TAX EXPENDITURES LAB

TAX EXPENDITURE EFFECTIVENESS

TAX EXPENDITURES LAB FLAGSHIP REPORT 2025

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FOREWORD BY THE DIRECTORS OF CEP AND IDOS

Tax expenditures continue to represent one of the most important, and yet least examined dimensions of fiscal policy. As our colleagues and partners highlight in this third biennial flagship report, the use of tax expenditures – benefits granted through preferential tax treatment – remains both widespread and opaque. Tax credits, exemptions, deductions and other tax expenditures trigger average losses in government revenue of almost 4 percent of GDP. Yet, close to half of all countries worldwide still do not report on the revenue they forgo due to these provisions. Among those that do, many provide only minimal data. Systematic evaluation is largely absent.

This lack of scrutiny is striking – even more so given the increasing constraints in fiscal space around the globe. Tax expenditures often rival, and in some cases exceed, direct spending programs in fiscal magnitude – yet they rarely receive comparable attention, debate, or evaluation. Unlike budgetary expenditures, which are typically subject to annual parliamentary approval and public oversight, tax expenditures are frequently embedded in the tax code for years without systematic review. Their fiscal costs accumulate silently, shaping market incentives, distributional outcomes and environmental footprints in ways that remain largely invisible to policymakers and citizens alike. Enhancing transparency and accountability in this area is therefore not merely a technical exercise in fiscal reporting, but a political imperative.

Against this background, we are immensely grateful to the growing community of policymakers, government officials, researchers, and further stakeholders who have continued to advance this agenda over the last two years. Through collaboration, knowledge sharing, and capacity building, more countries are publishing detailed data on their tax expenditures, providing revenue forgone estimates, and linking them to policy objectives. This collective effort has not only expanded the number of reporting jurisdictions – from 105 to 116 – but has also strengthened the global dialogue on how tax expenditures can be better aligned with fiscal, social, and environmental priorities. The launch in Sevilla this summer of a coalition on tax expenditure reform – bringing together five international think tanks and research organizations, including CEP and IDOS – is a case in point.

The momentum generated by this community underscores that progress is possible in placing transparency and evidence-based policy at the center of fiscal governance – and is vital to protect especially in times of shrinking fiscal spaces. Undoubtedly, with more than 100 countries failing to disclose any information on tax expenditures, persistent data gaps among those that do report, and a startling lack of evaluation in the field, much remains to be done. We are greatly looking forward to the next steps in our joint journey to close these gaps, and to ensure that tax expenditures become firmly embedded into a cycle of reporting, evaluation, and, ultimately, informed reform.

Prof. Dr. Anna-Katharina Hornidge

Director, German Institute of Development and Sustainability (IDOS)

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With regard to communication and publication, we are lucky to count on the excellent support of our colleagues Pepa Echanove at CEP as well as Tanja Vogel and Cornelia Hornschild at IDOS. Our project websites – the Lab landing page, www.taxexpenditures.org, as well as the GTETI and GTED websites – continue to be in the capable hands of Andrew Colby, who has been accompanying our work since the beginning and is the creative mastermind behind many of the website functions and design features. Katharina Schaarschmidt from IDOS has once again done a wonderful job editing and formatting the different contributions and putting everything together in a coherent and reader-friendly format.

The work on the GTED and GTETI databases is the backbone of our manifold joint activities on tax expenditures. The tasks of updating country-level data and integrating new reporting countries are key in this regard, and we truly appreciate the continuous support and thorough work of our international consultants Abigail, Antonella Del Aguila Coletti, Cheick Camara, Daniela De La Hoz, Komal Muzamil, Paula Castells, Paula Vijoditz, and Sebastian Barraza.

CONTENT TABLE

LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AOTC	American Opportunity Tax Credit
APA	Advance Pricing Agreement
APC	Additional Procedure Code
ASYCUDA	Automated System for Customs Data
ATAF	African Tax Administration Forum
ATI	Addis Tax Initiative
BCR	Benefit-Cost Ratio
BEPS	Base Erosion and Profit Shifting
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung – German Federal Ministry for Economic Cooperation and Development
BTS	Benchmark Tax System
CBA	Cost-Benefit Analysis
CEP	Council on Economic Policies
CET	Common External Tariff
CIAT	Inter-American Center of Tax Administrations
CIT	Corporate Income Tax
CGT	Capital Gains Tax
CRM	Compliance Risk Management
EAP	East Asia & the Pacific
ECA	Europe & Central Asia
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EIA	Energy Investment Allowance (Netherlands)
ETR	Effective Tax Rate
EU	European Union
EV	Electric Vehicle
FDI	Foreign Direct Investment
FISC	European Parliament Subcommittee on Tax Matters
FR	Flagship Report
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GloBE	Global Anti-Base Erosion
GMT	Global Minimum Tax
GST	Goods and Services Tax
GTED	Global Tax Expenditures Database
GTETI	Global Tax Expenditures Transparency Index
G7	Group of Seven
G20	Group of Twenty
HIC	High-Income Country
IDOS	German Institute of Development and Sustainability
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
IOTA	Intra-European Organisation of Tax Administrations
IP	Intellectual Property
IT	Information Technology
LAC	Latin America & the Caribbean
LIC	Low-Income Country
LMIC	Lower-Middle-Income Country
LNG	Liquefied Natural Gas
MENA	Middle East & North Africa
MIA	Environmental Investment Allowance (Netherlands)
MIC	Middle-Income Country
MNC	Multinational Corporation
MNE	Multinational Enterprise
MoF	Ministry of Finance
MoFPED	Ministry of Finance, Planning and Economic Development (Uganda)
MTFS	Medium-Term Fiscal Strategy
MTRS	Medium-Term Revenue Strategy
MTTC	Marketable Transferable Tax Credit
NA	North America
NPV	Net Present Value
NT-SDF	National Treasury Secure Data Facility (South Africa)
OBS	Open Budget Survey
OECD	Organisation for Economic Co-operation and Development
OTC	Other Tax Credit

PAYE	Pay-As-You-Earn
PCT	Platform for Collaboration on Tax
PIT	Personal Income Tax
QRTC	Qualified Refundable Tax Credit
R&D	Research and Development
RDF	Risk Differentiation Framework
RTC	Rent Tax Credit (Ireland)
SAR	Servicio de Administración de Rentas (Revenue Administration Service, Honduras)
SARP	Special Assignee Relief Programme (Ireland)
SARS	South African Revenue Service
SBIE	Substance-Based Income Exclusion
SDG	Sustainable Development Goal
SII	Servicio de Impuestos Internos (Internal Revenue Service, Chile)
SME	Small and Medium-sized Enterprise
SR&ED	Scientific Research and Experimental Development (Canada)
SSA	Sub-Saharan Africa
SSC	Social Security Contributions
SURE	Start-Up Relief for Entrepreneurs (Ireland)
TaxDev	Centre for Tax Analysis in Developing Countries
TE	Tax Expenditure
UBOS	Uganda Bureau of Statistics
UGAMOD-TAX	Uganda Tax Microsimulation Model
UIA	Uganda Investment Authority
UK	United Kingdom
UMIC	Upper-Middle-Income country
UNDP	United Nations Development Programme
UNU-WIDER	United Nations University – World Institute for Development Economics Research
URA	Uganda Revenue Authority
US	United States
USD	United States Dollar
VAT	Value Added Tax
WAEMU	West African Economic and Monetary Union
WBSO	R&D tax credit (Netherlands)
WCO	World Customs Organization
WTO	World Trade Organization
ZEW	Leibniz Centre for European Economic Research
ZOLITUR	Zona Libre Turistica (Honduras)

EXECUTIVE SUMMARY

Tax expenditures (TEs) – i.e. deviations from a benchmark tax system that lower the tax burden of specific groups, economic sectors or activities – can be powerful tools to promote public policies. However, their effectiveness is often in doubt. The present report discusses the determinants and explores the empirical evidence of TE effectiveness.

More and more jurisdictions publish TE reports, as shown by the Global Tax Expenditures Database (GTED). In its most recent version (1.3.2), the GTED includes 116 reporting jurisdictions, more than 31,000 provisions, and over 150,000 revenue-forgone data points, marking the first time that more than half of the world's jurisdictions publish such information. Still, reporting practices remain heterogeneous, with many countries omitting essential information on policy objectives, legal bases, beneficiaries, or timelines of TEs. Across country income groups, TE use differs significantly: lower-income countries rely more on customs and broad consumption-based measures, middle-income countries focus on market access and sectoral promotion, and high-income countries devote a larger share to welfare policy provisions. Insights from the expanded database show that revenue forgone is typically concentrated in a small set of large provisions, even though many governments also apply large numbers of small and highly targeted measures. These findings underscore the need for comprehensive inventories, clearer reporting standards, and systematic evaluation.

The second edition of the Global Tax Expenditures Transparency Index (GTETI v2.0) shows that, despite some progress, TE reporting remains far from being an effective instrument of fiscal governance. Average scores on the different dimensions of the index indicate that most governments manage large volumes of revenue forgone with limited transparency, weak methodological foundations and almost no systematic evaluation. This undermines budget credibility, obscures the true size of public spending delivered through the tax system and makes it difficult to assess who benefits from reliefs or whether they achieve stated policy objectives. At the same time, substantial improvements in several jurisdictions demonstrate that progress is possible – above all if reporting duties are legally anchored, integrated into budget processes and supported by clearly defined benchmarks and robust data standards. Findings from the GTETI should inform debates on the reform of TEs as well as fiscal policy in general.

The existing evidence on TE effectiveness reveals that many TEs do not meet the expectations placed on them by policymakers. TEs are widely used to advance goals such as employment, poverty reduction, and environmental sustainability. However, supporting the Sustainability Development Goals (SDGs) requires evidence of effectiveness beyond the mere statement of policy objectives. TEs reduce government revenue and, if poorly designed, may generate distortions and unintended externalities, making rigorous ex-ante and ex-post evaluations essential to clarify objectives, assess costs and benefits, and determine whether a TE is the appropriate instrument to pursue them. The UNDP TEs and SDGs Toolkit and its Knowledge Database support governments in aligning their TE regimes with the SDGs, drawing on existing evidence of effectiveness. The database contains 183 publications with 754 evaluations of 674 TE provisions, mostly related to corporate and personal income taxes. Overall, these evaluations show that many TEs are only moderately effective. Although evaluation coverage remains limited, the available evidence highlights key lessons on design, targeting, administrative simplicity, and externalities, helping policymakers anticipate risks and strengthen TE design.

Ireland is one of the few countries worldwide to publish a structured evaluation framework for TEs. The updated guidelines, published in 2024, identify a number of areas where improvements are being made by balancing the trade-offs between effective evaluation and available resources. Along with defining the criteria to distinguish TEs from structural taxation measures, the guidelines outline the detailed approach to

TE evaluation, including best practice in ex-ante and ex-post evaluation. In 2025 alone, eleven TEs were reviewed in Ireland. The recent experiences through the ex-ante review of the Farming Income Volatility taxation measure, and the ex-post reviews of the Rent Tax Credit and the Special Assignee Relief Programme provide useful lessons on the main challenges and areas for improvement. Going forward, well-designed planning and timely identification of data needs are recommended to optimise the deployment of resources and ensure the highest quality of future evaluations.

For the administration of investment tax incentives, a whole-of-government approach is needed, anchored in strong coordination and collaboration among all public stakeholders. Because reforms to streamline tax incentives often take time to gain political traction, public stakeholders—particularly revenue authorities—must prevent abuse and ensure effective administration. While tax incentives aim to attract investment and stimulate economic growth, they also introduce significant compliance risks that can undermine government revenues if not properly managed. The chapter advocates for developing risk-based compliance programs targeting recipients of tax incentives, combining supportive, preventive, and enforcement approaches with actions of varying frequency and intensity over the entire lifecycle of the incentives—when they are granted, during their application, and upon their conclusion. A robust compliance risk management (CRM) framework is key to successful tax incentive administration. The chapter also highlights the need for strong governance mechanisms, transparency and accountability frameworks, and regular, evidence-based cost-benefit evaluations as critical enablers for effective tax incentive administration.

High-quality data is a cornerstone of good design, monitoring and evaluation of effective TEs; yet, persistent gaps in availability, integration, and capacity, particularly in low- and middle-income countries, undermine transparency and fiscal accountability. While administrative systems in some countries, such as Uganda, have advanced through digitalization and inter-agency collaboration, TE reporting remains fragmented, with incomplete coverage of tax incentives and exemptions, inconsistent coding, and limited beneficiary information. These weaknesses constrain TE evaluations and distributional analysis, particularly in contexts of high informality. Establishing minimum standards, harmonising TE data, securing data labs, establishing collaboration frameworks, and sustaining investment in technical capacity are critical to overcoming these challenges. Strengthening data systems will not only improve TE estimates but also enable evidence-based policymaking, enhance accountability, and align national practices with international standards.

The value-added tax (VAT) is a crucial source of tax revenue in almost all countries, but significant VAT revenue is typically forgone due to the widespread provision of reduced (including zero) rates and exemptions. These TEs are most commonly intended to provide support to poorer households or to encourage consumption of 'merit' goods and services. However, empirical evidence clearly shows them to be a very poorly targeted way of achieving such goals. New World Bank research also highlights that exemptions can create even greater targeting problems than reduced rates, due to their non-transparent and potentially conflicting direct and indirect impacts on final prices. Countries should, therefore, look to broaden their VAT bases. In particular, where countries have the administrative capacity to effectively implement targeted cash transfer programs, they should use these programs to support poorer households instead of using reduced VAT rates. Meanwhile, the use of exemptions should be restricted to addressing pragmatic concerns, such as the disproportionate compliance costs of small businesses and the practical difficulty in taxing margin-based financial services.

Corporate tax incentives that promote climate-related assets or activities are increasingly common, but their effectiveness in stimulating additional investment and greenhouse gas (GHG) reductions

depends on their design, targeting and the wider policy and economic context. Different designs suit different investments and investor types and no single approach is equally effective across the board. Targeting involves trade-offs: narrow targeting can limit fiscal costs and better align incentives with policy goals, but risks picking ineffective options, raising administrative burdens, and locking in existing technologies at the expense of future, potentially cheaper, alternatives. Effectiveness also hinges on interactions with other climate policies and on country-specific economic conditions. Aligning design and targeting with country-specific needs is best supported by careful ex-ante assessment and ex-post evaluations. Overall, climate-related tax incentives raise familiar tax incentive concerns with few additional considerations specific to climate policy.

A well-designed and balanced R&D tax incentive – combining broad eligibility, targeted scope, simplicity, timely liquidity, and streamlined administration – offers the strongest potential to foster additional innovation and long-term growth. While such incentives can generate meaningful spillovers, their effectiveness depends on careful design, adequate generosity, and alignment with international frameworks such as Pillar Two. A persistent challenge is the low uptake, particularly among SMEs, even in countries with mature systems, which limits the overall impact. Addressing awareness and accessibility barriers, alongside conducting regular evaluations to minimise windfall gains and benchmark against alternative tools, is therefore critical. Continued reliance on super deductions in some EU Member States may further complicate efforts to create a unified and accessible incentive regime.

1

INTRODUCTION

Christian von Haldenwang (IDOS)

What makes tax expenditures (TEs) effective? At first sight, the question does not appear particularly difficult to answer. Principally, the effectiveness of any TE hinges on the degree to which it achieves the objective – or objectives – it was designed to serve. TEs are preferential tax treatments such as exemptions, reduced rates, deductions or tax credits. They are set up to promote exports or employment, attract foreign direct investment (FDI), facilitate the green energy transition, or enable poorer households to access basic goods and services, among a variety of other policy objectives. Consequently, indicators such as export and employment growth, new FDI inflows, generation of renewable energy, poverty reduction, etc. are frequently taken as proof of effectiveness of the respective TE. Indeed, many TE assessments that are not based on a proper evaluation design start (and stop) at this level of reasoning, confounding mere coincidence or correlation with causal impact. In the absence of robust evidence, decision-makers look at those general indicators to find out whether a specific set of TEs produces satisfactory results or not.

It makes sense, however, to take a closer look at TE effectiveness – not least because they are used so widely by governments worldwide and often have significant immediate effects on public revenues and budgets. Above all, is it possible to establish a causal link between the TE and the observed outcome? And if a TE does indeed achieve its policy objective, is the cost of the measure acceptable? Would other approaches, such as direct spending or regulatory policies, perhaps be more efficient? Does the respective TE target precisely the beneficiaries it is supposed to address, or do the benefits also accrue to other groups who might not really need them? Does the TE trigger negative externalities that could undermine its effectiveness? Does it interact with other TE provisions or other types of public policies, and do such interactions increase its effectiveness or rather weaken its potential impact?

Against this backdrop, it becomes evident that the effectiveness of TEs depends on a variety of factors and it can be quite challenging to identify and assess the most relevant ones. Some factors escape the control of governments, for instance certain policies pursued by third countries, but others can – and should – be shaped by governments themselves, above all through sound ex-ante assessments and comprehensive ex-post evaluations of TEs. For instance, it is not always clear what the true reason of existence of a given TE is. Policy objectives are not always clearly spelled out, let alone quantified. In some instances, only general goals such as "promoting growth" are set, while the underlying causal mechanisms and expected impacts remain in the dark. In such cases, any positive development can be (and sometimes is) taken as proof of effectiveness. More often than not, TEs are introduced without any quantitative targets. In other instances, targets may be under- or overambitious because they are defined without taking relevant factors into account.

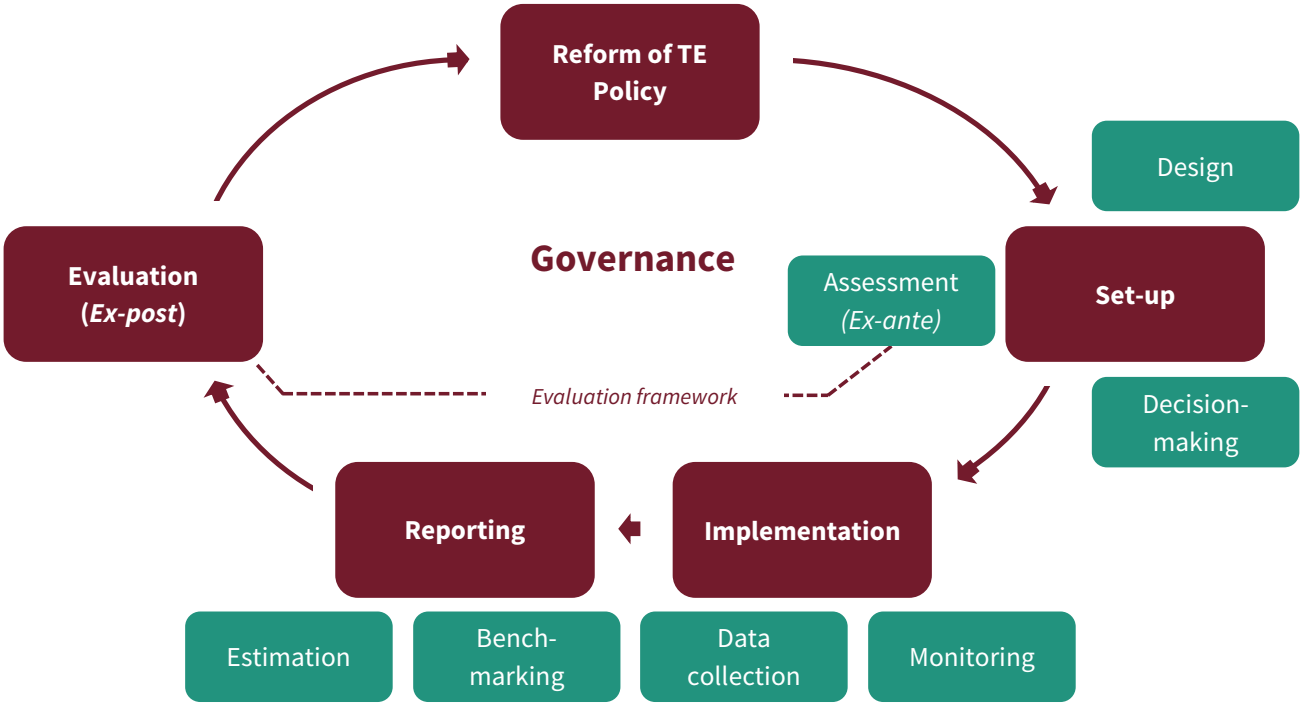
Another factor frequently left out of the equation is time. Until when is the impact of a particular TE supposed to materialise itself? For instance, the German tax exemption on motor vehicles used in agriculture and forestry was introduced in 1922 with the goal to promote the mechanisation of these sectors. More than 100 years later it is safe to say that mechanisation has been achieved. However, the TE is still in place and an attempt to dismantle it in 2023 failed due to fierce resistance by German farmers.

In sum, the overall picture of TE effectiveness is very often one of untested assumptions and lacking evidence. This said, unproven effectiveness does not necessarily imply that the money spent on TEs is always lost. Chapter 4 of the present Flagship Report cites several examples of TEs that do achieve the expected results, and discusses, which factors may have contributed to the positive outcome. Generally speaking, however, evidence on TE effectiveness is patchy and inconclusive.

In the present report, the third in our series of biennial Tax Expenditure Flagship Reports[1], we focus on the determinants and evidence of TE effectiveness. A useful way to approach this subject is by describing TE use as an operation that spans the whole policy cycle (see

[1] See von Haldenwang et al. (2021); von Haldenwang et al. (2023) for the previous versions, called „GTED Flagship Reports".

Figure 1.1: The Tax Expenditures Policy Cycle



Source: Own elaboration[2]

Figure 1.1). Such a cyclical understanding allows to distinguish five different stages of TE use, each of which presents its own implications on TE effectiveness.

The set-up stage encompasses several key features of TE effectiveness. The political decision to apply a TE in the first place is taken at this point, driven by – explicit or implicit – considerations regarding the relative superiority of this tool compared to direct spending, other tax measures or regulatory policies. These considerations may refer to TE effectiveness as goal attainment, but they may also account for other factors, including governance, political bargaining and convenience. A core aspect of safeguarding TE effectiveness at this stage is the application of ex-ante assessments. These assessments can be data-driven quantitative studies or based on a rather descriptive analysis, but they share a common denominator, which is to provide policy-makers with a structured outlook on the expected impact of the TE. In addition, ex-ante assessments can generate the baseline data necessary to determine the success or failure of TEs in subsequent (ex-post) evaluation rounds.

Another feature that has proven to be decisive for TE effectiveness at the set-up stage is their proper design. Low compliance costs, administrative simplicity and effective targeting play a major role with regard to the uptake and fiscal cost of TEs. Targeting is particularly relevant in this regard. It involves identifying the groups, sectors, places or activities that should benefit from a TE, but also the timing of the measure, to avoid potential revenue leakage (Beer et al., 2022).

At the implementation stage, other factors need to be considered. Revenue authorities assume core functions at this stage, for instance granting individual taxpayers access to specific benefits, collecting and pro-

[2] This is a revised version of the Tax Expenditures Policy Cycle originally presented in Redonda et al. (2023).

cessing relevant data, and monitoring uptake. Close communication between revenue authorities and the tax policy units of the ministry of finance (MoF) is necessary to inform policy-makers about any challenges that may arise during TE implementation.

