 'Identifying Challenges for Sustainable Tax Policy' in Cécile Brokelind and Servaas van Thiel (eds), *Tax Sustainability in an EU and International Context* (IBFD Publications, 2020) 393.

[122] Sachs et al, above n 78.

[123] United Nations Development Programme, *Tax for Sustainable Development Goals Initiative*, above n 13.

[124] Justice Mensah, 'Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review' (2019) 5(1) *Cogent Social Sciences* 1653531.

[125] OECD, *Fossil Fuel Support Data* (2023) <https://www.oecd.org/en/topics/fossil-fuel-support.html>.

international flights around the world.[126] Many countries also provide employer-provided car tax incentives, which could counteract SDG 11 on 'Sustainable Cities and Communities' and SDG 13 on 'Climate Action' (if such employer-provided cars run on fossil fuels). Beyond climate-harming tax incentives, other tax policies such as joint taxation of adult couples could have negative effects on other SDGs, such as SDG 5 on 'Gender Equality'.

Furthermore, targeting SDGs through tax measures may not reach all segments of the population, particularly in developing countries with high rates of informality. In these contexts, a significant portion of economic activity occurs outside formal channels, making it challenging for governments to effectively implement tax policies and collect revenue. For instance, in some African and Latin American countries, a large portion of the workforce operates in the informal sector, where transactions often go unrecorded and taxes are not paid.[127] The size and value of these transactions in the shadow economy are often not easily measurable, making it harder to assess the real revenue loss. Despite that, studies conducted by committees within the European Parliament for instance, estimate lost revenue of over EUR 50 billion per year from the EU Member States because of VAT fraud.[128] As a result, revenue-positive policies such as excise taxes or progressive income taxation may primarily affect those who are formally employed or engaged in formal business activities, leaving out a substantial portion of the population. Moreover, wealth taxes may not be applicable or enforceable in regions where wealth is often held in non-traditional forms, such as land or livestock, rather than financial assets. Similarly, carbon pricing mechanisms may have limited impact in regions where energy consumption is predominantly rural and decentralised. Additionally, in countries with weak tax administration systems or pervasive corruption, tax revenue may not be effectively utilised for SDG-related initiatives, further exacerbating disparities.

The interaction between the SDGs and taxation should be assessed carefully. Regulatory tax measures could be very attractive from a political perspective, but their consequences on the SDGs may not be the desired ones.[129] Environmental taxes and their implementation could be used as an example to support such a claim. Tax reforms aiming to impact the environment and climate change such as ETS or carbon border adjustment mechanisms are used as instruments that essentially require polluters to pay. Undoubtedly, they aim to incentivise the reduction of carbon emission levels but at the same time these taxes design a 'right to pollute' for those able to pay. These environmental taxes most likely will generate a behavioural change for those who cannot cover the costs of the tax and effectively will reduce their likelihood to pollute. This leads to an unfair situation, where the richer polluters may buy themselves out of the situation and policy-makers must consider one of the guiding principles when the polluter pays principle was adopted by the OECD in 1972 to limit the effect of such tax measures to the specific socioeconomic problems associated with the implementation

[126] International Air Transport Association, 'Tax Exemption on Jet Fuel' (undated), available at: <https://www.iata.org/en/programs/ops-infra/fuel/>.
[127] Marius-Cristian Frunza, *Value Added Tax Fraud* (Routledge, 2019).
[128] Marie Lamensch and Emanuele Ceci, *VAT Fraud: Economic Impact, Challenges and Policy Issues* (European Parliament, Study Requested by the TAX3 Committee, 2018) 8.
[129] Rob van Gestel and Jurgen de Poorter, 'Putting Evidence-Based Law Making to the Test: Judicial Review of Legislative Rationality' (2016) 4(2) *The Theory and Practice of Legislation* 155.

of a country's environmental program.[130] In cases like this, it is rather unclear if environmental tax incentives or reforms will achieve the goal(s) that are aimed for.

The continuous reforms and changes in the international tax framework represent a challenge of their own. Many changes and adjustments carry a specific risk and uncertainty, especially for countries that cannot keep up with the pace of such developments. This is closely linked to the political pressure that many developing countries face to adopt new international tax standards in a timely manner, switching the focus of national legislators and prioritising certain initiatives instead of sustainability for instance. For example, focusing on the implementation of the Global Minimum Tax (GMT) may affect the implementation of the SDGs in some African countries.[131] At the same time, however, participating in the GMT agreement might yield additional tax revenue for low-income countries, so there is a direct gain from it although it slows down the progress to fund and support directly the SDGs. However, participation in such an agreement may result in the offset of national tax incentives which could impact the position of a low-tax jurisdiction to attract foreign investment.