Reporting entails that governments inform decision-makers, legislators and the general public about the use of TEs. Any meaningful debate on individual TEs in a fiscal policy context depends to a considerable degree on TE reporting and the quality of information shared in these reports. A fundamental part of reporting on TEs regards the disclosure of the underlying reference or benchmark tax system (BTS). If the BTS is not well defined, inconsistent or not properly disclosed, chances are high that TE reporting will be incomplete, affecting TE policy-making as a whole. Likewise, political decisions on TEs need to be informed by sound estimations of revenue forgone. While it is true that the prevalent approach to revenue forgone estimation (which is a static method and disregards any behavioural changes by taxpayers) may not always produce an accurate picture of the fiscal impact of TE use, information about the revenue forgone triggered by TEs is still necessary to enable political debate.

Beyond reporting, evaluation has proven to be a major bottleneck in TE policy-making. The available evidence indicates that regular and comprehensive evaluations are a key driver of TE effectiveness. Ideally, a sound assessment of TE effectiveness would comprise a cost-benefit analysis (CBA), accompanied by an analysis of interactions with other public policy measures, externalities generated by the TE and, in some cases, the incidence of the costs produced by the measure. However, such comprehensive evaluations are still rare. Less ambitious impact assessments are sometimes conducted without explicitly relating the costs of a TE to the benefits it is supposed to create. Even more worrisome, however, is the fact that a vast majority of TEs are run – in some cases over many decades – without ever being properly evaluated, not even in the reduced sense of making narrative statements about impacts achieved.

While evaluation is key, it is important that the policy cycle does not stop at this stage. There are far too many cases of public policy evaluations that produced valuable recommendations, but were silently shelved and never put into practice. Many TEs share characteristics that make them difficult to reform even if they were proven to be useless or harmful. Benefits often accrue to small, well-organised groups of taxpayers, while the costs of the measure are being born by the public in general. In many cases, TEs do not receive the same amount of scrutiny as direct expenditure programmes included in the budget cycle. Removing long-standing TEs can be very unpopular and decision-makers may shy away from the political costs associated with TE reform. Introducing sunset clauses in TE policy-making can help to facilitate reform, as can broad access to information, open public debate and the involvement of stakeholders beyond the group of beneficiaries.

Many of the issues raised in the preceding discussion of the TE policy cycle are being taken up in more detail in subsequent chapters of this flagship report. Chapter 2 discusses recent progress in TE reporting based on data from the Global Tax Expenditures Database (GTED). Chapter 3 presents the main findings of the new edition of the Global Tax Expenditures Transparency Index (GTETI). This new version of the index assesses the quality of TE reporting in the 116 jurisdictions covered by the GTED. Chapter 4 gives an overview of the existing evidence on TE effectiveness, based on a comprehensive assessment of evaluations and academic studies. Chapter 5 presents evidence on the use of evaluation frameworks and guidelines, drawn from the case of Ireland. Chapter 6 focuses on administrative aspects of managing investment tax incentives, arguing in favour of strong coordination and collaboration across public entities. Chapter 7 highlights the relevance of comprehensive data management for the design, monitoring and evaluation of effective TEs. Chapter 8 addresses the issue of targeting VAT-related TEs, arguing that in many cases these TEs are not effective in providing support to poorer households. Chapter 9 discusses climate-related corporate tax incentives, showing how ex-ante assessment and ex-post evaluations can contribute to improving the design and targeting of the incentives. Finally, Chapter 10 presents the case of tax incentives to promote research and development (R&D), observing that windfall gains and limited uptake can diminish the effectiveness of the measures.

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2

TRACKING TAX EXPENDITURES: INSIGHTS FROM THE GLOBAL TAX EXPENDITURES DATABASE (GTED)

Flurim Aliu (CEP) & Sofia Berg (CEP)

2.1 Introduction

When the Global Tax Expenditures Database (GTED) was launched in June 2021, only 97 of 218 assessed jurisdictions had published any official tax expenditure (TE) data, but coverage has grown with each flagship report.[3] Since the 2023 edition, which presented data on 105 jurisdictions, 11 new jurisdictions have been added: Azerbaijan, Bangladesh, Cayman Islands, Chad, Croatia, Cyprus, Egypt, Ghana, Somalia, Tajikistan, and Zambia. The most recent version of the database (version 1.3.2) now includes 116 reporting jurisdictions[4], meaning that for the first time more than half of the world's jurisdictions are covered by the database (see Figure 2.1).

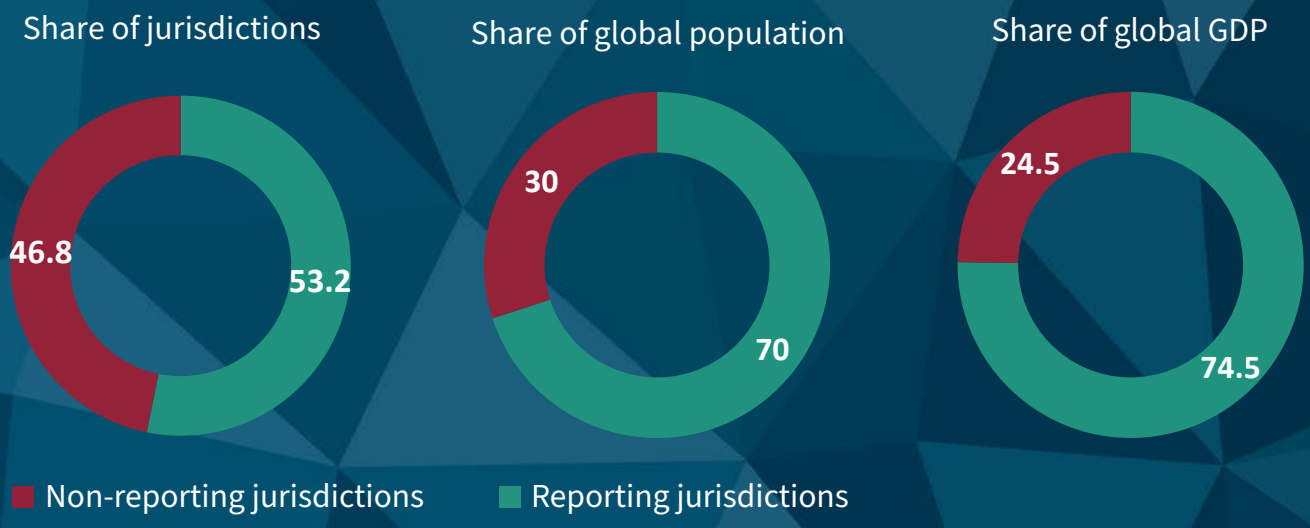
The GTED has also expanded in scope. It now includes 31,712 individual provisions and over 150,000 revenue forgone data points, showing that the reported revenue forgone lies at 3.7% of GDP and 23% of tax revenue globally (see Figure 2.2). 2022 is the year with the broadest coverage so far (103 jurisdictions). Longitudinal coverage is also improving: 47 jurisdictions now report data for over 15 years, and 73 report regularly. A few jurisdictions have not released any report since the previous flagship edition, including Switzerland (last report published in 2021), Poland (2021), and Japan (2018).

This growing and structured dataset has also made the GTED a widely used reference in international analysis and national TE reporting (e.g. Beer et al, 2022; World Bank, 2024; Ministry of Finance Indonesia, 2024; Department of Finance Ireland, 2025). A recent study published by the IMF used GTED data to examine the use of TEs in sub-Saharan Africa (Schneider et al., 2025). The authors find that several countries in the region have yet to estimate TEs, that the cost of TEs as a share of GDP or tax revenue varies widely among those that do, and that most TEs are concentrated in the value added tax (VAT) and corporate income tax (CIT) regimes. The latter pattern is broadly consistent with findings from the GTED overall, which is discussed below. Ruiz-Arranz et al. (2025) analyse the role of tax policy in supporting domestic and foreign direct investment (FDI) in Latin America and the Caribbean. Using GTED data, the authors observe a coexistence of high TE levels (as a share of GDP) with relatively high effective CIT revenues, raising questions about the effectiveness of current TE policies in promoting investment. The study finds that lowering the CIT rate may offer a simpler and more effective way to increase FDI and total investment. At the same time, the authors caution that any reduction in CIT revenue should be considered carefully, given the region's already constrained public finances.

[3] Throughout this chapter, the terms "countries," and "jurisdictions," are used interchangeably for simplicity. Their use does not imply any position on the legal status or diplomatic recognition of any territory.

[4] That is, jurisdictions that have issued at least one official and publicly available TE report since 1990, the first year for which the GTED gathers data.

Figure 2.1: GTED coverage statistics



1,176
TE reports

116
Reporting jurisdictions

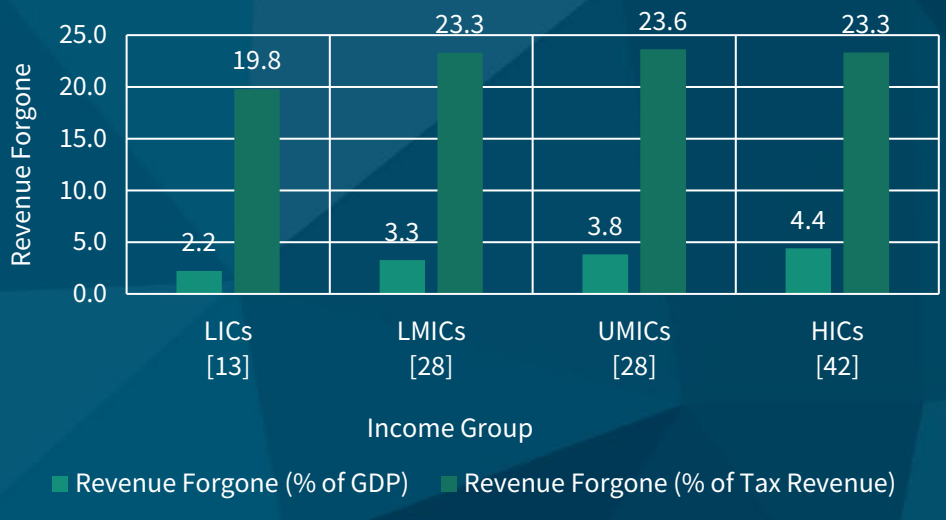
31,712
TE provisions

150,705
RF estimates

3.7%
of GDP

23.0%
of tax revenue

Figure 2.2: Global and income-group revenue forgone averages (1990-2023)

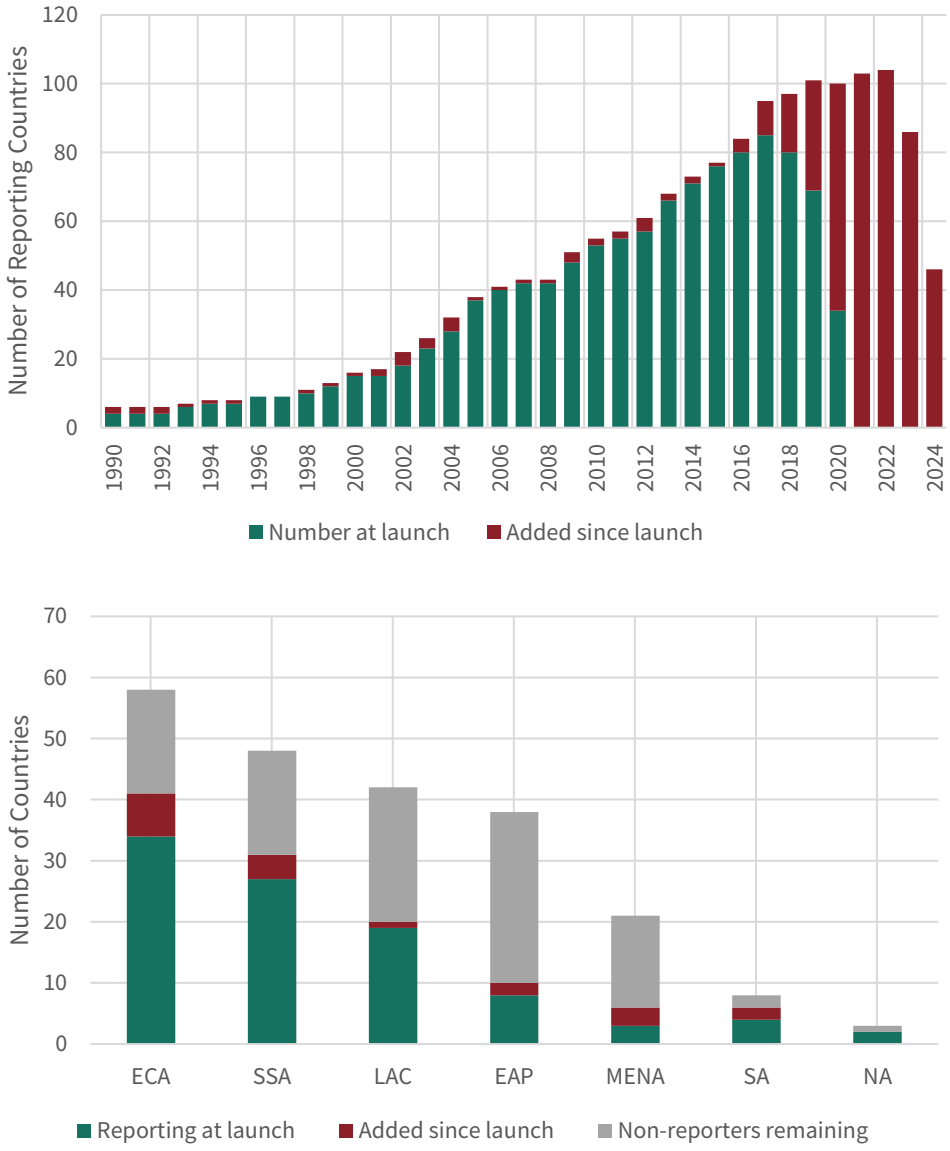


Note: Numbers in brackets indicate the number of countries in each income group with available TE data. Country classifications are based on the latest information by the World Bank. LICs = low-income countries; LMICs = lower-middle-income countries; UMICs = upper-middle-income countries; HICs = high-income countries. For the revenue forgone averages, we first calculated country averages across years and then the global or income group average across countries. Revenue forgone estimates are not fully comparable across countries due to differences in benchmark tax systems, hence averages should be interpreted with caution.

2.2 Tax expenditure reporting during 2024

Reporting on TEs involves a significant learning curve, and governments generally improve the quality and coverage of their reports over time. Since the launch of the GTED, the number of reporting jurisdictions has continued to grow (see Figure 2.3). In regions such as Europe & Central Asia and sub-Saharan Africa, more countries now report than do not, reflecting stronger efforts to enhance transparency of tax policy. This development is supported by long-standing regional organizations that promote economic integration and policy coordination, including the European Union (EU) and the Economic Community of West African States (ECOWAS). In the EU, Directive 2011/85/EU requires member states since January 2014 to publish infor-

Figure 2.3: Global and regional TE reporting trends



Note: Numbers of reporting jurisdictions for the past three years may be subject to delayed reporting. Regional classifications are based on the latest information by the World Bank. "ECA" - Europe and Central Asia; "SSA" - sub-Saharan Africa; "LAC" - Latin America and the Caribbean, "EAP" - East Asia and the Pacific; "MENA" - Middle-East and North Africa; "SA" - South Asia; "NA" - North America.

mation on the revenue effects of TEs, although it does not prescribe a standard methodology (Turrini, 2024). In ECOWAS, Decision 08/2015/CM encourages annual TE reporting, and most countries have complied since 2021 (Tapsoba, 2024). By contrast, non-reporting jurisdictions remain the majority in regions such as East Asia & the Pacific and the Middle East & North Africa.

For countries that do report on TEs, a comprehensive TE report should list all provisions in force, whether or not a cost estimate is available. In practice, however, coverage varies widely. Some countries report only a subset of taxes or TE provisions, making it impossible to obtain a complete picture of the TE regime. A clear statement of what the report covers is therefore essential. Without it, users must rely on detailed legal analysis of the tax law itself to determine the full inventory of potential TEs, a task that is unrealistic for most stakeholders. The Global Tax Expenditures Transparency Index (GTETI) gathers information about coverage of TE reports and assesses several other aspects of TE reporting. It aims at increasing transparency of the use and monitoring of TEs as a policy tool (Redonda et al., 2025).

Differences in reporting are also reflected in the latest reporting cycle. In 2024, 96 countries issued new or updated TE data, out of which 14 provided a statement about coverage in their reports. For example, the TE report in Chile states that all TEs identified by the government, regardless of whether revenue forgone has been estimated, are included in the report (SII, 2024). Such statements represent an important dimension of reporting quality that extends beyond cost estimation alone.

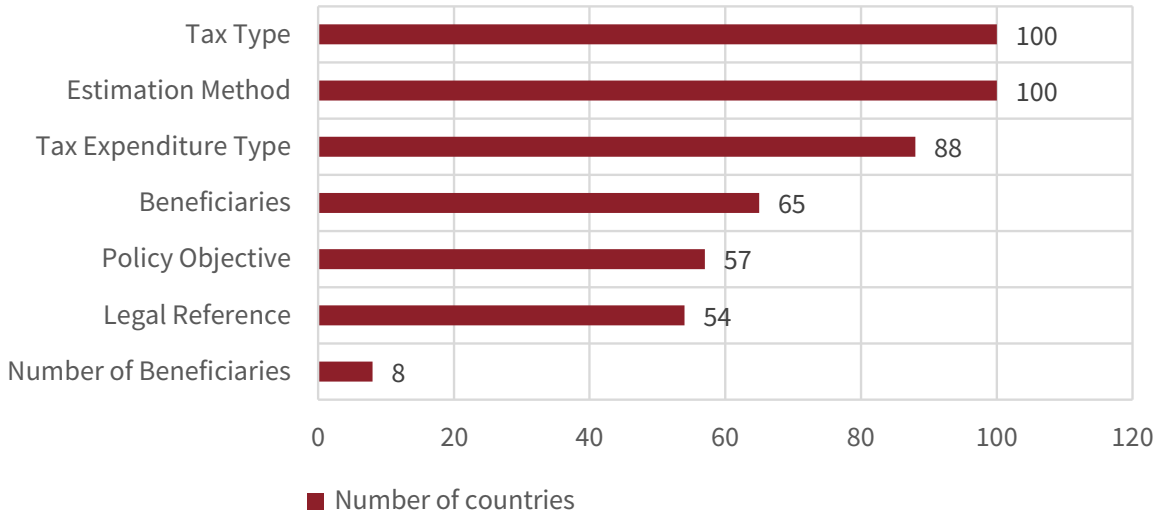
Most jurisdictions that published new TE reports in 2024 maintained the format of their previous reports, but some improvements can be observed. The Maldives, for example, published their first full report on TEs in 2024 (Ministry of Finance and Planning, 2024b). Previously, TE data and information had been included in a box in the Government Budget (Ministry of Finance and Planning, 2024a). The new report indicates the methods and data sources used to calculate the cost of TEs and includes information on policy objectives for most provisions. Information on targeted beneficiaries is included for some specific TEs, and the implementation/sunset timeframe is disclosed for some provisions. Disclosing such information is also useful when prioritising TEs for evaluation, and supports informed decision-making as it helps ensure that policies remain aligned with current national needs and developments.

Countries such as Brazil, Canada, France, Luxembourg, and Mauritania are including information on applicable timeframes by provision in their reports. Neither Luxembourg nor Mauritania included this information before. Canada illustrates the value of such reporting particularly well. Workers benefits have been tax-exempted in Canada since the introduction of the income tax in 1917 and a tax credit for charitable donations also dates back to 1917 (Department of Finance Canada, 2024). For both provisions, and for all others, information is available about implementation and recent changes to the provision. The general income limit on donations was, for instance, increased in several stages in 1997, and the carry-forward period for donations of ecologically sensitive land was prolonged to 10 years (from five) in 2014. Such information strengthens the understanding of each provision as a policy instrument, clarifies how its design has evolved over time, and helps place it in the appropriate policy context.

Although cost estimates are a central component of any TE report, they need to be supported by comprehensive background information to be meaningful. Key contextual elements include the policy objective, the applicable tax type, and the TE mechanism (for example, whether it takes the form of an exemption, deduction, or credit). Other important reporting components are the identification of target beneficiaries, the number of beneficiaries (where data are available), and the legal reference for each provision. However, such information is still missing from most TE reports (see Figure 2.4).

A clearly defined policy objective provides the rationale for introducing the preferential tax treatment and serves as the foundation for assessing its effectiveness, particularly in ex-post evaluations. Objectives should be specific and measurable, rather than broad formulations such as “promoting economic growth.” Countries such as Canada, Ecuador, and France continue to include policy objectives for all TEs in their reports, while others, like Tunisia, have expanded co-

Figure 2.4: Number of countries with additional information on TEs, 2022.



Note: A country was coded as reporting data for a certain category when it provided details for provisions accounting for 75 percent or more of total revenue forgone.

verage over time from reporting objectives for some provisions to now including them for all. Of the 103 countries and jurisdictions that reported in 2022, only 57 provided information on policy objectives (see Figure 1). Similarly, only 54 jurisdictions included legal references for each provision in their reports. Still, several countries have made progress in this area. For example, Burkina Faso and Denmark went from including no, or only general, legal references to now providing such information for most of their TE provisions. Only a handful of jurisdictions provide information on target beneficiaries, and even fewer report the number of beneficiaries. Austria and Cyprus stand out as two examples where this information is comprehensively included in the reports.

2.3 Methodological changes

Building on updates to the GTED methodology already described in the 2023 Flagship Report, which tightened the definition of TE data and introduced forecasted figures (see von Haldenwang et al., 2023), we continue to improve both the structure and the quality of the database. The current version (1.3.2) introduces several practical additions that make the database easier to interpret and more useful over time. These include a clearer classification of policy objectives, new fields capturing start and end dates of TE provisions, and a *"Last Appeared"* field that helps track provisions that are not reported consistently. Together, these changes strengthen the temporal and analytical foundations of the GTED, while keeping the database aligned with the way countries report their TE information.

Inference of policy objectives

The newest version of the GTED classifies policy objective information as *"specific"* when the objective is clearly and explicitly stated, and as *"general"* when the stated objective is very broad (for example, "promote growth") or when it can only be inferred from contextual information such as the description of the TE, or its name. The latter were not included at all in previous versions of the database. This approach enables us to capture policy intentions that are not explicitly articulated in official reports while still adhering to the GTED's principle of reflecting government-reported information as faithfully as possible.

Enhanced tracking of start and end dates

The updated GTED now includes fields for the start and end dates of each provision. At this stage, such infor-

mation remains limited, with only about 8,600 of the roughly 31,700 provisions including a start date, an end date, or both. Even so, for a number of countries and jurisdictions, start and end dates are now reported consistently. Australia, Bulgaria, Brazil, Canada, France, Italy, New Zealand, Papua New Guinea, Russia, Sierra Leone, Slovenia, Chad and Uruguay all provide this information for every TE provision. Several others report dates for most of their provisions, including Guatemala, Indonesia, Tunisia, Taiwan (Province of China), and Ukraine.

Tracking the most recent appearance of each provision in a TE report

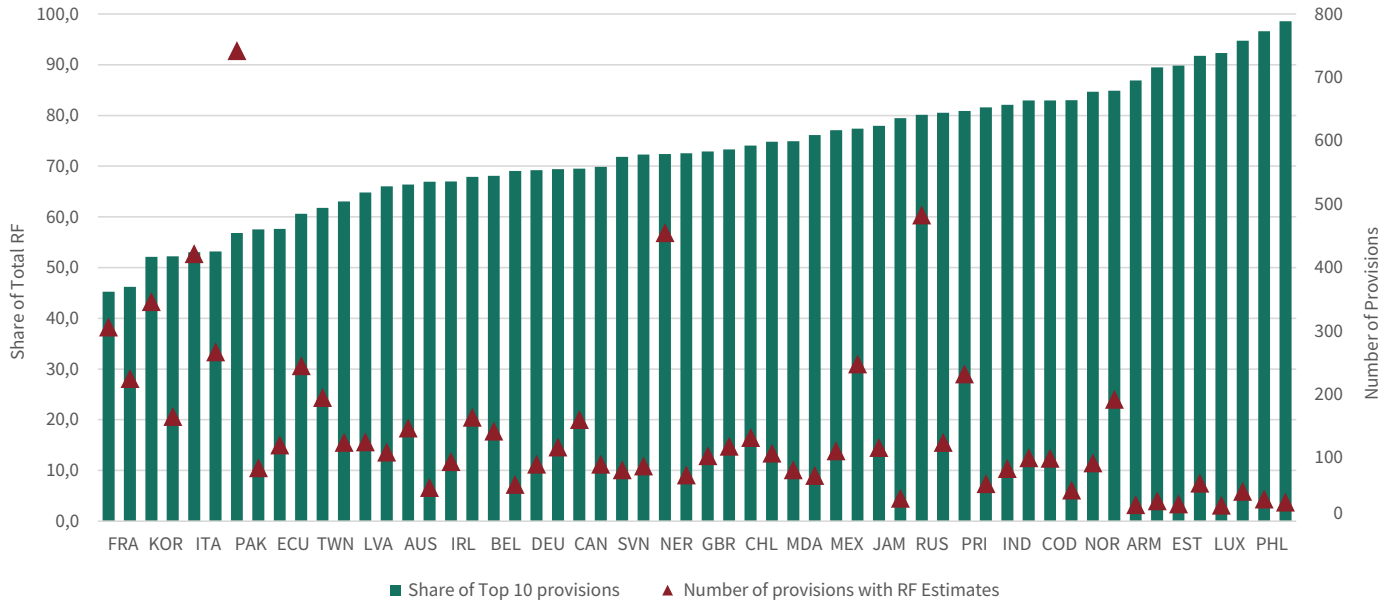
As part of our efforts to improve the temporal quality of the data, the updated GTED now includes a "Last Appeared" field that records the most recent year or report in which a provision was observed. This addition helps make sense of provisions that do not appear in every report or that stopped being reported without any clarification. When a provision lacks a clear start or end date, knowing when it last appeared at least gives users a reference point. It also makes it easier to identify provisions that may have been discontinued, reclassified, or temporarily omitted from official documents.

2.4 Insights from the new version of the GTED

With each update of the GTED, more jurisdictions report more detailed and better structured information, which allows for richer analysis than in earlier editions. The GTED version 1.3.2 benefits from both this broader country coverage and a growing volume of provision-level data, making it possible to examine patterns that were harder to detect in the past.

A consistent insight across time is the degree to which revenue forgone is concentrated in a small number of large provisions. On average, the ten largest TEs account for almost 73 percent of total revenue forgone in any given country, and in Sierra Leone, the Philippines, Croatia, Luxembourg, and Ukraine this share even exceeds 90 percent (Figure 2.5). All income groups share a similar pattern, although it is especially pronounced in low-income and lower-middle-income countries where the top ten provisions account for around 75 percent of the total, on average.

Figure 2.5: Share of total revenue forgone by top 10 provisions and number of provisions with revenue forgone estimates



Note: Only the 57 jurisdictions reporting provision-level information are included in the chart.

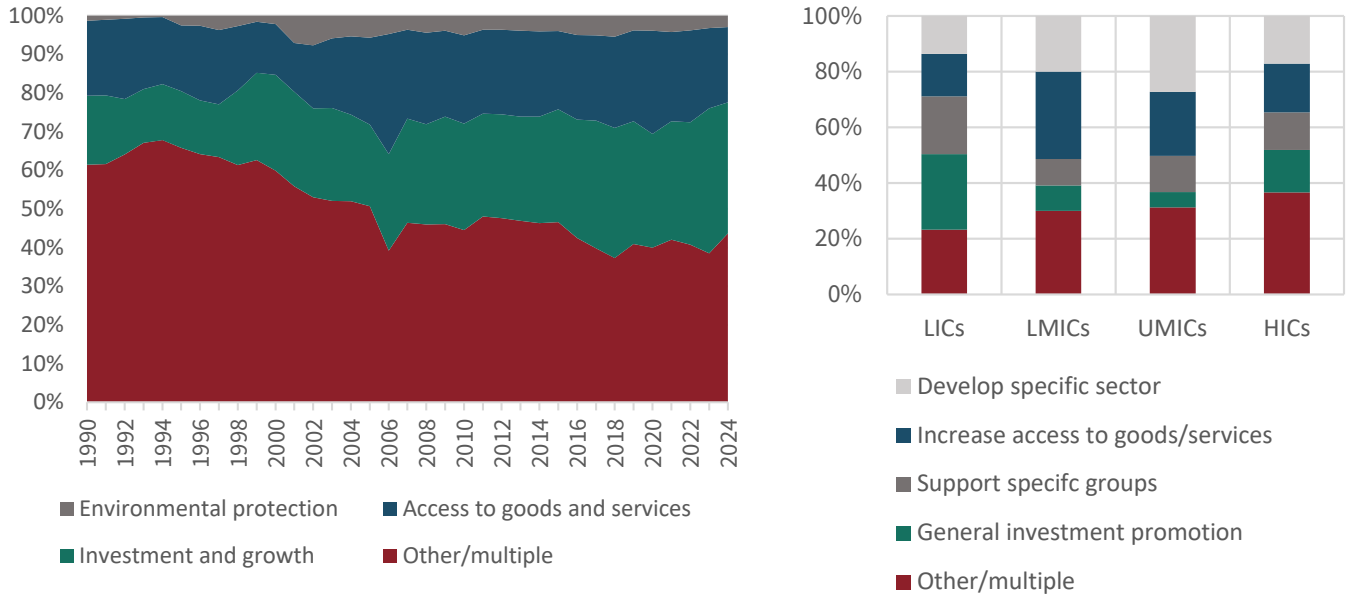
This concentration has important implications for how countries prioritise analytical work. Because detailed evaluations are resource-intensive, setting-up a progressive approach that starts with the largest provisions can provide substantial insight to determine which TEs to evaluate first. This said, a comprehensive evaluation framework ultimately requires a full inventory and systematic assessment of all provisions, including the many smaller measures that collectively shape the effectiveness, transparency and efficiency of the tax system. These smaller provisions matter not only because they add administrative and legal complexity, but also because some of them are designed for very narrow groups of taxpayers.

As noted by Maré, Porcelli and Vidoli (2024), the Italian tax system exhibits a growing "atomisation" of micro-interventions that apply to very small numbers of taxpayers yet contribute substantially to complexity. This pattern is also visible more broadly in the GTED: the database records nearly 600 provisions for which the number of beneficiaries is reported as ten or fewer in certain years, representing about 20 percent of all provisions for which beneficiary counts are available. Understanding the purpose and performance of such targeted measures is therefore an essential part of strengthening the overall integrity of a country's TE regime.

The policy objectives of TE provisions

As shown in Figure 2.4 (above), less than half of reporting jurisdictions (57) publish information on the policy objectives for most of their TE provisions, even when including general statements on policy objectives. In total, 25,994 TE provisions in the GTED (82 percent of all provisions) contain some sort of policy objective information. Due to the methodology change discussed before, this share increased drastically, from 38.7 percent in previous versions. Nonetheless, of these, only 7,215 provisions have an explicit and specific policy objective, while 18,779 provide only general information related to objectives. Furthermore, not all provisions with policy objective information also include revenue

Figure 2.6: Average revenue forgone on different policy objectives across all countries and by income groups



Note: For the share of total revenue forgone, we first calculated country averages across years and then the global or income group average across countries. All provisions that do not state a policy objective were excluded. Country income group classifications are based on the latest information by the World Bank.

forgone estimates. Overall, 69 percent of provisions in the GTED contain both revenue forgone data and at least some information on their policy objectives – 31 percent do not.

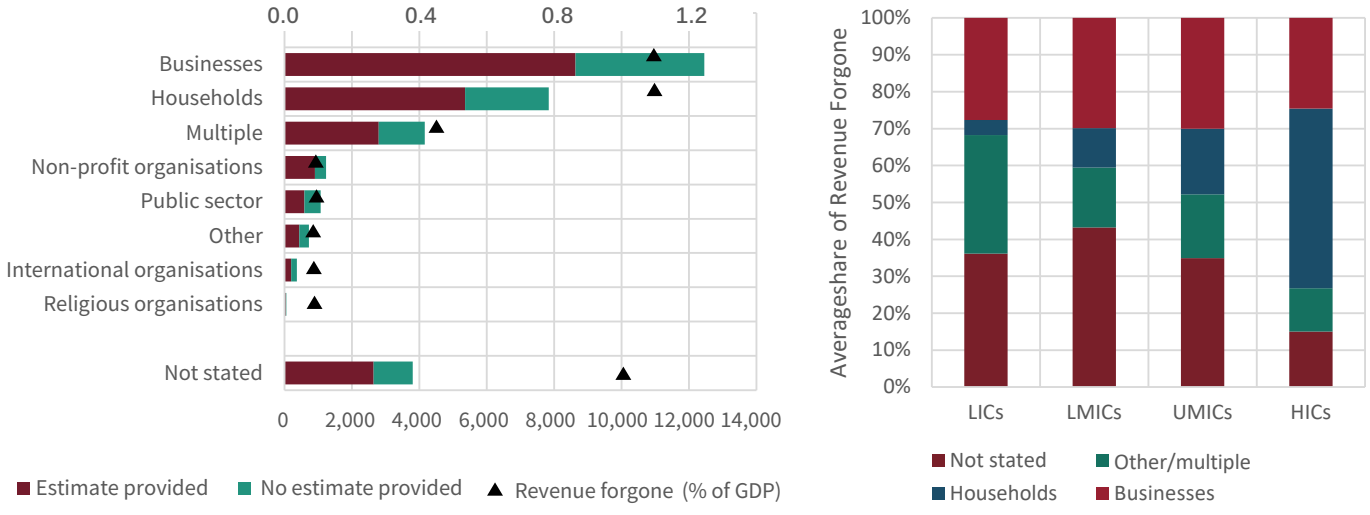
From the existing data, we can identify some trends related to policy objectives. Over time, the distribution of stated policy objectives has shifted in a way that reflects both improved reporting practices and evolving policy priorities (see Figure 2.6). Incentives aimed at promoting investment and growth have become increasingly prominent, particularly from the mid-2000s onward, when more and more low- and middle-income countries began to report. Objectives related to access to goods and services remain comparatively stable, while environmental protection objectives gain some visibility in more recent years. At the same time, the gradual decline in provisions classified under broad or indeterminate objectives suggests that countries are providing clearer statements of intent.

Across income groups, the distribution of policy objectives reflects varying policy priorities, as shown in Figure 2.6. Low-income countries concentrate a large share of their tax incentives on general investment promotion and on support for specific population groups or regions, consistent with efforts to expand basic economic opportunities. Lower-middle-income countries assign a comparatively large share of objectives to improving access to key goods and services, reflecting affordability and inclusion concerns. Upper-middle-income countries tend to use tax incentives in a more targeted way, often aiming to develop specific industries or priority sectors. In high-income countries, policy objectives are more evenly distributed across categories. The higher share of provisions classified under *"multiple"* or *"other"* in this group reflects the prevalence of socially oriented measures, such as childcare deductions or pension-related TEs, which do not fit neatly within the standard economic-objective categories.

The types and numbers of beneficiaries typically targeted by TE provisions

TEs differ substantially with regard to targeted beneficiaries. The GTED identifies six broad beneficiary groups, ranging from businesses and households to non-profit and public-sector entities. Some provisions

Figure 2.7: Number of provisions and revenue forgone by beneficiaries



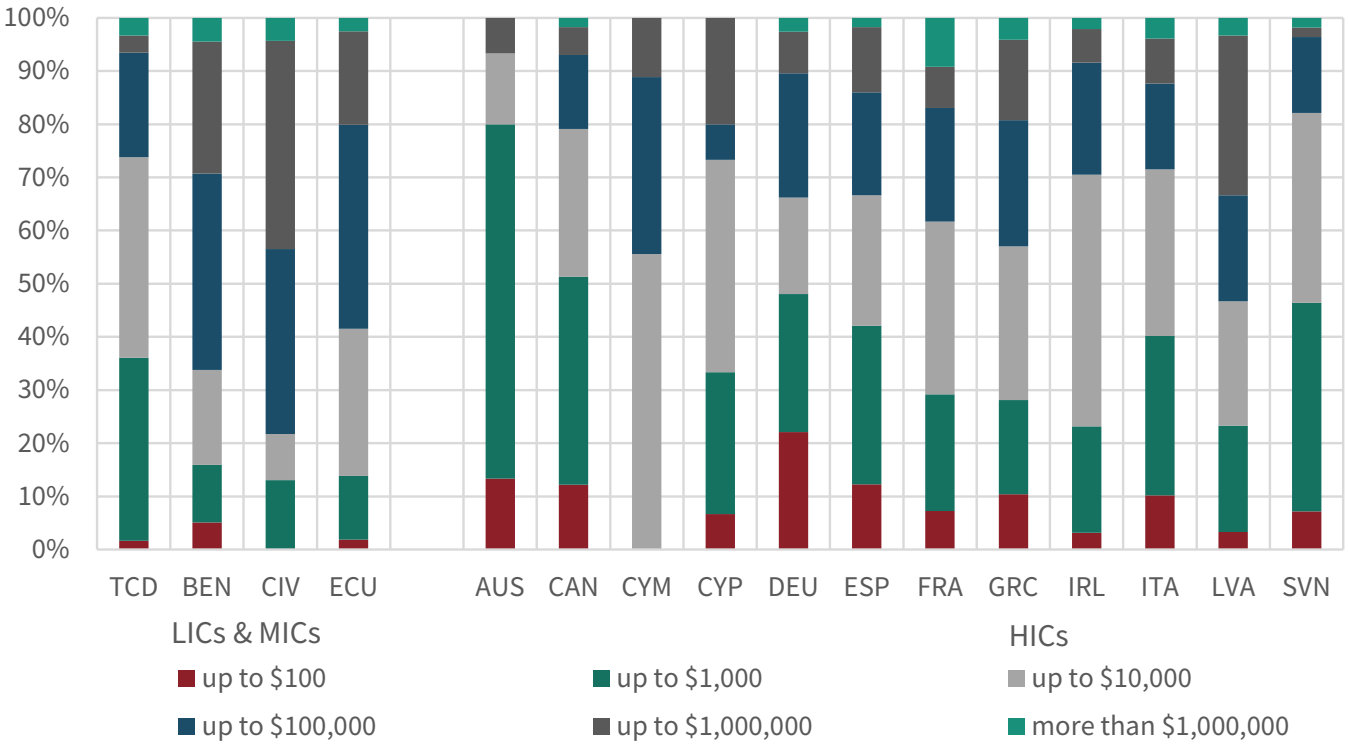
Note: For the share of total revenue forgone, we first calculated country averages across years and then the average across countries within each income group. Country income group classifications are based on the latest information by the World Bank.

are highly specific, with benefits restricted to individual firms, projects, or narrowly defined groups, while others have a broad and universal reach. For example, reduced VAT rates on basic goods such as food, medicines, or books benefit all consumers regardless of income or social status.

Ideally, each TE should include clear information on its intended beneficiaries, the number of recipients (whenever available and feasible), and the corresponding revenue forgone. As described earlier, however, only 65 countries provide information on the types of targeted beneficiaries while only 8 countries provide the number of beneficiaries for most of their provisions. The total share of provisions in the database with information on targeted beneficiaries is 59.7 percent while only 2,946 provisions (9.3 percent of all) have information on the number of beneficiaries.

Although businesses are targeted by a much larger number of TE provisions than households (over 50 percent more), the average share of revenue-forgone is identical for the two groups, with each amounting to around 1.13 percent of GDP (see Figure 2.7). This pattern may partly reflect the way these provisions are designed. Business-oriented incentives often target specific sectors, activities, or investment types, which leads to a larger number of relatively small measures, such as sector-specific rate reductions or R&D investment allowances. Household-oriented measures are fewer but tend to apply to broad segments of the population or large consumption bases, for example reduced VAT rates on essential goods, energy-efficiency credits, or education-related deductions. A closer look at the largest provisions in each country supports this interpretation, since household-oriented measures account for a larger share of the top ten TEs (41 percent) than business-oriented ones (33 percent). At the same time, reporting differences across income groups may also influence these averages, since high-income countries tend to report more complete data and allocate a larger share of their TEs to households.

Figure 2.8: Distribution of provisions by average size of relief per beneficiary (current USD)



Note: Only includes countries with number of beneficiary data for 50 percent or more of their revenue forgone. For each provision, the revenue forgone by beneficiary was calculated by averaging the five last years of data or fewer (if data was not available for five years). Country income group classifications are based on the latest information by the World Bank.

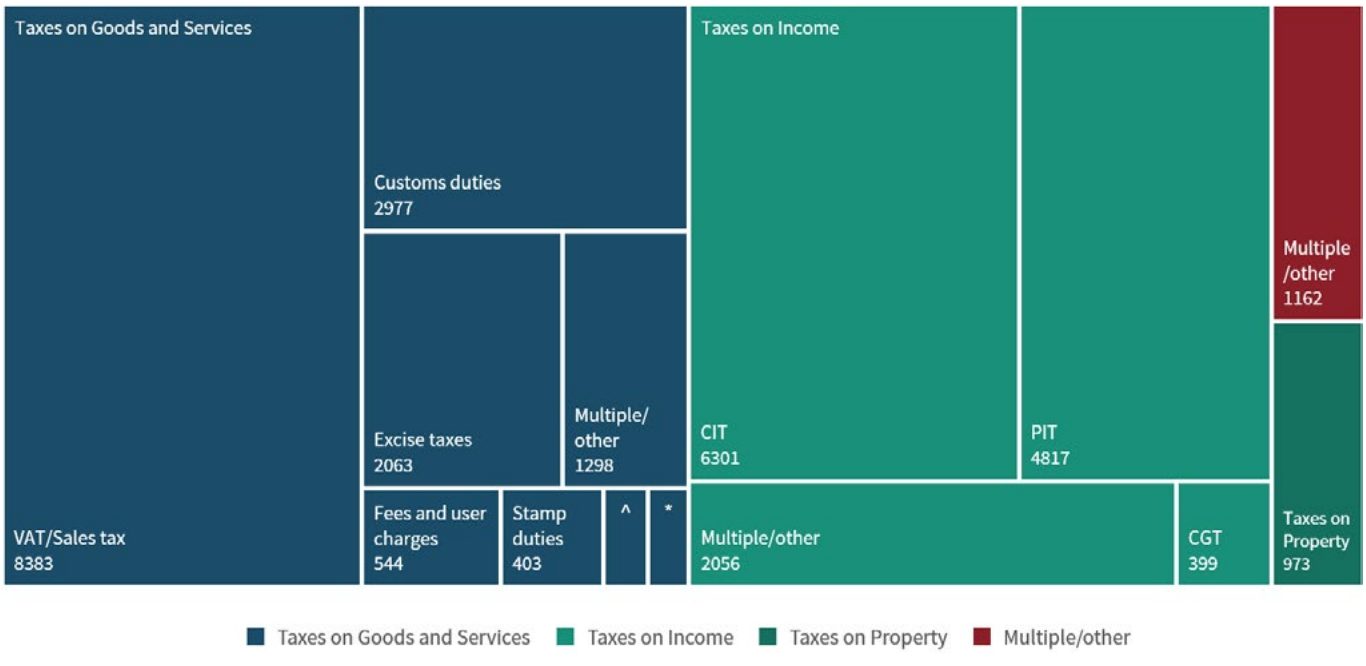
If we look deeper into the differences across income levels, a clearer pattern emerges. Most governments devote a broadly similar share of revenue forgone to business-related provisions, with only slightly higher shares in lower-middle-income and upper-middle-income countries. Low-income countries also have a comparatively large share of provisions that benefit both businesses and households, such as VAT or import-duty exemptions on widely used utilities or essential inputs.[5] By contrast, the differences become very pronounced for household-related measures. Upper-middle-income countries, and even more so high-income countries, channel a larger share of their revenue forgone to households, reflecting a wider range of personal and social tax provisions, which are largely absent in lower-middle-income countries and particularly rare in low-income countries.

Information on the number of beneficiaries confirms these patterns. Across all provisions with available data, the median revenue forgone per beneficiary is around 6,300 USD per year, but the distribution varies widely across income groups. In many high-income countries, a large share of provisions provide very small amounts per beneficiary, often around or below 1,000 USD per year. These are mostly PIT provisions, which typically deliver modest benefits but reach broad parts of the population through small credits, deductions, or narrowly defined exemptions. By contrast, in low- and middle-income countries, most provisions fall into higher per-beneficiary ranges, reflecting incentives that target relatively few firms or projects but offer substantially larger support.

Types of taxes

Information on the tax type from which a TE is granted is provided almost universally. Only 181 out of the 31,712 provisions in the GTED (0.6 percent) lack a clear tax-type classification. Slightly more than half of all provisions (50.4 percent) relate to taxes on goods and services, with VAT or sales TEs being the most common (26.4 percent), shown in Figure 2.9.

Figure 2.9: Number of provisions by tax type (1990-2023)



Note: Chart includes all provisions in the GTED, regardless of whether they are currently active. Provisions with unclear tax type included in the red "Multiple/Other" category. ^ = Financial Transaction Tax (174), * = Pollution taxes (162), CGT = Capital Gains Tax.

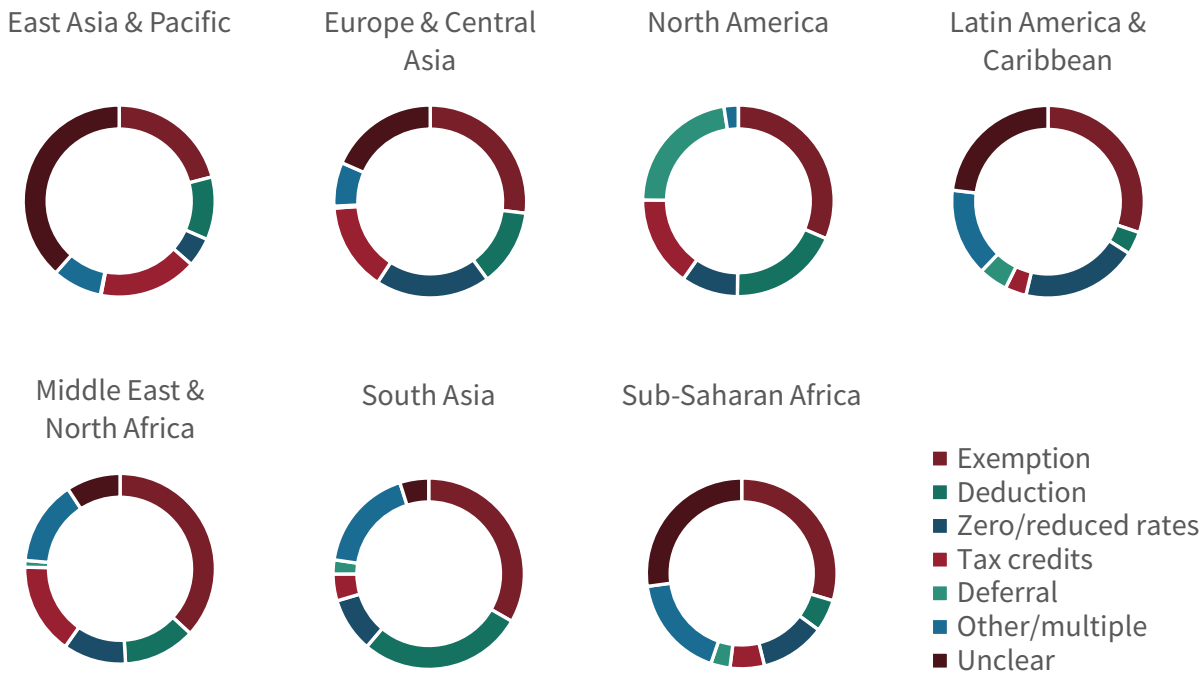
[5] See the chapter on targeting of VAT-related TEs authored by Alastair Thomas in this Flagship Report.