Lastly, another observed challenge is to design a new and more sustainable tax system. This carries a highly practical and political challenge. Discussions are still taking place on reforming the way value is interpreted for tax purposes. Christians argues that the current international tax system is unsustainable due to the conflict of 'real value' creation, both legally and economically, resulting from intangible and tangible assets.[132] A tension exists in assumptions if profits are driven by tangible assets (human capital, natural resources) or intangible assets (concepts, branding) and this leads to a shift in taxing rights, wherever profit-generating factors are deemed to be resident.

While discussions on designing more sustainable tax systems are often linked to corporate or personal income tax reforms[133] which improve progressivity, that is not always the case. Recently, there has been growing discussion about a global wealth tax system for ultra-high-net-worth individuals. The EU Tax Observatory and its director, Gabriel Zucman, have already proposed a 2 per cent minimum tax on billionaires' wealth to address the fact that current tax systems have failed to tax the rich effectively.[134] Others like de la Feria and Swistak argue that VAT systems could also be redesigned to be more progressive through the introduction of real-time refund schemes for low-income households.[135] However, such fundamental VAT reforms would require time and careful planning and may be difficult to implement in technologically disadvantaged countries.

8. CONCLUSIONS

To identify the key features of sustainable taxation and examine the relationship between tax policy and sustainability, this article conducts a conceptual analysis of the

[130] OECD, *The Polluter-Pays Principle: OECD Analyses and Recommendations* (1992).
[131] Afton Titus, 'Global Minimum Corporate Tax: A Death Knell for African Country Tax Policies?' (2022) 50(5) *Intertax* 414.
[132] Allison Christians, 'Designing a More Sustainable Global Tax System' (2021) 44(1) *Dalhousie Law Journal* 19.
[133] Ibid.
[134] Gabriel Zucman, *A Blueprint for a Coordinated Minimum Effective Taxation Standard for Ultra-High-Net-Worth Individuals: Commissioned by the Brazilian G20 Presidency* (EU Tax Observatory, 2024).
[135] Rita de la Feria and Artur Swistak, 'Designing a Progressive VAT' (International Monetary Fund Working Paper WP/24/78, April 2024).

topic. First, through a conceptual analysis, the authors analyse the use of sustainability in tax policy and conclude that sustainable taxation is 'the alignment of tax reforms with the SDGs'. Once the concept is clarified, the authors examine the ways in which the SDGs and tax policy interact, both indirectly and directly. An indirect interaction between the two is distinguished as an instrument to influence DRM through better tax effort(s), stronger anti-tax avoidance measures and foreign aid to developing countries. This article demonstrates that in general, countries that have a higher tax-to-GDP ratio or a higher tax effort score tend to perform better regarding their SDG achievement. Directly designing tax policies to support sustainable behaviour through tax expenditures or incentives might also impact the achievement of the SDGs. Nevertheless, it is essential to carefully assess the direct and indirect interaction between SDGs and tax policy, as certain tax measures might have both positive and negative impacts on the achievement of some SDGs. In addition, this article highlights the ongoing progress towards a more inclusive and collaborative international tax framework, which contributes to more efficient revenue mobilisation and alignment of tax systems with SDG targets. Finally, it identifies a number of challenges that the current international tax framework needs to further address in order to achieve sustainable taxation.

9. APPENDIX

Table 1: The Sustainable Development Goals and Their Targets

Goal	Target
1. No Poverty	End poverty in all its forms everywhere
2. Zero Hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Good Health and Well-Being	Ensure healthy lives and promote well-being for all at all ages
4. Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Gender Equality	Achieve gender equality and empower all women and girls
6. Clean Water and Sanitation	Ensure availability and sustainable management of water and sanitation for all
7. Affordable and Clean Energy	Ensure access to affordable, reliable, sustainable and modern energy for all
8. Decent Work and Economic Growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Industry, Innovation, and Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduced Inequalities	Reduce inequality within and among countries
11. Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient and sustainable
12. Responsible Consumption and Production	Ensure sustainable consumption and production patterns
13. Climate Action	Take urgent action to combat climate change and its impacts
14. Life Below Water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Life on Land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