This is not surprising, as VAT reporting often disaggregates revenue forgone by individual goods or narrowly defined categories, such as basic food items, medicines, or education-related supplies.

Customs duties (9.4 percent) and excises (6.5 percent) also represent a notable share of provisions. Customs-related TEs are most frequently reported by low-income countries, where they account for roughly one third of all provisions (29.7 percent) and, on average, around one fifth of revenue forgone. They are also common in lower-middle-income countries, representing about 14 percent of provisions and roughly 18 percent of revenue forgone. This pattern partly reflects the fact that customs data are often digitized earlier than other tax data, making revenue-forgone estimates more straightforward to produce in many low-income and lower-middle-income countries. By contrast, customs-related TEs are far less prevalent in upper-middle-income countries, while European Union member states and most other high-income economies do not report customs-related TEs at all. EU member states participate in a customs union and apply a common external trade policy negotiated at the EU level. As a result, individual member states do not administer or report customs-related TEs.

Taxes on income account for 42.8 percent of all provisions. Within this category, CIT incentives are the most common, representing 19.9 percent of all provisions and appearing across all income groups. Personal income tax (PIT) provisions are also widespread (15.2 percent), though they are far more prevalent in upper-middle-income and high-income countries, where a broader range of PIT-based social and personal tax benefits are typically reported. In high-income countries, PIT-related TEs account for nearly one third of all provisions and of revenue forgone, on average. By contrast, they constitute only around 1 percent of provisions in low-income countries and 5 percent in lower-middle-income countries, with correspondingly small shares of revenue forgone. These differences partly reflect struc-

Figure 2.10: Average revenue forgone in each region by TE type (2019-2023)



Note: For the share of total revenue forgone, we first calculated country averages across years and then the average across countries within each region. Regional classifications are based on the latest information by the World Bank.

tural variation in tax systems across income groups. Upper-middle-income and high-income countries rely more heavily on revenue from taxes on income (households in particular) and profits than lower-income countries, which is also consistent with findings of countries' tax structure changing with higher income levels (Abdel-Kader and De Mooij, 2020; Mansour et al., 2025).

Types of TE mechanisms

At a global level, exemptions remain the most widely used preferential treatment, appearing prominently in every region and income group. Their prevalence reflects their simplicity to administer and their ease of communication to taxpayers, even though they may come with weak targeting and potential deadweight losses.

Beyond this common baseline, the composition of TE types varies substantially across regions (Figure 2.10). Tax credits, for example, are heavily concentrated in East Asia & the Pacific, Europe & Central Asia, North America, and parts of Middle East & North Africa. These instruments are almost entirely absent in low-income regions, where administrative capacity constraints and weak taxpayer filing systems make credit-based mechanisms harder to implement. Deductions are widely used in South Asia, Europe & Central Asia, North America and Middle East & North Africa, but play a smaller role elsewhere. The high share in South Asia is driven largely by India, which reports a substantial number of personal and corporate income tax deductions.

Several regions, including sub-Saharan Africa, South Asia, Latin America & the Caribbean, and Middle East & North Africa, report relatively large numbers of provisions classified as "multiple." These typically combine more than one preferential mechanism within a single measure, such as offering a full exemption for a limited number of years followed by a reduced rate thereafter. Such combinations are common in investment promotion regimes and often provide relatively generous support over long durations.

Deferrals, in contrast, stand out as a regionally isolated phenomenon. They are found almost exclusively in North America, where temporary postponement of tax liabilities is used both for investment-related incentives and sector-specific support, especially in the United States and Canada. No other region reports deferrals at any meaningful scale.

Finally, the share of provisions classified as "unclear" remains relatively high in some regions, especially in East Asia and the Pacific and Sub-Saharan Africa. This reflects gaps in the way TE types are described in official reports and points to an area where reporting practices could improve.

2.5 Conclusions

The GTED continues to broaden its coverage while adding value to the information reported by governments. With coverage now spanning 57 percent of jurisdictions, about 70 percent of the world's population, and roughly 75 percent of global GDP, the GTED offers an increasingly comprehensive view of global TE practices. Recent methodological improvements further enhance the analytical value of the dataset.

Despite this progress, reporting remains uneven across countries. Many jurisdictions still do not publish essential contextual information such as policy objectives, targeted beneficiaries, the number of recipients, or the legal basis for each provision. Others continue to provide only partial coverage of taxes or rely solely on aggregated cost estimates. These gaps limit the ability of policymakers and researchers to fully understand the purpose, distributional implications, and effectiveness of TEs.

The expanded provision-level data highlight two important features of TE regimes worldwide. First, revenue forgone is heavily concentrated in a small number of large provisions: on average, the top ten account for almost three quarters of total cost, and in some countries more than 90 percent. Second, many TE regimes also include a long tail of very small, highly targeted provisions, some benefiting only a handful of taxpayers. Evaluating both kinds of provisions is crucial: large provisions determine the overall fiscal cost, while narrowly targeted measures raise questions about complexity, fairness, and the risk of selective treatment.

As countries strengthen their reporting practices, the GTED provides a useful foundation for building more transparent and evidence-based TE regimes. Governments can make significant progress by publishing comprehensive inventories, stating clear policy objectives, identifying beneficiaries, and documenting the evolution of each measure over time. Ultimately, transparency needs to be complemented by systematic evaluations, beginning with the largest provisions but extending to the full inventory, to ensure that TEs support national priorities effectively, efficiently, and equitably.

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3

KEY FINDINGS FROM THE GLOBAL TAX EXPENDITURES TRANSPARENCY INDEX (GTETI)

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3.1 Introduction

The Global Tax Expenditures Transparency Index (GTETI) is the first comparative assessment of tax expenditure (TE) reporting that covers countries worldwide, providing a systematic framework to rank countries according to the regularity, quality and scope of their TE reports. The present chapter presents statistical analysis of the newly released GTETI v2.0, which assesses TE reports published by governments worldwide up to December 2024, with insights on the evolution in TE reporting practices since December 2022, when the GTETI v1.1 was published.

After the launch of the first version of the GTETI in October 2023, the implementation of enhanced data verification mechanisms resulted in a revised version with the same TE report coverage (up to December 2022), published in December 2024 (v1.1). In-depth data review, follow-up interactions with government authorities, and ongoing efforts to fairly represent the multiple forms of TE reporting under a shared standard, have further contributed to the development of the latest edition of the GTETI (v2.0).

The new version of the GTETI reveals encouraging developments: Not only has the number of assessed countries grown from 105 to 116, but also have TE reporting practices improved on average, from 45.5 in 2022 to 46.9 in 2025. In fact, some of the 11 newly assessed countries present more comprehensive and detailed information than the median country of the previous version. Nicaragua and Ghana are cases in point. Several countries have considerably improved their reports compared to the previous version of the GTETI. The Democratic Republic of Congo, for instance, increased its overall GTETI score by 28.3 points (over the maximum possible of 100 points). Australia, Burkina Faso, Chile, Madagascar, and Russia are among those that increased scores by ca. 10 points. Also, we observe that the 16 low income jurisdictions in the sample present substantial improvements in their reporting practices, with average increases of 6.1 points.

Beyond global and regional statistics, the GTETI provides a wealth of country-specific information on each jurisdiction's TE reporting practices. Through standardised supporting documentation enriched with comments and sources, the GTETI hosts valuable meta-data, which is fully (and freely) available online. Moreover, the GTETI assessment provides opportunities to exchange with governments on their TE reporting practices, either through written feedback on country data shared with governments or through online meetings and country-specific workshops.

The structure of this chapter is as follows. Section 3.2 provides an overview of the methodology, and a brief discussion of the changes introduced in GTETI v2.0. Section 3.3 presents the main findings in terms of overall scores, Section 3.4 provides statistical insights on the five dimensions of the index and Section 3.5 concludes with policy implications emanating from the GTETI results.

3.2 The GTETI at a glance

The GTETI assesses countries along five dimensions that provide a comprehensive and detailed picture of the quality and scope of TE reporting: (1) *Public Availability*, (2) *Institutional Framework*, (3) *Methodology and Scope*, (4) *Descriptive TE Data*, and (5) *TE Assessment*. Each dimension, in turn, is made up of 5 indicators.[6]

The index is based on the latest available TE report issued by each country, and it follows a normative approach. The way relevant information on TEs is reported can be assessed objectively, making it possible to score countries' performance in this area. Against this background, it is important to highlight that the GTETI does not score countries according to the amount of revenue forgone they report, nor the quality of the TEs used, but only according to the quality and scope of their TE reporting practices, measured against what can be considered an ideal TE report.

[6] Throughout this chapter, the terms "countries," and "jurisdictions," are used interchangeably for simplicity. Their use does not imply any position on the legal status or diplomatic recognition of any territory. For a more detailed discussion of the GTETI structure that make up the index, the methodology and assumptions underpinning the GTETI assessment process, see Redonda et al. (2025a).

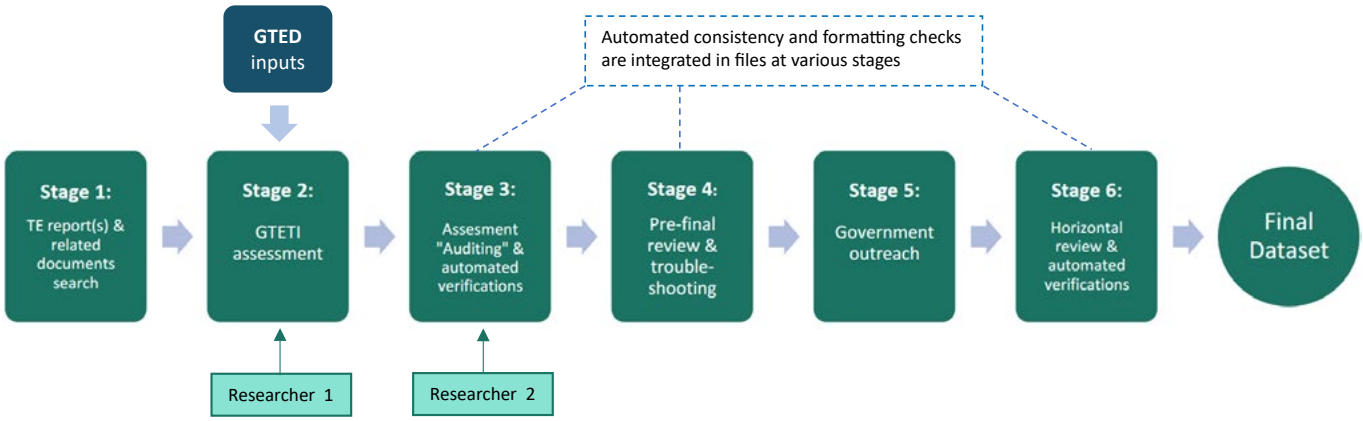
Box 3.1 Methodological changes introduced in the GTETI v2.0

- **TE report dates (Indicator 1.1):** Publication dates are not only important to show compliance with periodic publication requirements, but also to keep track of different versions of reports with the same or similar fiscal year coverage. Undated TE reports are now downgraded by 1 scoring level.
- **Structural tax provisions (Indicator 3.3):** Given that the concept of structural tax provisions can be reflected in TE reports in very different ways, we introduce a minimal scoring option for countries that distinguish, define or acknowledge a category of preferential tax provisions that are not considered TEs. In addition, we include a criterion that checks whether there are indications that not all structural reliefs are reported.
- **TE evaluation (Indicator 5.5):** The indicator was recalibrated to better distinguish different types of TE evaluations, and capture differences in performance across jurisdictions.

The overall score is based on the assessment of 25 individual indicators covering five dimensions. Most of the indicators use a four-point 'ABCD' scale according to their specific scoring criteria, discussed in the updated GTETI Companion Paper (Redonda et al., 2025a). Yet, in some cases indicators may be based on a three-point scale ("Yes/Partly/No" questions), or on more fine-grained scales with up to six values. Once all indicators are independently assessed, their individual scores are converted into a numerical scale with a maximum score of 4 for each indicator. As each dimension consists of 5 indicators, dimensions can have a maximum score of 20. The GTETI is based on a full equal weighting approach regarding indicators as well as dimensions. Hence, the final overall GTETI score ranges from 0 (worst possible score) to 100 (best possible score).

Every jurisdiction is assessed based on a process that involves several stages of data collection and internal review, before reaching out to governments (Figure 3.1). Compared to the previous edition of the GTETI, the assessment was streamlined by introducing a two-phase process where the second researcher directly "audits" the assessment of the first researcher (Stages 2 and 3). The audit stage builds on the assessment of the first researcher and resolves any inconsistencies flagged, using automated verification embedded in audit files. Following an additional step of troubleshoo-

Figure 3.1: The GTETI multi-stage assessment process



Source: Redonda et al., 2025a.

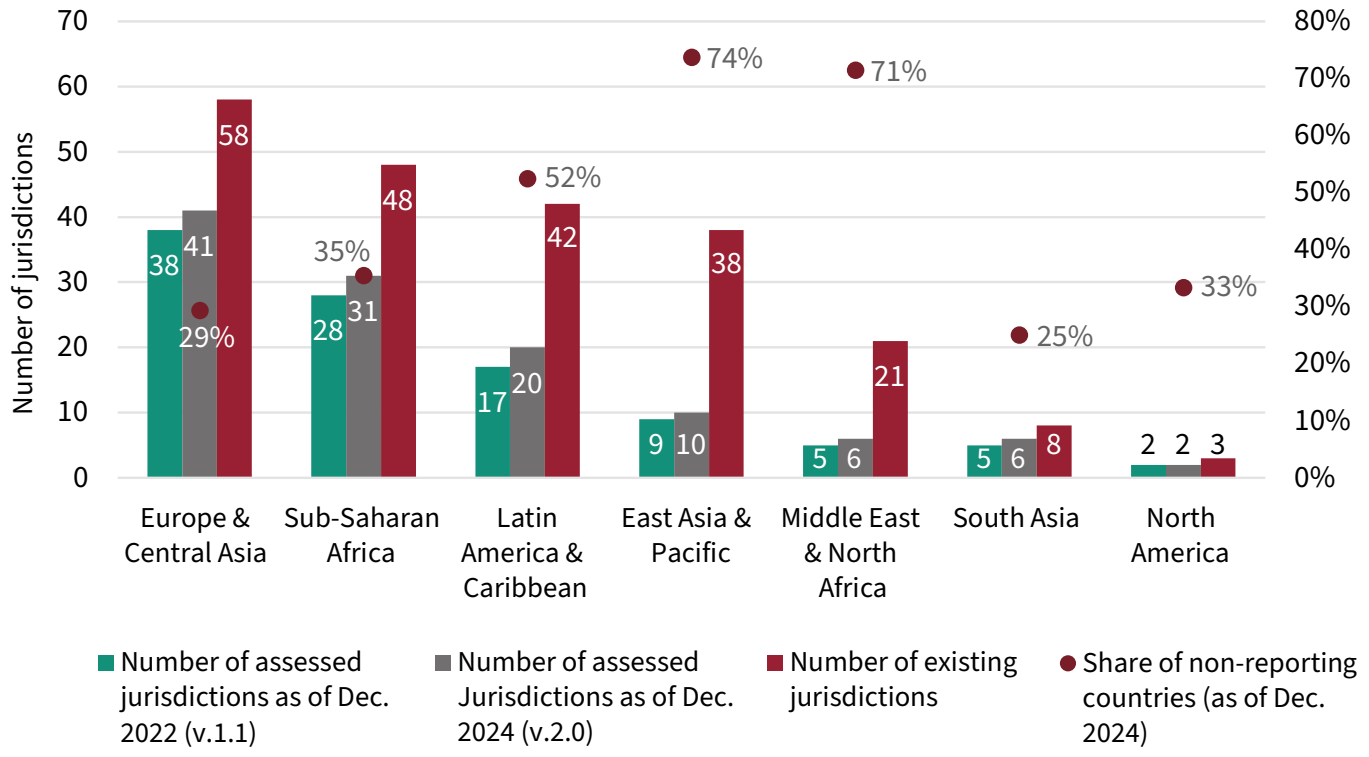
ting and formatting (Stage 4), GTETI assessments are shared with the respective governments for feedback (Stage 5). A final horizontal review allows to review score changes by indicator, introducing any relevant adjustments from government feedback, and ensuring fairness and consistency across each indicator and answer choices (Stage 6).

3.3 Main findings from the GTETI v2.0

Only countries that have issued at least one TE report over the last ten years are assessed in the GTETI (Redonda, et al., 2025a). Hence, this version of the GTETI includes countries that have released at least one TE report between January 1st 2015 and December 31st 2024. Consequently, it covers 116 out of 218 jurisdictions identified by the World Bank, just like the Global Tax Expenditures Database (GTED).

The share of non-reporting countries by region is shown in Figure 3.2 (right axis). The left axis of the figure shows the number of existing jurisdictions as well as the number of assessed countries in the GTETI versions v1.1 and the current one (v2.0). Framed positively, South Asia emerges as the region with the highest percentage of assessed countries (75 percent), up to a certain extent explained by the small sample of only eight countries – Afghanistan and Nepal being the only two non-assessed country in this group. Europe & Central Asia, North America, and Sub-Saharan Africa also show high shares of assessed countries with 71 percent (41 out of 58 countries), 67 percent (2 out of 3), and 65 percent (31 out of 48, respectively. The lowest shares are observed in East Asia & Pacific and Middle East & North Africa, with 26 percent and 29 percent, respectively. Latin America & Caribbean lies in the middle with 48 percent of assessed countries.

Figure 3.2: Existing and assessed countries & share of non-reporting countries, by region



Source: Authors' calculations based on the GTETI v2.0.

3.3.1 Overall GTETI scores – key developments

The average overall GTETI score based on the 116 assessed countries stands at 46.9 out of 100, which provides a first indication of the poor quality of worldwide TE reporting. This average improved by 1.3 points between 2022 and 2024. Adding non-reporting countries (N=218) lowers the global average score to 25.0 out of 100, a 3 points improvement compared to the last edition. The ranking of countries based on the overall GTETI score can be found on the GTETI website, and is also shown in the appendix of this chapter.

The global Top 10 has changed in the new GTETI version, with two new countries joining the list: Australia and Russia. This shift reflects substantial improvement in their TE reporting. Australia's score increases by 12.5 points, with notable developments in Indicator 1.4 Online Accessibility, including the publication of TE information in data analysis format (e.g. .xls, .csv etc.); Indicator 2.4 regarding the integration of TE information within the Executive Budget Project (Open Budget Survey, 2023, Q.45); and Indicator 5.5, adding several TE evaluations to the last two TE reports (up to December 2024). Russia's score rises by 10.6 points, by implementing a TE report repository where key documentation is made available, for instance the benchmark tax system (BTS), revenue forgone estimation methods, and even a few TE evaluations (Indicator 5.5). Updates in Open Budget Survey (OBS) 2023 data also contributed to a 4 point increase in indicator 2.4 Budget Cycle Integration, accounting for more than a third of the country's score increase.

In the new Top 30, four African countries show significant progress in TE reporting: Guinea (#20), Mauritania (#21), Niger (#23) and Burkina Faso (#28). Together with Benin, which ranks 9th globally and 1st in the African continent, five Sub-Saharan countries now appear in the Top 30, three of them members of the West African Economic and Monetary Union (WAEMU) (Benin, Burkina Faso, and Niger). Also, in terms of country income groups, the new Top 15 include three "upper-middle income" countries: Ecuador (#14), Brazil (#10), and Indonesia (#2), who keeps the second position in the ranking, only outperformed by South Korea.

Table 3.1 shows the variation across income groups between the previous and current versions of the GTETI. Interestingly, the most significant positive changes can be observed in the group of LICs. There are several possible explanations for this pattern. One is that many countries in this income group ranked relatively low in the previous edition of the GTETI and therefore had more room for improvement than those already scoring highly. At the same time, it also reflects a posi-

Table 3.1: Changes in GTETI performance, across income groups

Income group	Changes in number of assessed countries	Changes in share of assessed countries	Average score change (assessed countries)
High income	+2	+2%	+1.10
Upper middle income	+1	+2%	+0.60
Lower middle income	+6	+12%	+0.68
Low income	+2	+7%	+6.15
Total	+11	+10%	+1.27

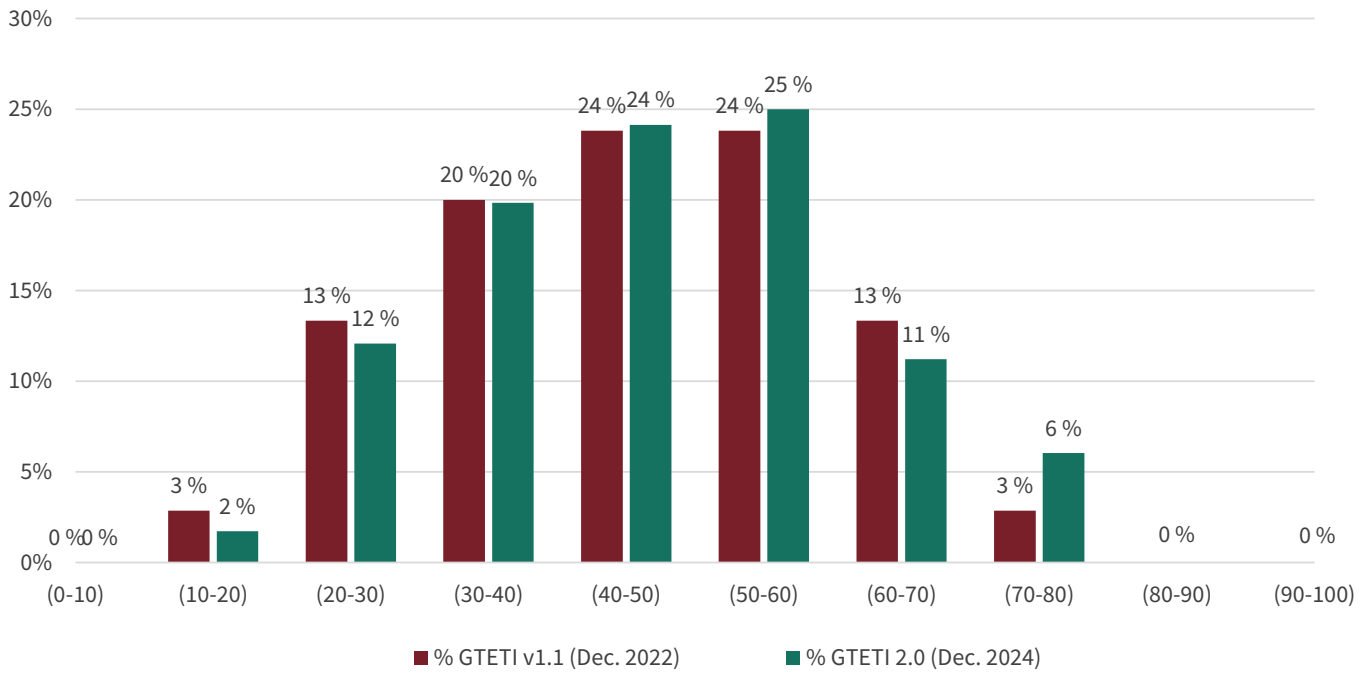
Source: Authors' calculations, based on the GTETI v1.1 and GTETI v2.0

tive development: across LICs, greater effort appears to have been directed toward strengthening TE reporting practices.

Accross regions, North America (65.7), East Asia & Pacific (49.7), Latin America & Caribbean (49.6), and Europe & Central Asia (48.3) have average scores above the global average. The average for Sub-Saharan Africa (44.6) is close to the global average. South Asia (36.6) and Middle-East & North Africa (39.8) score below average. It is fair to say that most regions score relatively close to the worldwide average, implying that cross-country variation is not driven by regional differences. It should also be noted that three of the regions (North America, South Asia and Middle East & North Africa) only comprise between 2 and 6 assessed countries each. In these cases, regional scores can be strongly influenced by the performance of individual countries. In particular, North America is constituted by Bermuda, Canada and the United States. The latter two jurisdictions publish relatively comprehensive reports, while Bermuda is a non-reporting country.

Figure 3.3 shows the GTETI score distribution for the GTETI v1.1 and v.2.0. As in the previous edition, no country achieves a score above 80 – not even the five top performers South Korea, Indonesia, Australia, Netherlands, and Germany. This indicates that even among best performing countries, there is significant room for improvement regarding TE reporting. The distribution of countries according to score brackets follows roughly a normal distribution shape, although slightly skewed to the left. With respect to the GTETI v1.1, we observe that the brackets (10-20) and (20-30) have lower incidence in GTETI v2.0, decreasing by about 1% each. In contrast, brackets (50-60) and (70-80) increased their overall relative weight by 4%. Score brackets (40-50) and (50-60) now gather close to 50% of assessed jurisdictions slightly above the GTETI v1.1.

Figure 3.3: Overall GTETI score distribution by score brackets



Source: Authors' calculations based on Redonda et al. (2025b)

It goes without saying that the picture is significantly bleaker if non-assessed countries are included in the analysis. If we assigned a GTETI score of 0 to all 102 non-assessed countries, the share of countries scoring 30 or less would be as high as 54 percent and the share of countries scoring 70 or more, would only be 3 percent.

3.3.2 Analysis by dimension

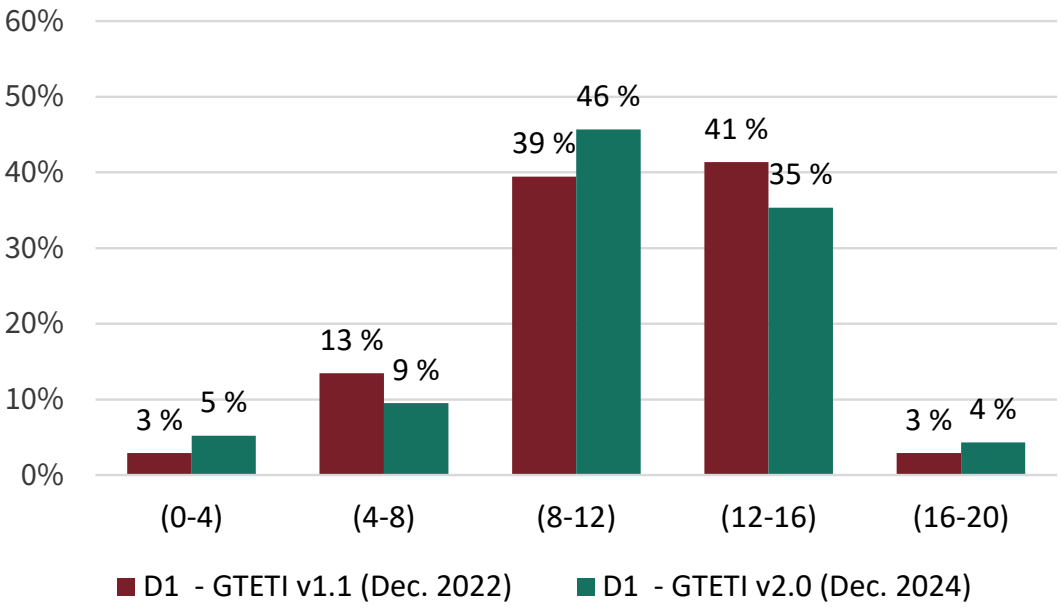
The performance across countries and dimensions varies substantially. For this edition of the GTETI, we introduce new website functionalities to enhance understanding of nuances in different dimensions. The dashboards by dimension now provide a simple way to explore scores in each of the 5 dimensions: (D1) *Public Availability*, (D2) *Institutional Framework*, (D3) *Methodology and Scope*, (D4) *Descriptive TE Sata,* and (D5) *TE Assessment*. In this section, we present an overview with statistical highlights based on the GTETI v2.0, and insights on changes since the last edition.

Public availability

Dimension 1 assesses the availability of TE reports. The first two indicators deal with the frequency, regularity and timeliness of TE reporting.[7] TE reports should be available to the public and understandable by all stakeholders and the public in general. Indicators 1.3 *Visibility*, 1.4 *Online Accessibility* and 1.5 *Reader-friendliness* tackle these issues.

Together with dimension D2 (see below), D1 has the highest assessed average across dimensions – close to 11 out of 20. Compared to the previous version, we observe a higher concentration in the (8-12) score bracket, with an increase of 7 percentage points over the GTETI v1.1. However, the relative share of the other two score brackets in the middle of the distribution – (4-8) and (12-16) – decreased, with incidence going down by 4 and 6 percentage points, respectively. Higher performance is found in Indicators 1.1 *Frequency and Regularity*, and 1.2 *Visibility*; showing a relatively more diligent

Figure 3.4: D1. Public Availability. Score distribution by score brackets



Source: Authors' calculations based on the GTETI v1.1 and the GTETI v2.0.

[7] The full list of indicators, a detailed description and a discussion of the different technical issues that some of them face can be found in Redonda et al. (2025a), as well as on the GTETI website (www.gteti.taxexpenditures.org).

work in regularly publishing TE reports and promoting visibility through repositories and press releases, than in the facilitation of online access and reader-friendliness of TE report.

With regard to Indicator 1.1 on *Frequency and Regularity*, analysis reveals that 92 percent of countries rely on an annual publication schedule and yet, only 55 percent of those countries follow a fully regular pattern. Indeed, 22 percent of countries publish "generally regularly" (i.e., they have missed one expected publication in the January 2015 to December 2024 assessment period, a 3 percent increase with respect to GTETI v1.1. More worryingly, 24 percent of countries report irregularly, missing two or more expected publications in the considered period.

As mentioned above, we introduce a minor change in this indicator for the GTETI v2.0, where countries with undated reports are downgraded by one scoring level (e.g., from A to B, from B to C etc.). We find that 28 percent of TE reports are undated, triggering score reductions in 35 countries.

Indicator 1.2 *Timeliness* shows little change since last GTETI edition, with 72 percent of countries providing revenue forgone data for the fiscal year immediately preceding publication, and 15 percent only providing data for the year before. For 13 percent of countries, we consider that TE data contained in the report is problematically untimely, making it more difficult for policymakers to access relevant data.

Indicator 1.3 *Visibility* shows that only 11 percent of countries issue official press releases mentioning the latest TE report, but less than two thirds operate repositories where all historical TE reports are made available.

Indicator 1.4 *Online accessibility* shows that although 87 percent of assessed countries provide access to the latest TE report within 5 clicks on the home website, only 48 percent allow for the report to be found by searching the official local language expression for "tax expenditure". Importantly, the number of countries that publish report information in data analysis format (.xls, .csv, etc.) stays below 20 percent.

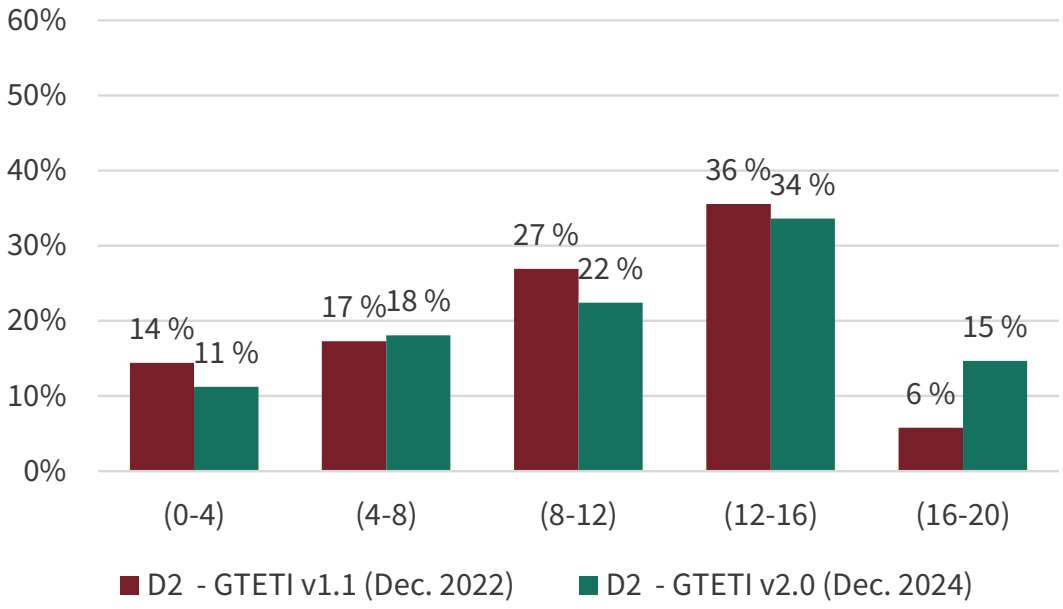
Finally, findings for Indicator 1.5 *Reader-friendliness* show that 6 percent of countries still publish unconsolidated TE reports, often as a result of fragmented TE administration and reporting mandates, where different ministries or institutions are in charge of certain types of TEs. In the GTETI v2.0 edition, we put particular efforts in identifying the basic features of a report summary, looking for narrative formats, as well as some overall metrics or numerical highlights. As a result of this tightening of assessment standards, we find that only 60 percent of TE reports present a summary. Moreover, 32 percent do not systematically explain the acronyms used in the TE report. Finally, only 5 countries (4 percent) where found to publish the TE report (or a version of it) in a format that is friendly to visually impaired individuals: Canada, Croatia, Netherlands, Norway, and the United Kingdom.

Institutional framework

Dimension 2 analyses the institutional framework behind TE reporting. The first two indicators consider the legal requirement to report on TEs. Indicator 2.1 assesses if the requirement clearly states the frequency and timing of reporting, and Indicator 2.2 assesses if the legal requirement also calls for the TE report to be submitted to the parliament. The remaining indicators assess the reporting responsibility (2.3), the integration into the budget cycle (2.4), and the integration into the Medium-Term Strategy (2.5).

The distribution of D2 is heavily concentrated in the middle score brackets, with 74 percent of countries achieving mid-range results (Figure 3.5). At the lower end, 11 percent of countries fall within the (0–4) bracket—a decrease of 3 percentage points compared to the GTETI v1.1. Conversely, 15 percent of countries are in the highest bracket (16–20), up by 9 percentage points since the previous edition of the index. The largest share, 34 percent, lies in the 12–16 bracket, indicating that there remains significant scope to strengthen the institutional frameworks in the field, even among relatively high-performing countries.

Figure 3.5: D2. Institutional Framework. Score distribution by score brackets



Source: Authors' calculations based on the GTETI v1.1 and the GTETI v2.0.

Indicator 2.1, which assesses the existence of a legal requirement to report on TEs, shows steady progress toward institutionalizing such obligations. Currently, 69 percent of countries have established a legal provision mandating periodic TE reporting, up from 67 percent in the previous edition. However, the mere existence of a legal requirement does not necessarily ensure compliance. When this information is contrasted with the median frequency of publication and the number of missed reports under Indicator 1.1, a significant enforcement gap emerges. Only 53 percent of countries with a legal requirement of periodic TE reporting have indeed reported regularly over the assessment timeframe (2015-2024). More worrisome, 23 percent of them have missed two or more expected publications. On the positive side, we observe that those countries that have a legal obligation to publicly report on TEs have, on average, 26 percent higher GTETI scores (considering all indicators except those covering the legal framework, 2.1, 2.2 and 2.3).

Indicator 2.2, assesses submission of the TE report to Parliament. We find that 60 percent of countries have a legal requirement to present the report to the national legislature. Meanwhile, 20 percent of countries rely on administrative practice, and 21 percent show no indication—either legal or in practice—of submitting the TE report to Parliament. As noted above, the existence of a legal requirement does not automatically translate into enforcement. Among the countries with a legal obligation to submit the report to Parliament, more than half still exhibit irregular publication frequency (indicator 1.1).

Indicator 2.3 maintains a similar pattern to the GTETI v1.1. Overall, 97 percent of countries indicate some form of reporting responsibility, either in the TE report itself or in their legal framework. Most countries specify this directly in the report (90 percent), and 60 percent specify reporting responsibilities in the law.

Overreliance on administrative practice or custom leaves TE reporting vulnerable to political discretion. A legal basis creates solid expectations and helps ensure that TE reporting does not depend on the goodwill of the heads of institutions tasked with assessing TEs. Indeed, if such institutions (usually the Ministry of Finance or the Tax Administration) stop reporting at the direction of a new government, then political parties or civil society organisations may be able to request the publication of the TE report through legal means (i.e. formal request, complaints, litigation etc.). Legal clarity on TE reporting strengthens administrative practice, and may act as a safeguard for responsible TE policy.

Indicators 2.4 (integration in the Executive Budget Proposal) and 2.5 (integration in the Medium-Term Fiscal Strategy, MTFS) reveal a different dimension of the institutional framework. While earlier indicators show overall positive trends in the legal embedding of TE reporting, the integration of TEs into broader fiscal policy instruments remains limited. About one third of countries make no reference to TEs in their MTFSs, and this figure rises to 36 percent in the Executive Budget Proposal. Among those that do, more than two thirds mention TEs only briefly in the Executive Budget Proposal, without including key elements such as policy objectives or estimates of revenue forgone. A similar pattern appears in the MTFSs, where 50 percent of countries refer to TEs, but omit core information. These patterns indicate a persistent disconnect between TE policymaking and overall fiscal planning, reflected in the weak integration of TE information into both annual budgets and medium-term frameworks.

Despite the broader scenario described above, MTFSs increasingly acknowledge the relevance of TEs for revenue and policy outcomes – 45 percent of countries have included guidelines regarding TE policy objectives or the evolution of revenue forgone, against 24 percent in GTETI v.1.1. MTFSs such as the ones from Ecuador, Ghana, and Italy, articulate objectives linked to economic diversification, industrial development, or environmental goals and, in some cases, propose reorganizing exemptions or reducing revenue forgone. This suggests progress in recognizing the role of TEs beyond annual budget cycles, but also highlights the need to formulate broader fiscal policy directions, integrating TEs in coherent medium-term plans.[8]

Methodology and scope

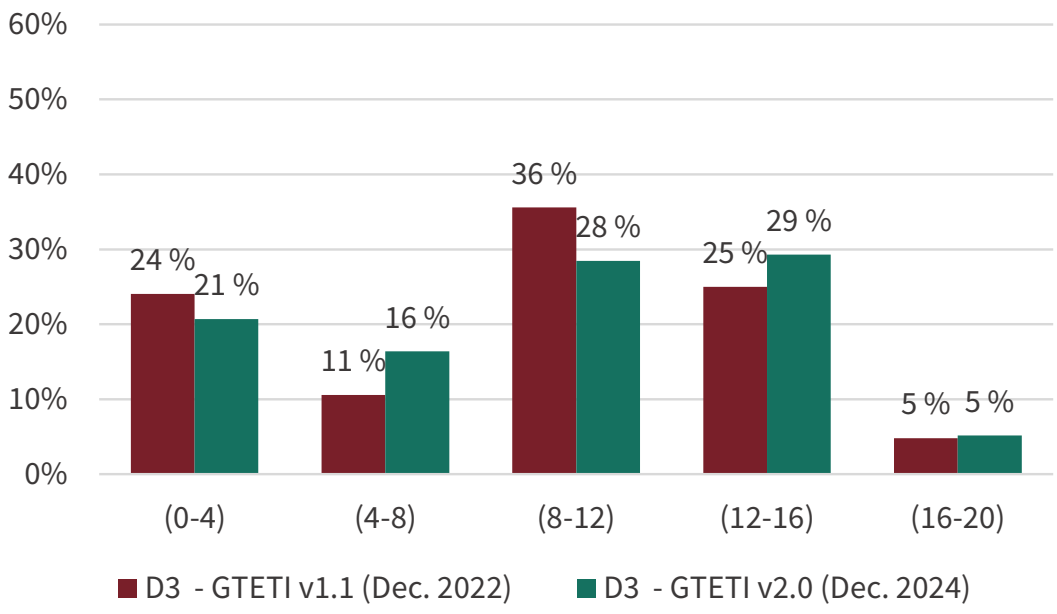
Dimension 3 assesses the methodology and scope of TE reporting. Indicator 3.1 *Information on TE Coverage* assesses the overall coverage in terms of the type of taxes existing in the country (at the national level only) that are included in the report. Indicator 3.2 *Tax Benchmark* assesses if a clear definition of the reference tax system is provided. Indicator 3.3 S*tructural Tax Provisions* captures if such tax measures that are integral parts of the tax system are reported. Indictors 3.4 *Revenue Forgone Estimation Method* and 3.5 *Data Sources* assess if the methods, assumptions and data sources used to compute the revenue forgone estimates are disclosed and discussed in detail.

The distribution of scores shows that important transparency gaps persist among reporting countries (Figure 3.6). 37 percent score in the lowest brackets, while only 5 percent reach the top (16–20). Most countries (57 percent) fall within the medium-high brackets (8–12) and (12-16). These patterns reveal substantial room for improvement in the disclosure of the methodology and scope of TE analyses. Very often, core elements—such as a clear discussion of the BTS, of the estimation methods used to compute revenue forgone, and well-specified data sources—remain absent or insufficiently detailed in TE reports.

Indicator 3.1 allows to clearly identify the taxes and provisions included in the TE report, which is essential to ensure that the assessment is comprehensive rather than selective. While two thirds of reports disclose

[8] It is worth noting that for Indicator 2.4, about 70 percent of observations are drawn from the Open Budget Survey (OBS). The GTET v2.0 edition relies on the OPS 2023 edition (see https://internationalbudget.org/open-budget-survey/open-budget-survey-2023, accessed 02 December 2025). In comparison with the OBS 2021 (used in GTETI v1.1), the OBS 2023 evaluations for the GTETI assessed countries increased, on average, by 23 percent.

Figure 3.6: D3. Methodology and Scope. Score distribution by score brackets



Source: Authors' calculations based on the GTETI v1.1 and the GTETI v2.0.

their coverage, the quality and clarity of this disclosure vary significantly. Only 15 percent of countries explicitly state that all existing TEs are covered, providing a comprehensive inventory even if not all TEs are costed. A larger group (67 percent) provides partial information, either through general statements (49 percent) or more specific descriptions (18 percent). A transparent coverage statement helps decision-makers identify whether major tax categories are being systematically excluded, revealing potential blind spots in redistribution, efficiency, and revenue impact and yet, 34 percent of countries do not disclose at all the report's coverage of existing TEs.

Moreover, for 45 percent of reporting countries, some type of taxes levied at the national level are not included in the TE report. This may result from political sensibilities of certain types of taxes (e.g. income taxes), administrative difficulties in assessing revenue forgone, or lack of inter-institutional cooperation (e.g. with relevant line ministries or customs authorities). Substantial gaps in TE reporting coverage undermine the policy relevance of publications, and may even mislead legislators and other stakeholders regarding the budgetary impact of certain TEs. Among the types of taxes most often disregarded in country reports (although existing at the national level), are property taxes (22 percent), excise taxes (20 percent), personal income taxes (16 percent) and customs taxes (14 percent).

Indicator 3.2 evaluates whether countries define the Benchmark Tax System (BTS), a core requirement for interpreting TE estimates since TEs are actually defined as deviations from the benchmark or reference tax system. A clear definition of the BTS is hence essential for establishing a baseline against which TEs can be identified and estimated. This has direct implications for policy effectiveness, the accuracy of fiscal cost estimates, and the ability to verify whether exceptions genuinely benefit their intended target groups. The definition of the BTS is often subject to political considerations or even arbitrary decisions, which reinforces the need for transparency: any decision on what constitutes the reference tax system necessarily affects the outcomes of TE reporting and, hence, TE policy-making.

Only 11 percent of countries specify the BTS at the provision-level (by individual TE provision), though this represents a 3-percentage-point increase since the previous edition. Benchmark information by tax type is provided by 52 percent of countries (a 3 percent increase). Quite critically, only 56 percent of TE reports account for international treaties, either integrated within the BTS or evaluated as TEs. Some countries consider international treaties such as the 1961 Vienna Convention on Diplomatic Relations as a source of TEs for foreign diplomats (e.g. Italy, Sierra Leone). In other cases, international trade agreements are presented as the source for customs duties revenue forgone (e.g. Bolivia). Tax treaties, however, are commonly integrated in the BTS, and revenue forgone usually not estimated. Occasionally though, certain countries do report revenue forgone stemming from bilateral tax treaties (e.g. Australia, Argentina, Bulgaria and Uruguay).

Indicator 3.3 assesses whether the report distinguishes TEs from structural tax provisions. This distinction is essential for technical accuracy and policy accountability: misclassification or silent disregard distorts perceptions of fiscal effort and can lead to misguided reforms. Yet, nearly half of the countries assessed in the GTETI do not define nor clearly distinguish preferential tax provisions that are not considered TEs. Only 4 percent of reporting countries provide detailed information regarding structural tax provisions, including classification criteria, list of provisions, and revenue forgone estimates. An additional 35 percent of countries establish general criteria to differentiate TEs from other categories of preferential tax provisions. 25 percent list provisions individually, and only 9 percent provide revenue forgone estimates. These low percentages reveal important gaps. Clarity in this differentiation has direct implications for the definition of the BTS and hence, of TE policy making: if the criteria for distinguishing structural measures from TEs are unclear, calculation of revenue forgone becomes opaque, insofar as the definition of the BTS is vulnerable to undisclosed discretionary choices.

Indicator 3.4 assesses whether the report states the methodology for estimating revenue forgone and whether it discloses the economic assumptions used for the calculation of backward- and forward-looking estimates. Overall, 76 percent of countries explain the method used (a 2-percentage-point increase since the previous edition). A comprehensive explanation of the revenue forgone calculation methodology also allows better evaluation of year-to-year changes in TE costs, which may derive from methodology changes or changes in underlying economic activity and thus, tax revenues associated with it. Opacity in revenue forgone calculation methodology can thus make it impossible to adequately interpret changes in TE costs. Furthermore, 54 percentage disclose the necessary economic assumptions. This is key as such assumptions directly influence how estimates are interpreted, affecting judgments about effectiveness, fiscal forecasting, and the extent to which losses may vary under different policy scenarios. Hidden assumptions can lead to over- or understating the fiscal impact of TEs.