16. Peace, Justice, and Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Partnerships	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Source: United Nations.[136]

Table 2: Publications on the Concept of Sustainable Taxation

Publication	Title	Determinants
Schratzenstaller (2015)[137]	Sustainable tax policy: Concepts and indicators beyond the tax ratio	Three-pillar approach (ECO, SOC, ENV)
Gunnarsson (2020)[138]	Fair and Sustainable Taxation from a European Horizon	No specific approach
Davis-Nozemack & Kisska-Schulze (2020)[139]	Applying Sustainability to Tax	Two-pillar approach (SOC and ENV)
Nerudová et al (2019)[140]	Tax System Sustainability Evaluation: A Model for EU Countries	Four-pillar approach (ECO, SOC, ENV, INST)
Brokelind & van Thiel (2020)[141]	Tax Sustainability in an EU and International Context	SDGs

Source: authors' elaboration.

[136] United Nations General Assembly, *The 2030 Agenda*, above n 3.
[137] Schratzenstaller, above n 44.
[138] Gunnarsson, above n 42.
[139] Davis-Nozemack and Kisska-Schulze, above n 1.
[140] Nerudová et al, above n 1.
[141] Brokelind and van Thiel, above n 2.

Table 3: Relationship between the 5 Ps of the SDGs and Each Specific Goal

Source	People	Planet	Prosperity	Peace	Partnership
United Nations[(a)]	SDG: 1, 2, 3, 4, 5	SDG: 6, 12, 13, 14, 15	SDG: 7, 8, 9, 10, 11	SDG: 16	SDG: 17
Hammes et al (2021)[(b)]	SDG: 1, 2, 3, 4, 5	SDG: 6, 12, 13, 14, 15	SDG: 7, 8, 9, 10	SDG: 16	SDG: 11, 17
Urata et al (2023)[(c)]	SDG: 1, 2, 3, 4, 6, 7	-	-	SDG: 5, 8, 10, 16, 17	SDG: 17
Morton et al (2017)[(d)]	SDG: 1, 2, 3, 4, 5, 6	SDG: 13, 14, 15	SDG: 7, 8, 9, 10, 11, 12	SDG: 16, 17	
Mattera & Ruiz-Morales (2021)[(e)]; UNGC (2017)[(f)]	Human rights SDG: 1, 2, 3, 4, 5, 8, 10, 16 Labour Standards SDG: 1, 2, 3, 4, 5, 8, 10, 16	Environment SDG: 2, 6, 7, 13, 14, 15	Anti-corruption SDG: 8, 9, 10, 11, 12, 16	SDG 17 is referred to the connecting factor for all the other 16 goals	
Lekagul et al (2022)[(g)]	Social SDG: 1, 2, 3, 4, 5, 6	Environment SDG: 11, 12, 13, 14, 15	Economic SDG: 7, 8, 9, 10	Fostering Peace and Partnerships SDG: 16, 17	
Goubran (2019)[(h)]	People SDG: 1, 2, 3, 4	Environment SDG: 6, 12, 14, 15	Society SDG: 3, 5, 7, 8, 10, 11, 16	Means SDG: 5, 7, 9, 13, 17	

Source: authors' elaboration.

Notes: (a) SDG Services, above n 61.

(b) Valéria Sucena Hammes, Daniela Biaggioni Lopes, André Carlos Cau dos Santos, Joanne Régis Costa and Yeda Maria Malheiros de Oliveira (eds), *Agricultural Research and Innovation in the 2030 Agenda: Contributions of Embrapa and Partners* (Embrapa, 2021) ch 2 <https://ainfo.cnptia.embrapa.br/digital/bitstream/item/221298/1/SDG-188.pdf>.

(c) Urata et al, above n 62.

(d) Morton et al, above n 64.

(e) Mattera and Ruiz-Morales, above n 62.

(f) United Nations Global Compact, *United Nations Global Compact Progress Report 2017: Business Solutions to Sustainable Development* (2017) <https://d306pr3pise04h.cloudfront.net/docs/publications%2FUN+Impact+Brochure_Concept-FINAL.pdf>.

(g) Lekagul et al, above n 64.

(h) Goubran, above n 62.