Indicator 3.5 examines whether reports disclose the data sources used for TE estimates. In 22 percent of countries, data sources remain unknown. Another 58 percent disclose sources but inconsistently. Only 34 percent clearly identify data sources by type of tax, type of TE, or provision. The format in which sources are disclosed varies across countries. Most countries diclose the data source(s) in general terms (40 percent), while others provide them by type of tax (23 percent), or by provision (only 9 percent). For purposes of scoring, all disclosures are treated as equivalent, as long as the data source(s) used for the assessment of any TE provision are clear. Among the countries providing information on data sources (91 countries), insufficient or inconsistent specifications affect 74 percent of them, showing a major area for improvement. Disclosing data sources allows verification of estimates, identification of weaknesses, and opportunities for the improvement of data quality – increasing transparency and trust in TE reporting. When sources are opaque, fiscal estimates lose credibility and data quality problems may persist.

Descriptive TE data

Dimension 4 examines the information that accompanies revenue-forgone estimates in the TE report. Indicator 4.1 assesses if the policy objectives of tax expenditures are disclosed. Indicator 4.2 captures the extent to which reports specify the type of tax and the TE mechanism (such as deduction, credit, etc.). Indicator 4.3

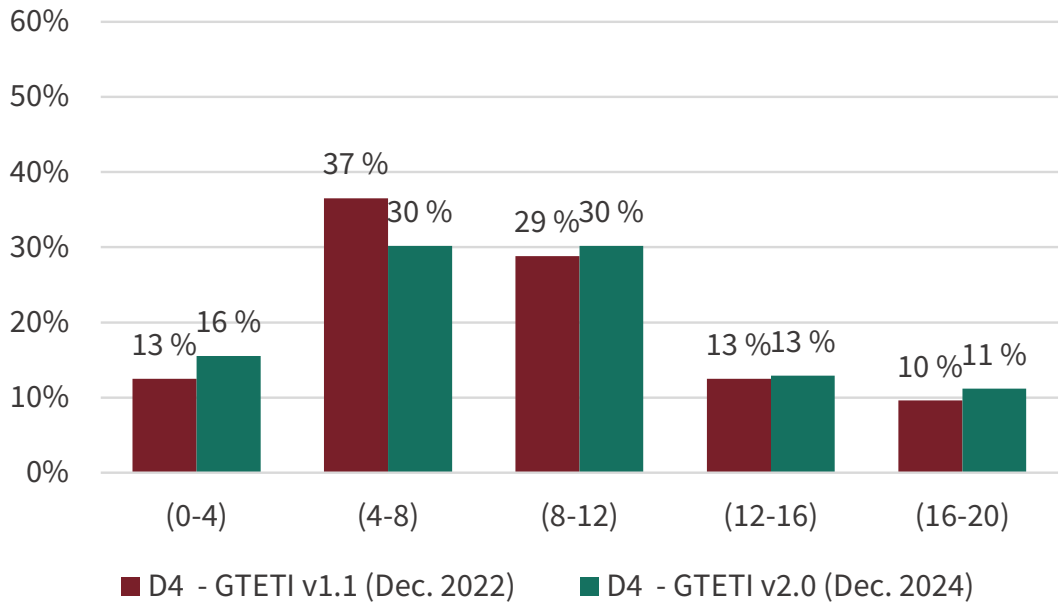
reviews if target groups and number of beneficiaries of TE's are reported. Indicator 4.4 examines whether the report discloses timeframes for the listed provisions. Finally, indicator 4.5 evaluates if legal references are shared in the report.

Figure 3.7 shows a concentration in the middle range, though skewed to the left. Whereas 16 percent of the countries score in the (0-4) bracket, only 11 percent fall in the top score bracket (16-20). Beyond reporting fiscal costs, this pattern highlights the need for countries to clarify why a provision exists, who are the inteded beneficiaries, how it operates, and under which legal authority.

The indicators in this section provide the foundation to evaluate if TEs are meeting their intended purpose and whether they are aligned with broader fiscal, social, and economic policy frameworks.Indicator 4.1 on policy objectives and Indicator 4.3 on beneficiary target groups are central to understanding whether TE policies produce their intended effects. Since the previous edition, there has been substantial improvement in the disclosure of policy objectives (Indicator 4.1). Overall, 67 percent of countries disclose at least some provision-specific objectives—up from 50 percent in the GTETI v1.1. For Indicator 4.3, although progress is uneven, 23 percent of countries systematically identify target groups (a 2-percent decline), and another 57 percent disclose some information (a 9-point improvement), but lack systematic reporting. Though nuanced, there is an overall improvement for these indicators. Despite these advances, 13 percent of countries provide no information on policy objectives, and up to 20 percent offer no information on beneficiary target groups. In contrast, only 25 percent of countries present policy objectives for all TEs, and no country discloses the number of beneficiaries in all cases.

In this context, clear legal references and information on the timeframes for each TE become essential mechanisms to prevent ambiguity and reinforce ac-

Figure 3.7: D4. Descriptive TE Data. Score distribution by score brackets



Source: Authors' calculations based on the GTETI v1.1 and the GTETI v2.0.

countability. While underlying laws can be accessible through other channels, TE reports can consolidate and facilitate access to this information. Currently, 62 percent of countries provide specific legal references at the TE provision level (Indicator 4.5), yet 16 percent still provide no indication of the legal basis for the TEs they report. This limits the ability – particularly of non-experts – to scrutinize reported information. Legal references enhance verifiability of published information on TEs and are vital to allow informed policy debates around TE reform.

Timeframe disclosure (Indicator 4.4) is closely linked to legal references, as sunset clauses are usually embedded in legal instruments. However, only 15 percent of countries systematically disclose timeframes, whereas 29 percent provide partial information in this regard, and more than half of all countries provide no timeframe information at all. Concise and systematic reporting on legal bases enhances TE documentation usefulness.

At a broader level, Indicator 4.2 assesses whether TE reports disclose information on the type(s) of tax(es) and TE mechanism(s). Overall, 93 percent of countries identify the tax type (with another 4 percent doing so inconsistently), suggesting that the basic mapping of TEs within the tax system is broadly established—although, as Indicator 3.1 shows, 45 percent of countries still omit certain taxes from their reports. More positively, 60 percent provide systematic information on the mechanisms used across TEs. This is a significant strength, as identifying mechanisms is essential for cost comparability, behavioral analysis, and policy design. Nevertheless, 40 percent still fail to state mechanisms, or do so inconsistently. Missing data limits the ability to detect overlaps, cumulative subsidies, or conflicting policies. It also hinders accurate TE classification relative to the BTS.

TE assessment

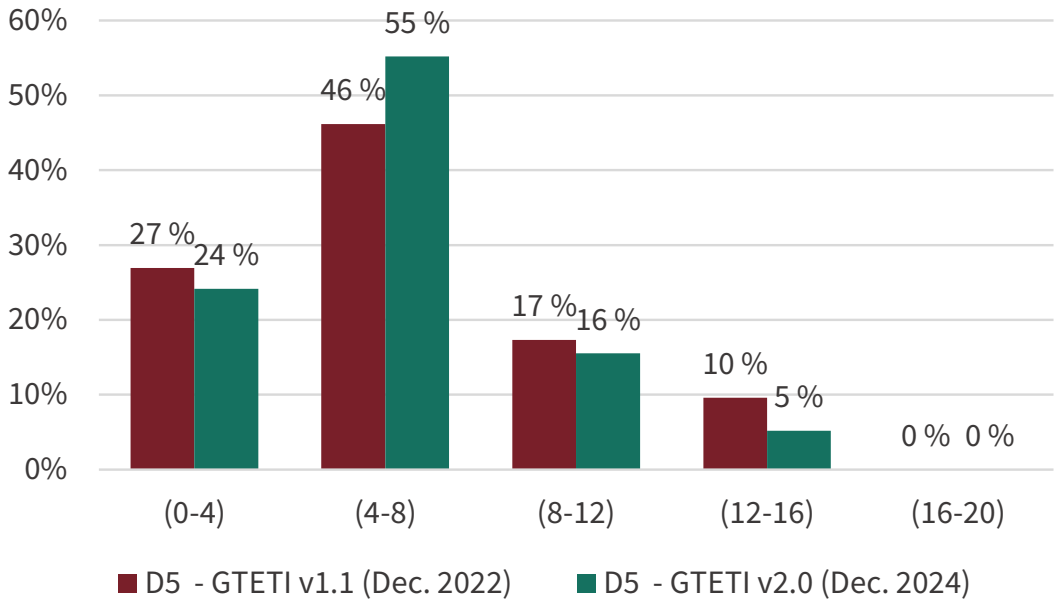
Dimension 5 assesses TEs in terms of the revenue forgone they trigger, and also with respect to the efforts governments put into their evaluation. The first three indicators deal with revenue forgone estimates. Indicator 5.1 assesses if the estimates are provided at the individual TE provision level, while Indicators 5.2 and 5.3 capture if revenue forgone estimates provide backward-looking figures as well as projections. The other two indicators tackle the issue of TE evaluations. Indicator 5.4 *TE Evaluation Framework* assesses if there is a framework for TE evaluations (e.g., covering responsibilities, timing and data requirements), and Indicator 5.5 captures whether TE evaluations (provided they exist) are included or referenced in the TE report.

Dimension 5 is the one with the lowest average score (6.5), which clearly indicates that TE assessment is an area where much work is left to be done. This is not an unexpected outcome since this is an area often pointed out as being particularly demanding in terms of human, financial and technological resources. On the other hand, the finding is worrisome because this dimension captures how revenue forgone estimates are reported and what governments do in terms of TE evaluation.

As shown in Figure 3.8, the distribution of scores presents a pronounced concentration towards the lower brackets, with 24 percent and 55 percent of the countries falling within the (0-4) and (4-8) score brackets, respectively. Moreover, this is the only dimension where no country falls in the top score bracket (16-20). Specifically, Indicator 5.5 Availability of TE Evaluations is one of two indicators where no country performs according to the best standards, which in this case calls for governments to evaluate all TEs at least every 5 years. The other indicator where no country achieves the highest score is Indicator 4.3 on Beneficiaries (see above).

Reporting on revenue forgone at the provision level is essential for transparency, fiscal accuracy, and accountability. Indicator 5.1 inquiries about the level of disaggregation found in TE reports. While 76 percent of countries now provide some revenue forgone data at the provision level (a 6 percent increase since the GTETI v1.1.), only 38 percent disclose individual revenue forgone estimates for all TE provisions, representing a notable 15-point decline since the previous edition. This reduction is largely driven by a closer review process of revenue forgone estimates included in the GTETI v2.0. This systematic verification uncovered several aggregate estimates that were identified as individual TE estimates in the previous version of the GTETI, triggering lower scores in Indicator 5.1, and in some cases affecting 4.1, 4.3 and 4.5 as well.

Figure 3.8: D5. TE Assessment. Score distribution by score brackets



Source: Authors' calculations based on the GTETI v1.1 and the GTETI v2.0.

Indicators 5.2 and 5.3 assess the availability of both backward estimates and revenue-forgone projections, which remains weak. Only 22 percent of countries publish backward estimates for five or more years (+4 percentage points), while 24 percent provide just one year, and 9 percent provide none. Countries are more likely to report backward estimates than projections: 33 percent fall in the top scores for indicator 5.2, but only 8 percent for indicator 5.3. For projections, just 3 percent present estimates for five or more years (+2 percentage points), whereas 52 percent provide no forward estimates at all and 36 percent publish 1-2 years. This limits the integration of TEs into MTFSs, fiscal risk analysis, and budget planning.

Evaluation frameworks— both ex-ante and ex-post— are essential to ensure the adequacy of the tax system with the governments' and policy objectives. Indicator 5.4 examines whether TE reports reference or include such frameworks, including criteria and scope of evaluation We find that a striking 89 percent of countries present no information on existing evaluation frameworks at all, a 5-point deterioration since last edition. About 11 percent of countries present or reference information on ex-post evaluation frameworks, while 4 percent do so for ex-ante assessments. Although many governments might have some internal or ad-hoc evaluation processes, their disclosure to the public is clearly insufficient.

Indicator 5.5 takes a closer look at TE evaluations themselves, assessing whether TE reports publish or reference evaluations and how far in time these extend. It considers both the type of evaluation (including impact assessments, incidence or distributional analyses, and other hybrid formats) and the share of TE provisions evaluated over a five-year period (the year of the latest TE report plus the four preceding years). Again,

the results are worrisome. No country conducts impact assessments for all TEs, and 84 percent conduct no evaluation of any kind, so scores are heavily concentrated in the lower brackets. Among the few countries that do conduct evaluations (18 in total), twelve conduct some sort of impact assessment, while the others rely on incidence analysis or other evaluation formats. Best practices are found in the Netherlands, which has evaluated above 50 percent of total TEs over five years. While this country performs best in terms of impact assessment, others achieve remarkable coverage of incidence analyses, such as Australia, Mexico, and United Kingdom, where 60 to 95 percent of revenue forgone is covered by distributional or incidence analysis. Among countries presenting TE evaluations in their TE reports, Benin, Cameroon, and Guinea stand out in Africa, while Indonesia is a leading regional example in among Asian economies.

This bleak picture in the TE evaluation field severely limits policymakers' ability to assess whether TEs meet their objectives, represent an efficient use of resources, or achieve equitable distributional outcomes. They also undermine the possibility of evidence-based TE reform: without evaluation, poorly designed TEs may persist indefinitely, consuming fiscal space that could instead support more effective social or economic policies. On the one hand, this highlights the unnecessary complexity of some TE regimes—such as those of Russia, Italy, and Pakistan, with 675, 575, and 500 TE provisions, respectively. On the other hand, as discussed in Chapter 2 of this Flagship Report, roughly 75 percent of total revenue forgone stemming from TEs is concentrated among the largest 10 TE provisions in most countries, a fact that should be taken into account by governments when it comes to prioritising their evaluation efforts.

3.4 Conclusions and policy implications

This chapter has shown that the GTETI v2.0 provides a dynamic global picture of TE reporting, allowing to trace developments between December 2022 and December 2024. The GTETI now covers 116 reporting jurisdictions—just over half of all jurisdictions identified by the World Bank—and confirms both encouraging progress and persistent structural gaps.

Average scores among reporting countries remain modest (46.9/100) and even the top 5 performing jurisdictions show significant room for improvement. No country currently comes close to the standards of an "ideal" TE report.

At the same time, this edition confirms that progress is possible and not limited to HICs or traditionally "data-rich" countries. New reporters such as Nicaragua and Ghana already match or surpass long-standing reporters in several dimensions. Ten countries have achieved double-digit score increases in only two years. LICs stand out as the one income group showing substantial average improvement (around six points), and five African LICs —Benin, Guinea, Niger, Mauritania and Burkina Faso—are now among the global Top 30. These developments show that institutionalising TE transparency is above all a question of political will, prioritisation and smart sequencing, rather than a technical matter reserved for wealthy jurisdictions with high administrative capacity.

Across regions, most averages cluster around the global mean, suggesting that the main variation in TE transparency is within regions rather than between them. This pattern reinforces a key message of the GTETI: TE transparency concerns are not confined to any single region or income group. Instead, they reflect common challenges in the regulation, documention and management of TEs.

The dimension-by-dimension analysis points to a clear hierarchy of reform needs. *Public Availability* (D1) and *Institutional Framework* (D2) show relatively higher scores, but still reveal important weaknesses. Many countries publish TE reports annually, though irregular publication, undated reports, weak visibility and limi-

ted reader-friendliness are widespread. Legal requirements to report on TEs have become more common and are associated with significantly higher scores elsewhere in the index, but enforcement gaps are substantial. Integration into the budget cycle and MTFSs are also weak—many governments mention TEs only superficially, if at all, in key fiscal policy documents.

The weakest areas lie in *Methodology and Scope* (D3), *Descriptive TE Data* (D4) and, especially, the assessment of TEs (D5). Many countries still fail to state clearly which taxes and provisions are covered; BTS definitions remain partial or opaque; and structural tax provisions are rarely distinguished from TEs in a systematic way. Coverage gaps are frequent and significant, particularly for property, excise, personal income and customs taxes, which undermines the usefulness of TE reports as comprehensive fiscal policy tools. Descriptive information on policy objectives, beneficiary groups, legal references and timeframes remains incomplete in a large share of countries, meaning that legislators and the public cannot easily see who benefits, for how long, and under what legal authority. Dimension 5 confirms that TE assessment and evaluation is the weakest link in TE analysis. While most reporting countries now publish at least some revenue forgone estimates, full provision-level coverage is declining as assessments become more precise. Backward-looking estimates are limited and projections rare. Lastly, TE evaluation frameworks are almost entirely absent from public documents, and only a minority of countries have evaluated a significant share of their TE provisions over a five-year period. Sadly, no country approaches systematic evaluation for all TEs. Indeed, as already mentioned, scores on Indicator 5.5 *Availability of TE Evaluations* remain particularly weak, with no country yet attaining the highest possible score. In practice, this means that governments continue to accept large, recurrent revenue losses with no or limited evidence on effectiveness, efficiency or distributional equity.

References

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Appendix : GTETI country statistics

Country / Jurisdiction	Income Group	GTETI Rank	Overall GTETI Score	D1. Public Availability	D2. Institutional Framework	D3. Methodology and Scope	D4. Descriptive TE data	D5. TE Assessment
Korea, Republic of	HIC	1	78,27	15,0	18,7	16,4	17,0	11,2
Indonesia	UMIC	2	77,27	18,0	12,7	19,0	15,6	12,0
Australia	HIC	3	76,33	15,0	17,3	13,0	17,0	14,0
Netherlands	HIC	4	72,87	17,3	9,3	13,2	17,0	16,0
Germany	HIC	5	72,47	16,0	16,7	11,2	16,2	12,4
Canada	HIC	6	71,60	15,3	8,0	17,1	18,0	13,2
Russian Federation	HIC	7	71,33	13,0	18,0	10,1	17,0	13,2
France	HIC	8	68,87	13,0	16,0	13,7	19,0	7,2
Benin	LIC	9	68,33	11,0	11,3	15,2	15,2	15,6
Brazil	UMIC	10	67,47	12,3	17,3	12,8	15,4	9,6
Portugal	HIC	11	67,40	11,3	17,3	15,3	12,2	11,2
Italy	HIC	12	67,27	9,3	20,0	11,3	16,2	10,4
Greece	HIC	13	67,00	13,3	20,0	10,7	18,2	4,8
Ecuador	UMIC	14	65,47	16,0	17,3	12,3	15,0	4,8
Uruguay	HIC	15	65,00	13,3	16,0	13,1	16,2	6,4
Sweden	HIC	16	64,93	13,3	17,3	11,7	16,2	6,4
Chile	HIC	17	62,27	11,3	14,7	16,7	13,2	6,4
Latvia	HIC	18	62,00	12,0	16,0	11,7	10,3	12,0
Puerto Rico (US)	HIC	19	60,87	14,0	10,0	15,7	11,6	9,6
Guinea	LIC	20	60,33	15,0	12,7	16,7	7,6	8,4
United States	HIC	21	59,73	11,3	17,3	11,3	11,8	8,0
Mauritania	LMIC	21	59,73	10,0	18,7	11,9	15,2	4,0
Niger	LIC	23	59,53	13,3	13,3	12,3	15,0	5,6
Pakistan	LMIC	24	58,73	13,3	11,3	15,1	13,4	5,6
Georgia	UMIC	25	58,60	16,3	16,0	12,3	7,6	6,4
Belgium	HIC	26	58,00	11,0	13,3	12,7	11,4	9,6
Nigaragua	LMIC	27	57,93	12,3	16,0	8,0	11,2	10,4
Burkina Faso	LIC	28	57,47	10,0	12,0	13,7	16,2	5,6
Mexico	UMIC	29	57,27	8,0	12,7	16,4	12,2	8,0
Ireland	HIC	30	56,93	13,3	11,3	12,0	8,3	12,0
Moldova	UMIC	31	56,87	12,3	3,3	15,2	18,0	8,0
Tunisia	LMIC	32	56,33	11,3	14,7	14,7	9,3	6,4
Costa Rica	UMIC	33	56,20	13,0	12,7	13,1	8,3	9,2
Austria	HIC	34	55,33	14,3	18,7	1,6	13,5	7,2
Cameroon	LMIC	35	55,20	12,0	14,7	12,3	5,5	10,8
Slovakia	HIC	36	54,60	10,3	18,7	10,1	6,7	8,8
Bulgaria	HIC	36	54,60	13,3	12,0	13,9	10,6	4,8
Dominican Republic	UMIC	38	54,40	9,3	16,0	13,1	12,0	4,0
Uganda	LIC	39	54,07	11,0	12,0	12,1	10,2	8,8
United Kingdom	HIC	40	53,87	13,0	7,3	11,3	11,0	11,2
Congo, Democratic Republic of	LIC	41	53,53	11,0	12,7	12,9	12,2	4,8
Morocco	LMIC	42	53,47	9,0	12,0	11,9	15,0	5,6
Finland	HIC	43	52,53	11,0	8,0	14,7	10,9	8,0
Rwanda	LIC	44	52,40	10,0	11,3	12,7	10,4	8,0
Slovenia	HIC	45	51,73	11,3	12,7	13,1	8,3	6,4
Peru	UMIC	46	51,47	8,3	14,7	10,3	12,6	5,6
Cote d'Ivoire	LMIC	47	51,20	10,0	16,0	13,9	4,1	7,2
Honduras	LMIC	48	51,00	14,3	12,7	9,5	4,9	9,6
Kenya	LMIC	49	50,27	13,0	9,3	12,3	9,3	6,4
Taiwan, China	HIC	50	49,00	9,0	13,3	8,4	11,9	6,4

Country / Jurisdiction	Income Group	GTETI Rank	Overall GTETI Score	D1. Public Availability	D2. Institutional Framework	D3. Methodology and Scope	D4. Descriptive TE data	D5. TE Assessment
Spain	HIC	51	48,87	1,0	17,3	11,7	13,2	5,6
Argentina	UMIC	52	48,80	13,0	14,0	8,1	7,3	6,4
Israel	HIC	53	46,80	5,0	11,3	14,1	10,8	5,6
Senegal	LMIC	53	46,80	7,0	17,3	11,9	5,8	4,8
Maldives	UMIC	55	46,60	12,3	6,7	10,1	10,3	7,2
Colombia	UMIC	56	46,33	16,3	11,3	12,3	4,0	2,4
Gabon	UMIC	57	46,13	10,0	16,0	10,7	5,5	4,0
Togo	LIC	58	45,07	14,3	8,0	14,1	5,5	3,2
Liberia	LIC	59	45,00	8,3	12,0	10,3	8,8	5,6
Luxembourg	HIC	59	45,00	6,3	16,0	11,1	6,8	4,8
Guatemala	UMIC	61	44,93	14,3	4,7	12,5	6,3	7,2
El Salvador	LMIC	62	44,87	8,3	12,0	8,9	8,4	7,2
Ghana	LMIC	63	44,73	14,3	16,0	6,0	2,8	5,6
Nigeria	LMIC	64	44,53	11,3	14,7	8,3	5,5	4,8
Norway	HIC	65	44,47	13,3	8,0	8,1	9,5	5,6
New Zealand	HIC	66	44,40	13,3	1,3	8,9	12,0	8,8
Jamaica	UMIC	67	44,13	10,3	14,7	5,9	7,6	5,6
Zambia	LMIC	68	43,93	17,0	3,3	7,7	10,3	5,6
Lithuania	HIC	69	43,20	10,3	16,0	2,8	9,3	4,8
South Africa	UMIC	70	42,80	14,3	8,0	6,8	7,3	6,4
Papua New Guinea	LMIC	71	42,73	11,0	17,3	2,0	7,6	4,8
Sierra Leone	LIC	72	42,27	12,3	16,0	0,0	5,9	8,0
Ethiopia	LIC	73	41,87	12,3	6,0	14,3	3,7	5,6
Albania	UMIC	74	41,73	11,0	6,0	12,9	7,8	4,0
Czechia	HIC	75	41,67	9,3	11,3	7,6	9,4	4,0
Madagascar	LIC	76	41,53	9,0	12,0	11,9	4,7	4,0
Iceland	HIC	77	40,53	12,0	16,0	4,4	3,3	4,8
Tajikistan	LMIC	78	39,33	13,3	9,3	5,7	6,1	4,8
Philippines	HIC	79	38,67	12,3	14,0	2,0	3,9	6,4
Mali	LIC	80	38,60	13,3	6,7	12,3	3,1	3,2
Japan	HIC	81	38,40	4,0	13,3	4,3	11,2	5,6
Bolivia	LMIC	82	38,33	9,3	2,0	11,7	8,1	7,2
Cyprus	HIC	83	38,20	7,0	13,3	5,6	8,3	4,0
Denmark	HIC	84	37,80	10,3	4,7	4,4	11,2	7,2
Cabo Verde	LMIC	85	37,73	12,0	11,3	3,3	5,5	5,6
India	LMIC	86	37,13	11,0	4,0	8,7	7,9	5,6
Switzerland	LMIC	87	37,00	7,0	10,0	8,9	6,3	4,8
Croatia	HIC	88	36,93	9,0	8,0	6,0	9,1	4,8
Estonia	HIC	89	36,87	11,0	9,3	0,8	9,3	6,4
Ukraine	UMIC	90	36,80	4,0	11,3	4,0	11,9	5,6
Somalia	LIC	91	36,13	12,3	14,0	0,0	1,8	8,0
Türkiye	UMIC	92	35,93	7,3	12,0	5,7	7,7	3,2
Sri Lanka	LMIC	93	35,13	9,3	6,7	10,3	6,5	2,4
Tanzania	LMIC	94	34,80	12,0	6,0	7,3	6,3	3,2
Chad	LIC	95	34,00	13,0	2,0	8,9	8,5	1,6
Armenia	UMIC	96	33,40	8,0	8,0	7,9	5,5	4,0
North Macedonia	UMIC	96	33,40	9,0	14,7	2,0	1,3	6,4
Poland	HIC	98	33,07	5,3	2,0	9,7	9,6	6,4
Egypt	LMIC	99	31,87	11,3	3,3	5,7	7,5	4,0
Jordan	LMIC	100	30,47	9,3	12,7	0,0	3,7	4,8

Country / Jurisdiction	Income Group	GTETI Rank	Overall GTETI Score	D1. Public Availability	D2. Institutional Framework	D3. Methodology and Scope	D4. Descriptive TE data	D5. TE Assessment
Azerbaijan	UMIC	101	29,27	12,3	9,3	2,8	0,0	4,8
Bangladesh	LMIC	102	29,20	9,3	3,3	4,9	7,6	4,0
Lesotho	LMIC	103	28,93	9,3	13,3	0,0	4,7	1,6
Mongolia	UMIC	104	28,80	10,0	12,7	0,0	1,3	4,8
Hungary	HIC	105	27,33	4,0	12,7	0,0	6,7	4,0
Kazakhstan	UMIC	106	27,07	14,3	2,7	0,0	6,1	4,0
Paraguay	UMIC	107	26,67	9,3	12,0	0,0	1,3	4,0
Cayman Islands	HIC	108	25,13	10,0	5,3	0,8	5,0	4,0
Romania	UMIC	109	24,60	3,0	8,0	4,9	5,5	3,2
Panama	HIC	110	23,13	5,3	3,3	6,0	3,7	4,8
Tonga	UMIC	111	23,00	11,3	5,3	0,0	2,3	4,0
Burundi	LIC	112	22,67	10,3	5,3	0,0	3,0	4,0
Eswatini	LMIC	113	22,00	10,0	6,7	0,0	1,3	4,0
Mauritius	UMIC	114	21,60	9,0	3,3	0,0	4,5	4,8
Algeria	UMIC	115	19,73	4,0	12,0	0,0	2,1	1,6
Bhutan	LMIC	116	12,60	6,3	3,3	0,0	1,3	1,6
All GTETI (average)			**46,9**	**11,0**	**11,5**	**8,9**	**9,0**	**6,4**

Source: Authors' calculations based on Redonda et al. (2025b)

4

ASSESSING THE EFFECTIVENESS OF TAX EXPENDITURES: LESSONS FROM THE UNDP TAX FOR SDGS TOOLKIT

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4.1 Background

Tax expenditures (TEs) can play a central role in advancing the Sustainable Development Goals (SDGs). Yet a worthwhile policy goal is not enough to demonstrate impact. Simply stating that a TE is meant to boost employment, green the economy, or tackle inequality does not provide evidence that the policy achieves its intended purpose, it merely defines the benchmark against which it should be judged.

TEs also come at a cost. They reduce government revenue, and if poorly designed, can generate distortions, inequities, or unintended externalities. Ideally, TEs should be assessed both before implementation (ex-ante) and after several years of operation (ex-post). Ex ante analysis should clarify policy objectives, estimate the likely costs and benefits, and assess whether a TE is the appropriate instrument. Ex post evaluation should identify whether the intended impact has materialised, at what cost, and with what side effects. Even in cases where identifying precise causal effects is difficult, structured evaluations based on effectiveness, cost, and efficiency can significantly improve decision-making.

Rationalising the use of TEs offers a double dividend: it can free up fiscal space while also helping align tax policies more closely with national priorities and international commitments such as the SDGs (Redonda et al., 2023). However, achieving this requires more than good intentions. It demands rigorous evaluations, backed by sound governance, reliable data, transparent reporting, meaningful public participation, and a robust evaluation framework, features that are still lacking in many countries.

The UNDP TEs and SDGs Toolkit (hereafter, the Toolkit),[9] together with its accompanying Knowledge Database, aims to help governments assess their entire TE regimes and systematically review individual provisions. By consolidating global evidence on what has and has not worked elsewhere, they help guide discussions around reform and inform policy choices for better alignment of TEs with SDGs.

4.2 The UNDP Tax Expenditures and SDGs Toolkit

To support countries in aligning their TE regimes with the SDGs, a two-stage assessment toolkit has been developed in the context of the UNDP Tax for SDGs initiative.[10]

Stage 1 is based on three dimensions: 1. *Governance*, 2. *Reporting*, and 3. *Evaluation Framework* (see Figure 4.1). Each dimension includes four subdimensions that are scored between A and D, where A is the highest score possible. In addition to these three dimensions, Stage 1 also includes four revenue-forgone indicators, which are not scored but provide contextual information on the magnitude of TEs.[11]

Stage 2 of the Toolkit assesses the design of individual TEs, examining their alignment with SDGs as well as the empirical evidence on their effectiveness and potential externalities. The rest of this chapter focuses mainly on the second stage of the toolkit.

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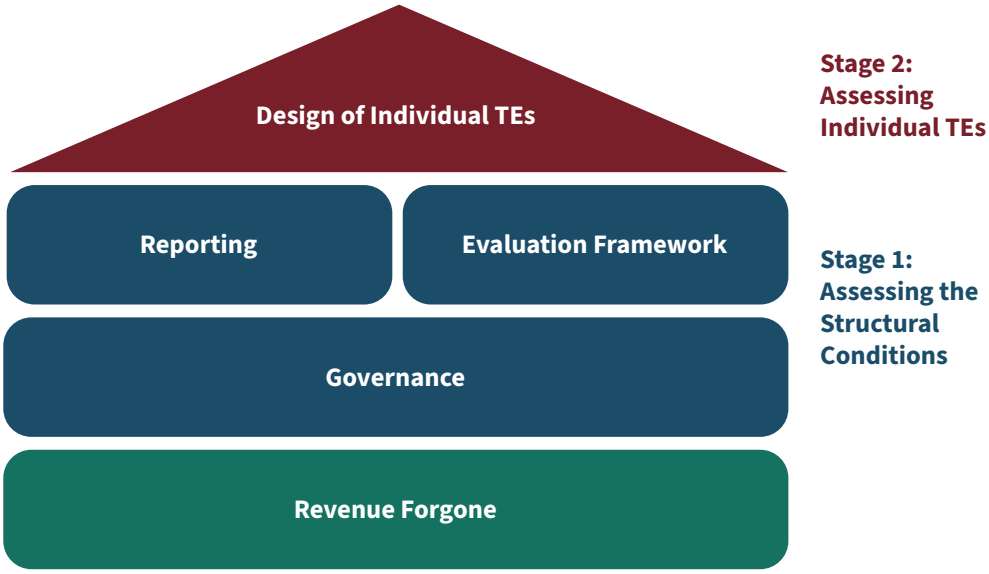
[9] The current version of the Toolkit is still work in progress – Please refer to the UNDP Tax for SDGs website for any related updates on this project.

[10] Fiscal policy coherence ensures that revenue, expenditure, debt, and regulatory measures mutually reinforce each other and align with national development strategies. Coherent fiscal policy strengthens SDG delivery – advancing climate action, equity, gender equality, health, and nature – while sustaining growth and resilience. Building on its Tax for SDGs project, UNDP has recently launched the Public Finance for SDGs. This broader initiative operationalises this holistic approach to fiscal policymaking in three stages: (1) Scoping: identifying fiscal gaps and priorities; (2) Evidence & Design: developing policy options and assessing trade-offs; and (3) Implementation: providing technical support and adaptive feedback. This toolkit supports fiscal policy coherence by helping assess whether TEs align with SDG objectives (stage 2), identifying which TEs need to be reformed (stage 1), and building evidence for reform design and stakeholder consensus (stage 3).

[11] The magnitude of revenue forgone stemming from TEs depends on country-specific factors and priorities, such as the country's benchmark tax system, its revenue and expenditure strategies, etc. The four indicators included in the Toolkit are: i) Revenue Forgone as a Share of GDP, ii) Revenue Forgone as a Share of Total Tax Revenue, iii) Revenue Forgone as a Share of Total Government Spending, and iv) Revenue Forgone Targeting SDGs as a Share of Total Revenue Forgone.

Figure 4.1: Two stages to align TEs with the SDGs



Source: Authors' elaboration.

Stage 2 is based on three questions:

a) Is the TE's **stated policy objective** aligned with the SDGs? If so, which one(s)?
b) Is there **evidence to support** that the TE is designed to pursue its stated policy objective and relevant SDG in an **effective** way?
c) Are there potential **negative and/or positive externalities** affecting other SDG(s) to be expected from the implementation of the TE?

The only way to assess whether a specific TE is effective and efficient in supporting the SDGs is by evaluating its costs and benefits using quantitative and/or qualitative methods. However, evaluations can be time and capacity consuming and are hence, strikingly rare, particularly (but not only) in low- and middle-income countries (LMICs).

Stage 2 of the Toolkit does not intend to replace these types of evaluations. Rather, by highlighting the potential alignment (or misalignment) of specific TEs with the SDGs, it aims to contribute to the evaluation strategies of governments, for example, by shedding light on which TEs the government should prioritise for more thorough evaluation. Togo, which served as one of the pilot countries for the Toolkit, is a case in point. The Toolkit encouraged the government to examine the alignment of its TE provisions with national development goals and highlighted the absence of empirical evidence on their economic impact, prompting a call for more robust, data-driven evaluations. The implementation of the Toolkit in the context of the Tax for SDGs initiative was instrumental in helping Togo identify and prioritise which TEs required deeper evaluation. After the implementation of the Toolkit (as a pilot), the government decided to conduct an evaluation of the reduction of customs duties on vehicles for the transport of goods and people, which was recently finalised supported by the UNDP Country Office in Togo. Through the Toolkit's structured framework, grounded in the principles of effectiveness, cost, and efficiency, Togo was able to move beyond simple revenue-forgone estimates and assess whether this provision actually served its intended policy objectives.

This process shows how the Toolkit contributed to prompting rather than replacing concrete TE evaluations as well as shifting from descriptive accounting to analytical fiscal governance, aligning tax policy decisions more closely with the SDGs and evidence-based policy making.

The outcome of any assessment under Stage 2 of the toolkit should be interpreted as in the following example: "*based on key design features and the existing knowledge in the field, the impact of the TE on SDG [#] is likely to be mostly positive. Likewise, it is likely to have no externalities on climate-related SDGs and "mostly negative" externalities on inequality-related SDGs".*

The assessment is based on key design features of the TE provision (or provisions) being assessed, and on the empirical work evaluating the effectiveness and efficiency of similar TEs published worldwide.

As part of the Toolkit, a comprehensive database was compiled to gather existing evidence on the performance of different TEs. The *TEs for SDGs Knowledge Database* (hereafter, the Knowledge Database) is based on academic papers, studies, and reports on the effectiveness of specific (or group of) TE provision(s) in achieving their stated policy goal(s) (hereafter, TE evaluations).

The following sections of this chapter focus on the Knowledge Database and the wealth of evidence in it.

4.3 The Knowledge Database and its construction

The evaluations gathered were all either carried out by governments themselves, commissioned by them, published by leading international and regional organisations, or published in peer reviewed academic journals.[12]

The Knowledge Database includes three main categories of information: *publication details, TE provision(s) evaluated,* and *outcomes of the evaluation*. The data is disaggregated by evaluated TE provision. If a publication assesses multiple TE provisions, the results for each provision are recorded separately.

The evaluation outcomes for each provision are categorised based on several criteria, including effectiveness and externalities. Each record in the Knowledge Database receives an effectiveness score based on a five-point Likert scale (from "very weak" to "very strong"). Externalities regarding climate, wealth, income, gender, age, or other social indicators are also classified as positive or negative, if mentioned, or otherwise left blank. Other descriptive information on the evaluation such as its methodology, or author views on the appropriateness of the policy or proposed design changes are also described and categorised. These categorisation steps were supported by AI tools.

Searching for evaluations to build the Knowledge Database

The first step in building the Knowledge Database involved identifying existing TE evaluations. While, ideally, the Knowledge Database would cover all existing TE evaluations worldwide, this is a cumbersome task due to several practical challenges, such as language barriers, lack of accessibility, and resources and time constraints. Nevertheless, a large number of studies were gathered during the project period, as shown in Figure 2, and summary statistics on the current state of the Knowledge Database are presented in a separate section below.

The following criteria were used for an evaluation to be included in the Knowledge Database:

Focus on TEs: Evaluations must concern TE provisions, and not general tax policies. For this purpose, TEs refer to preferential tax treatments aimed at achieving specific policy objectives that entail a reduction in the taxpayer's liability as well as a revenue loss for the government. For instance, an evaluation assessing the reduction of the standard VAT rate does not meet the criteria, while an evaluation of a VAT provision that grants a preferential rate on certain goods does.

Cost-benefit analysis (CBA), impact assessment and distributional analysis: Ideally, evaluations should be based on a CBA or other type of empirical approach such as econometric approaches aiming to establish a causal relation between the TE and an outcome variable (for instance, difference-in-differences or regression

[12] The Knowledge Database comprises evaluations published from 2000 onwards.

discontinuity designs). The latter could provide useful information on the impact of the policies without necessarily looking into their costs (Redonda et al., 2023). Distributional/incidence analyses (e.g., by income or demographic group) or qualitative assessments (e.g., expert evaluations or surveys) are also accepted. Even if they do not provide a full picture of the costs and benefits, they can provide useful insights for policymakers, e.g. on the allocation of benefits across the income distribution.[13]

Evaluation of effectiveness and efficiency: Evaluations should draw conclusions on whether the TE is effective in achieving its stated policy goal(s) or not. Ideally, they can also discuss the appropriateness and desirability of the TE, e.g. with regards to other policy alternatives as well as the potential positive or negative externalities that it might trigger (besides the effectiveness against the state objectives).

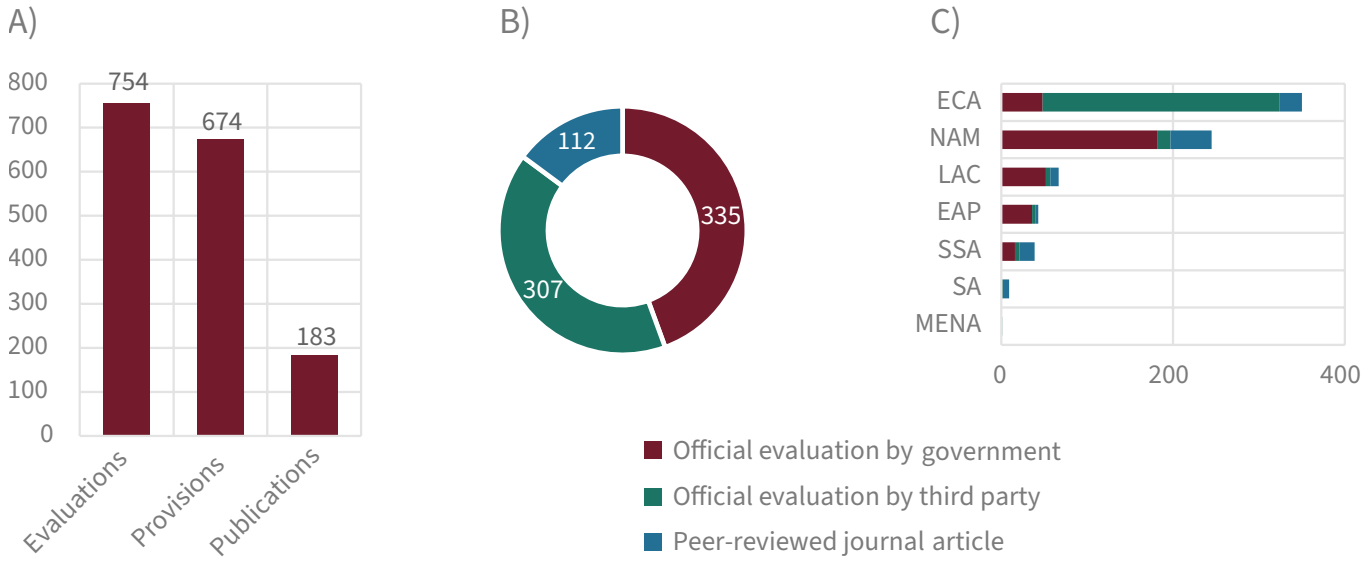
Official and peer reviewed academic evaluation: Evaluations must be conducted by government bodies directly or commissioned by them (in both cases, they are considered as "official evaluations") or be published by peer-reviewed academic journals or by renowned international organisations (i.e. the International Monetary Fund, the World Bank, etc).

Cut-off date: Evaluations must have been published on January 1, 2000, or after.

4.4 Insights from the Knowledge Database

At the end of the project period, the Knowledge Database included 183 publications with 754 individual evaluations of 674 TE provisions (Figure 4.2A). The vast majority of evaluations are either carried out directly by the government (43%) or commissioned by the government but implemented by a third party (42%). A smaller proportion of evaluations (15%) came from academic journals (Figure 4.2B). A key reason for this is that governments typically evaluate large numbers of provisions at once as part of standard policy reviews (in countries where this happens), whereas academic publications typically go into the details of a single policy or a small group of related policies. The database also shows that most evaluations have been carried out in Europe and North America (Figure 4.2C).

Figure 4.2: Coverage statistics of the Knowledge Database



Note: ECA – Europe and Central Asia; NAM – North America; LAC – Latin America and the Caribbean; EAP – East Asia and Pacific; SSA – Sub-Saharan Africa; SA – South Asia; MENA – Middle East and North Africa

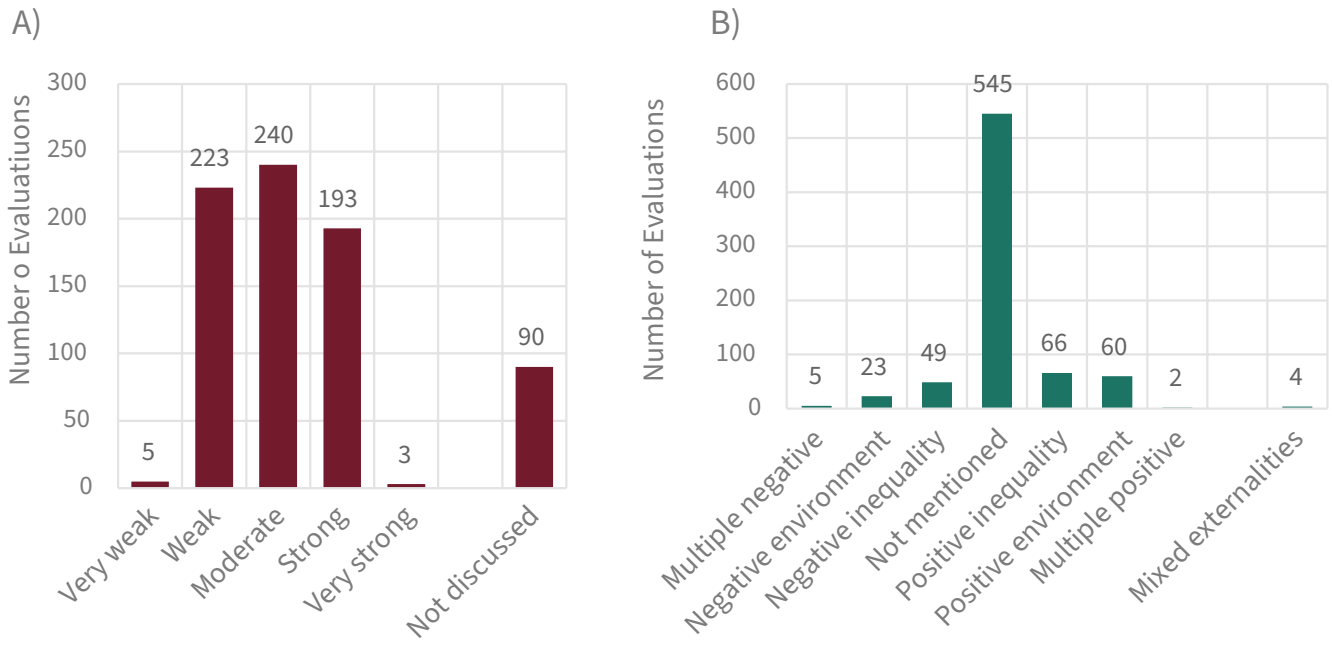
[13] When a government includes incidence analyses of the same set of TEs in their annual TE report, only the latest analyses are included in the Knowledge Database.

Table 4.1: Number of evaluations in the Knowledge Database by tax and TE type

	Exemption	Tax credit	Deduction	Reduced rate	Other	Total
CIT	57	122	53	19	18	269
PIT	57	90	63	35	13	258
VAT/Sales tax	77	2	-	17	3	99
Excise taxes	34	3	-	17	-	54
Property taxes	23	2	6	6	-	37
Multiple/Other	17	3	1	15	1	37
Total	**265**	**222**	**123**	**109**	**35**	**754**

The 754 evaluations included in the Knowledge Database span a range of tax types, with the largest share related to corporate income tax (CIT) (269 provisions) and personal income tax (PIT) (258 provisions). Value-added tax (VAT) and sales tax provisions account for 99 entries, while excise taxes and property taxes are represented by 54 and 37 provisions, respectively (Table 4.1). Despite the widespread use of customs exemptions in many developing countries, very few customs provisions are included in the database (included under Multiple/Other in the table above), primarily due to the lack of publicly available evaluations. In terms of TE types, exemptions are the most frequently evaluated (265 provisions), followed by tax credits (222), deductions (123), and reduced rates (109). The database also includes a limited number of provisions classified as "other" (35), capturing instruments that do not fit neatly into the standard categories.

Figure 4.3: Evaluation outcomes and externalities mentioned



Note: If only one type of externality (positive or negative) is shown, it means the other was not mentioned in the evaluation. "Not mentioned" indicates that neither positive nor negative externalities were discussed.

Evaluation results show that most TEs are at best moderately effective in achieving their stated objectives (Figure 4.3A). Of the 754 evaluations, the largest group (240) fall into the moderate category, while 223 are assessed as weak and 5 as very weak. Only 193 are considered strongly effective, and just 3 are classified as very strong. For 90 provisions, effectiveness was not discussed at all as these were mainly distributional assessments and incidence analyses. Most evaluations (545) do not mention environmental or social externalities. When externalities are discussed, they are more likely to highlight positive effects, particularly on inequality (66 evaluations) and the environment (60 evaluations), though a smaller number (49) note negative inequality impacts, and only 23 points to negative environmental effects (Figure 4.3B).

Drawing overarching conclusions about the effectiveness of TEs is inherently difficult given the diversity of provisions, policy goals, and evaluation contexts represented in the Knowledge Database. The 754 evaluated provisions span different sectors, tax types, countries, and methodologies. Broad groupings by tax type or TE type tend to obscure this heterogeneity: each category mixes instruments designed for very different policy purposes, producing a relatively even spread of strong, moderate, and weak outcomes. For example, CIT deductions encompass everything from research and innovation incentives (such as Indonesia's super-deduction for research and development (R&D)) to accelerated depreciation for environmental investments, allowances for capital gains on firm sales, start-up incentives, and sector-specific measures for media, hospitality, agriculture, or shipping. Evaluating all of these under a single heading like "CIT deduction" inevitably blurs underlying patterns. The same is true in the PIT, where reduced rates, for example, cover an extremely wide spectrum, from capital gains preferences, pension and superannuation concessions, and cultural heritage reliefs, to housing incentives, employment-related reductions, and support for dependent care or disability. Unsurprisingly, such internally diverse categories produce mixed and often inconclusive evaluation patterns.

On top of this, the criteria used to assess effectiveness, whether linked to direct behavioural change, broader economic outcomes, or alignment with policy intent, also differ across studies. As a result, while patterns can be observed and certain types of TEs emerge as relatively more successful, such insights should be interpreted with due caution and keeping these contextual limitations in mind.

One way to bring structure to this diversity is by grouping TEs according to the policy objectives they are designed to achieve (Table 4.2). This classification allows evaluations to be compared within clusters of similar intentions, revealing clearer patterns of relative performance. Among the 30 policy objectives with at least five evaluations in the database, only ten show a majority of strongly positive outcomes when comparing strong versus weak evaluation.

Table 4.2: Breakdown of evaluation results regarding effectiveness by policy objective

	Policy objectives	Weak	Moderate	Strong	Total evaluations
1	Support climate change action	0%	0%	100%	5
2	Promote charitable activities	7%	33%	60%	15
3	Promote or protect SMEs	19%	25%	56%	32
4	Develop the agricultural sector	23%	23%	54%	30
5	Promote renewable energy	5%	65%	30%	20
6	Mitigate greenhouse gas emissions	18%	42%	40%	43
7	Increase access to public transport	20%	40%	40%	5
8	Preserve cultural or historical assets	0%	80%	20%	5
9	Create employment	24%	43%	33%	21
10	Increase access to health services	13%	67%	20%	15
11	Develop the entertainment industry	44%	12%	44%	16
12	Promote R&D and innovation	39%	22%	39%	44
13	Promote population growth	33%	33%	33%	6
14	Promote savings	25%	50%	25%	12
15	Promote energy efficiency	27%	55%	18%	22
16	Develop the transportation sector	22%	64%	14%	22
17	Increase access to housing	30%	50%	20%	10
18	Increase affordability of basic goods	39%	33%	28%	18
19	Develop the manufacturing sector	33%	48%	19%	21
20	Attract investment	43%	40%	17%	52
21	Support employer-to-employee benefits	38%	50%	12%	8
22	Develop a specific region of the country	48%	30%	22%	23
23	Develop the energy sector	57%	14%	29%	7
24	Develop the housing sector	59%	15%	26%	27
25	Support low-income households	53%	27%	20%	15
26	Develop the technology sector	63%	12%	25%	8
27	Support people with disabilities	62%	15%	23%	13
28	Increase access to education	53%	35%	12%	17
29	Improve labour conditions	55%	36%	9%	11
30	Develop the tourism or hospitality sector	88%	12%	0%	8
Total number of provisions		187	198	166	551

Note: Author's calculations based on data from the Knowledge Database. The policy objectives have been extracted from the GTED and matched with provisions included in the Knowledge Database.

What the positively evaluated provisions have in common

Across policy areas, positively evaluated TEs share a set of core features: they are tightly aligned with well-defined policy objectives, designed to induce clear behavioural change, and often paired with complementary measures that enhance effectiveness and contain costs. These features are most common in interventions that target environmental goals, charitable activities, small and ,medium-sized enterprise (SME) development, and agricultural productivity. In these sectors, incentives were found to shape investment and consumption patterns with relatively direct causal chains.

Environmental tax incentives stand out for generating measurable behavioural change. Evaluations from 11 countries highlight consistently effective approaches, including the Netherlands' Environmental Investment Allowance (MIA) and France's accelerated depreciation for energy-saving and renewable energy equipment (Guillaume et al., 2011; Volkerink et al., 2012; Vergeer et al., 2018). Vehicle tax concessions across Europe, North America, and Asia have similarly increased the uptake of low-emission vehicles and reduced CO_2 emissions (Beresteanu & Li, 2011; Guillaume et al., 2011; Ministerie van Financiën, 2011; Sallee, 2011; Barwick et al., 2023; Borenstein & Davis, 2025). A common feature of successful cases is strong behavioural response, reflected in high pass-through rates, up to 80 percent in the Netherlands, and effective incentives for greener investment in France (Guillaume et al., 2011; Barwick et al. 2023).

Despite shared objectives, successful designs differ considerably, as illustrated by the contrast between the California Solar Initiative and the MIA (Volkerink et al., 2012; Hughes & Podolefsky, 2015; Vergeer et al., 2018). Success is not guaranteed: evaluations of Indonesia's renewable energy allowance and U.S. residential clean energy credits show that high fiscal cost, unequal benefit distribution, or administrative complexity can undermine outcomes (Indonesia Ministry of Finance, 2023; Borenstein & Davis, 2025). Effective incentives typically address real cost barriers, target eligible technologies or groups, and operate within broader supportive policy frameworks.

Well-designed charity incentives also perform strongly in terms of effectiveness. The Netherlands' gift deduction and South Africa's PIT exemption for charitable giving have effectively stimulated additional contributions and bolstered civic engagement (Ministerie van Financiën, 2017; Chingwere et al, 2024). At the same time, this group of provisions also underscores why tracking externalities in the Knowledge Database is essential, as evidence from Canada and the U.S. shows that incentives which successfully mobilise donations can nevertheless generate unequal distributional effects. In Canada, for example, the non-taxation of capital gains on donations of publicly listed securities substantially boosts contributions from wealthy taxpayers and enhances the funding base of large charitable foundations but also concentrates fiscal benefits at the top of the income distribution (Canadian Department of Finance, 2014).

In agriculture, well-performing TEs are typically built to address structural and generational challenges within the sector. Targeted policies such as the Netherlands' transfer tax exemptions for agricultural land and Germany's capital gains allowance for retiring farmers support land consolidation and secure retirement income for smallholders (Silvis and van der Meulen, 2016; Thöne et al., 2019). France's incentives for organic production and truffle cultivation highlight how fiscal measures can align with ecological objectives, while Ireland's suite of stamp duty exemptions helps support farm succession and generational renewal (Guillaume et al., 2011; Irish DAFM, 2014). These policies are not simply aimed at boosting short-term output, they serve broader goals of sustainable land use, environmental stewardship, and resilience of rural livelihoods.

In the SME sector, successful programmes often reduce both fiscal and compliance burdens while encouraging formality and entrepreneurship. Brazil's SIMPLES Nacional consolidates multiple taxes into a simplified, lower-rate regime, boosting formal firm registration, employment, and productivity (Fajnzylber et al., 2011; dos Santos Navarro et al., 2025). Ireland's Start-Up Relief for Entrepreneurs (SURE) leverages PIT refunds to inject capital into new ventures with relatively low fiscal cost (Irish Department of Finance, 2018). By contrast, Korea's SME-focused R&D credit illustrates the limits of incentive-only approaches: despite boosting R&D in-

vestment, effects were dampened by persistent financing constraints, highlighting the importance of pairing tax measures with access-to-credit reforms (Lee, 2018).

Lessons from policies with mixed results

Even where objectives are worth pursuing and design appears thoughtful, outcomes are not always uniformly positive. R&D and energy-efficiency incentives are particularly illustrative: while some are among the most robustly evaluated and positively performing TEs, others struggle due to high deadweight, low take-up, or weak behavioural response. Understanding these distinctions helps illuminate where design or contextual factors make the difference between policy success and disappointment.

Across R&D instruments, additionality varies widely.[14] Strong additionality is reported for the UK's R&D tax credits (about £1.53 to £2.35 in extra business R&D per £1 of forgone revenue) and Canada's Scientific Research and Experimental Development (SR&ED), especially for smaller firms and manufacturing (HMRC, 2015; Canadian Department of Finance, 2021). The Netherlands' R&D tax credit (WBSO) also does what it sets out to do, raising private R&D wage spending, and Argentina's credit lowers the user cost of R&D with significant investment response (Verhoeven et al., 2012; Crespi et al., 2016). By contrast, Chile's R&D credit shows low pay-off relative to a 35 percent credit rate, with increases around 0.3 per 1 in some specifications, and the US GAO flags windfalls in the federal credit where a sizeable share subsidises spending that would have occurred anyway (GAO, 2009; Mardones & Becerra, 2020).

Instrument type matters. Input-side credits and wage-based incentives tend to show clearer links to new R&D outlays, while profit-based or intellectual property (IP)-box regimes often underperform on additionality. This is in line with the recommendations on tax incentives design given by international organisations and other stakeholders (González Cabral et al., 2023; Heckemeyer et al., 2025). The Netherlands' Innovation Box raises activity but delivers only about 0.54 euro of extra R&D per euro of revenue forgone, the UK Patent Box shows roughly a 10 percent investment lift with caveats, and Ireland's Knowledge Development Box has weak uptake due to restrictive claiming windows (den Hertog et al. 2015, Roe-Brown & James, 2020; Irish Department of Finance, 2022). Within credits, incremental designs outperform level-based designs in Québec, where level-type incentives exhibited substantial deadweight while incremental credits showed "bang for buck" near 3 for both small and large firms (Baghana & Mohnen, 2009).

Comparable patterns emerge in the energy-efficiency domain. In France, a long-running energy renovation tax credit increased household renovation expenditure by 21.8 percent on average but induced renovations in just over one percent of eligible dwellings, with up to 73 percent of recipients classified as free riders (Risch, 2022). Design limitations, such as the broad availability of the credit and the fact that it disproportionately benefited households already planning to renovate, undermined its efficiency. Similarly, evaluations of the Dutch Energy Investment Allowance (EIA) suggest mixed results: while the programme catalysed energy-saving investments and delivered CO_2 reductions for larger projects, free-riding rates were substantial, ranging from 44 percent up to 64 percent depending on investment size (Volkerink et al., 2012). A subsequent evaluation showed that following design adjustments prompted by earlier findings, the EIA achieved favourable cost-effectiveness at €15–17 per ton of CO_2 abated once deadweight was accounted for, illustrating how iterative evaluations can inform better targeting and strengthen policy performance (Blom et al., 2018).

In the US, energy-efficiency credits for residential heat pumps consistently underperform. Data spanning five policy changes over nearly two decades show no discernible effect of non-refundable PIT credits on adoption rates, even when credit rates were increased threefold (Borenstein & Davis, 2025). Racial and distributional disparities are also evident: non-Hispanic white homeowners disproportionately benefit because they are more likely to own their homes, suggesting

[14] For additional insights on R&D incentives, see the chapter by Heckemeyer et al. in this flagship report.

housing tenure and access barriers constrain the reach of the credit (Jacobsen, 2024). In contrast, US vehicle tax credits, with larger benefit amounts and high consumer salience, show very strong behavioural responses across multiple evaluations. The phase-out of federal credits for Tesla and General Motors in 2019–20 notably slowed electric vehicle (EV) sales, and detailed studies reveal high pass-through rates (70–80 percent), with consumers capturing most of the subsidy (Barwick et al. 2023; Bistline et al. 2023; Borenstein & Davis, 2025). These results imply that visibility, upfront cost barriers, and well-calibrated design can be just as important as the underlying policy objective.

What the negatively evaluated provisions have in common

A substantial share of evaluated TEs fall short of their objectives, above all related to tourism, housing, education, labour conditions, and regional development. While diverse in motivation and form, these poorly performing measures share several weaknesses: low additionality, weak targeting and incidence, questionable theories of change, and insufficient scale relative to the market or structural constraints they aim to influence. Administrative frictions and adverse externalities further undermine their effectiveness.

Low additionality is the most common pitfall. The Netherlands' deduction for training expenses generated just 0 to 27 cents of extra training per euro spent, and most beneficiaries (73 to 100 percent) would have trained anyway (van den Berge, 2016). Similarly, U.S. higher-education credits such as the American Opportunity Tax Credit (AOTC) and Lifetime Learning Credit showed only marginal effects on college enrolment (Bulman & Hoxby, 2015; Crandall-Hollick, 2018). In Pennsylvania, the Mobile Broadband Investment Credit mostly subsidised investment that firms would have made without support (about 90 percent, according to the evaluator) (IFO, 2022).

Weak targeting and incidence also frequently reduce policy impact or lead to negative equity-related externalities. Sri Lanka's VAT exemption for petroleum disproportionately benefits higher-income households, while fringe benefits like France's restaurant VAT cut accrue largely to firm owners rather than to workers or consumers (Benzarti & Carloni, 2019; Wawrick et al. 2021). These cases reveal how poorly designed TE can amplify regressivity rather than address distributional or developmental objectives.

Questionable causal logic or insufficient scale often render programmes symbolic at best. Honduras's Zona Libre Turistica (ZOLITUR tourism regimes explain less than 1 percent of variation in local investment and jobs, suggesting low economic leverage (Secretaría de Finanzas, 2021; Secretaría de Finanzas, 2024; Bermúdez et al., 2024). Virginia's R&D credit accounts for just 0.15 percent of statewide private R&D and was effectively too small to alter innovation outcomes (JLARC, 2022). Even where take-up occurs, the design logic fails to connect the incentive to a meaningful shift in behaviour or conditions.

Administrative frictions compound these issues. The Netherlands' healthcare expense deduction is too complex to benefit many chronically ill and disabled taxpayers (Ministerie van Financiën, 2016). Colorado's Business Personal Property credit struggles with low uptake and frequent miscalculations (Office of the State Auditor, 2024). Indiana's Regional Development Authority deduction suffers from questionable compliance, with deductions claimed despite unclear or ineligible contributions (Office of Fiscal and Management Analysis, 2023).

Externalities and cost-effectiveness concerns often push evaluations from mixed to clearly negative findings. Germany's excise exemption for mineral oils is both environmentally harmful and fiscally expensive (Thöne et al., 2009). The Netherlands' LNG excise refund delivers negligible environmental gains relative to revenue losses (Haffner et al., 2018). In Switzerland, a range of homeownership-related tax reliefs (including VAT exemptions for sales and rentals) were deemed ineffective at promoting housing access while generating disproportionate fiscal costs (Thalmann & Thalmann, 2024).

Sectoral or place-based incentives frequently lead to a relocation of benefits rather than creating new ones. Tunisia's phase-out of offshore corporate tax holidays reduced firm entry but had little effect on employment, implying limited economic renewal even as re-

Table 4.3: Summary of common lessons across evaluations

Performance	What worked (or did not)	Core takeaway
Positive	Targeted, visible, well-calibrated incentives with strong behavioral links (e.g. EV credits, SME simplification, organic farming deductions).	Align design with actual cost barriers, pair with complementary policies, and monitor distributional or environmental spillovers.
Mixed	Partial impact but undermined by deadweight, access issues, or insufficient scale, uneven distribution of benefits (e.g. home energy credits, general R&D allowances).	Retarget and scale interventions to reduce free-riding, address access constraints, and review whether the tax system is the right instrument.
Negative	Low additionality, weak targeting, indirect logic, high admin burden (e.g. regional holidays, broad VAT cuts, training deductions).	Avoid symbolic or blunt tax relief; use alternatives (e.g. direct spending) if TEs cannot be tightly targeted.

venue forgone may have reached 6 percent of GDP (Calì et al., 2025). Likewise, France's restaurant VAT cut and Honduras's ZOLITUR incentives produced small or misdirected effects, largely captured by producers rather than generating broader societal gains (Secretaría de Finanzas, 2024; Bermúdez et al., 2024; Benzarti & Carloni, 2019).

In sum, underperforming TEs tend to suffer from imprecise targeting, low additionality, misaligned design logic, inadequate scale, or administrative burdens. The design implications are clear: target more precisely, test additionality ex ante, scale intervention to the relevant market friction, streamline rules to enhance effective take-up, and pair tax measures with complementary policies. Evaluation requirements, caps, sunsets, and clawbacks can further mitigate deadweight and fiscal risk. Finally, policymakers should avoid incentives who's environmental or equity externalities undercut their stated goals.

4.5 Conclusions

Evaluating TEs is a critical element of fiscal policy coherence. As governments work to align their fiscal systems with the SDGs, it is essential to assess not only whether TE provisions achieve their stated objectives, but also how they interact with other fiscal instruments and whether they represent the most effective approach to advancing development priorities. By providing a holistic assessment of TE regimes including both structural characteristics as well as the effectiveness of individual TE provisions, the Toolkit makes a contribution in this direction. Ultimately, the Toolkit seeks to provide an instrument-specific analysis toward integrated fiscal policy reform that maximises impact on SDG outcomes.

The Toolkit runs on a comprehensive database of TE evaluations published worldwide. The number of TE evaluations is strikingly low in most countries, including most HICs. This said, the information gathered in the Knowledge Database confirms that there is a potential bias as most of the existing evaluations indeed come from HICs. This is an important limitation of the assessment in terms of the external validity and extrapolation of the results. Low- and middle-income countries often have narrower tax bases, larger infor-

mal sectors, and weak administrative capacities. Hence, TE provisions that have been proven cost-effective in high-compliance environments may not work the same way in a low- or middle-income country.

It is important to note that this chapter is based on the current version of the Knowledge Database. Yet it is vital that the Database continues to expand. Ideally, it should eventually cover all existing TE evaluations worldwide and be updated on an ongoing basis to include new studies as they become available, thereby increasing the reach and policy relevance of the Toolkit. At the same time, it is possible that some countries conduct evaluations without disclosing them publicly. Such practices create additional gaps in the evidence base, as these assessments cannot be captured in the Database. If the Database is not expanded, and if undisclosed evaluations remain inaccessible, some provisions will have no matching evidence, leaving their effectiveness and externalities unassessed.

These caveats aside, the evidence from over 750 evaluated TEs allows to identify important lessons:

- Policy objectives alone reveal little; outcomes hinge on the details of design, scale, targeting, and context.
- Policies that address real cost barriers and are paired with complementary non-TE programmes are more likely to trigger strong behavioural responses.
- Administrative simplicity, clear eligibility criteria, and high visibility improve take-up and reduce deadweight.
- Externalities should not be ignored because effective TEs can still create harmful side effects.
- Instrument choice matters, as different TE designs shape both their potential effectiveness and the likelihood or magnitude of distributional and environmental externalities.

By connecting TEs to observed outcomes based on TEs evaluated elsewhere, the Toolkit enables policymakers to anticipate common risks such as low additionality, weak targeting, and regressive benefit distribution. It similarly highlights design elements associated with better performance, including features like refundability, incremental baselines, and clear eligibility criteria. These insights help governments target incentives realistically based on empirical responses and reduce deadweight. In this sense, whereas the implementation of the Toolkit has, so far, been done to assess existing TE policies, the Knowledge Database could be used as an instrument to support ex-ante design of TEs.

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5

TAX EXPENDITURE EFFECTIVENESS: IMPLEMENTING TAX EXPENDITURE GUIDELINES IN IRELAND

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5.1 Introduction

Tax expenditures (TEs) are policy instruments used to promote specific social or economic goals that substitute for direct spending; typically, they take the form of tax exemptions, allowances, credits, deferrals or preferential rates.[15] The relevance of long-standing TEs and their ability to add value to fiscal policy is being increasingly challenged. Indeed, recent work suggests that TEs can often be inefficient, lack transparency, and may fail to achieve their intended goals while their cost may rise over time (Aliu & Redonda, 2025a; 2025b). It is also possible that some of these schemes have the net effect of diminishing the public good by leading to significant revenue losses without achieving sufficient countervailing benefits (Sweeney, 2016).

Often the goal of limiting the use of TEs derives from curbing their exchequer cost. The cost of a TE can increase steadily over time due to higher take-up than initially envisaged, or due to limitations in its design. While often effective in influencing market and human behaviour as anticipated, TEs can benefit people or incentivise activity that would have nonetheless occurred in the absence of the relief (deadweight), or induced rent-seeking behaviour to avail of the perceived benefit offered. In the absence of regular reviews, long-standing TEs can therefore outlive their original intention and even run counter to current policy goals.

As new priorities emerge in the economy, TEs should be regularly reviewed to assess their compatibility and continued effectiveness including any distortionary effects encountered. Better evaluation frameworks and increased transparency can immensely assist in the review process (Redonda, von Haldenwang & Berg, 2023). Through careful scrutiny, schemes can be identified that are either ineffective or have already achieved their objective, thus adding no extra value to the State. They can then be removed and potentially replaced by measures of either a similar or different nature, with the precision to provide a greater benefit to the common good going forward.

In an Irish context, essential improvements are required for infrastructure and other capital investment over the coming years, at a large cost to the exchequer, meaning that there is the required focus on achieving value for money. However, this focus cannot be restricted to direct expenditure but must continue to be applied rigorously to TEs as well. To ensure improved fiscal effectiveness, various tax reliefs of a temporary nature are regularly evaluated to confirm their ongoing value. Ireland is one of only a few countries worldwide to publish a structured evaluation framework for TEs, according to the TE guidelines which have been updated in 2024 (Department of Finance, 2024a). The updated guidelines identified a number of areas where improvements are being made by balancing the trade-offs between effective evaluation and available resources. It builds on the legal requirement under Article 14(2) of the EU Budgetary Framework Directive 2011 requiring Member States to publish detailed information on the impact of TEs on revenues.

In this chapter we offer a detailed summary of Ireland's existing TE assessment framework, intended to provide guidance to other countries in this critical area of tax policy. Specifically, Section Two summarises key particulars of the Irish TE guidelines. Section Three provides some background context, including the development of this policy area and the ongoing challenges faced. Section Four offers a more granular insight into the practical challenges of adhering to the guidelines when completing specific TE reviews. Section Five describes the real gains made by developing and adapting the guidelines over time. Section Six identifies the key takeaways and the ongoing challenges in assessing TEs. Section seven concludes with recommended next steps for an improved implementation of the TE guidelines.

[15] In Ireland, definition of a tax expenditure is set out in S.I. 508 of 2013 and largely follows the definition used by the OECD. Throughout this chapter the terms tax expenditure, tax reducing measure, relief and scheme are used interchangeably.

5.2 Ireland's tax expenditure guidelines[16]

Ireland broadly follows the OECD definition of TEs as "tax provisions (i.e., exemptions, non-standard deductions, credits, reduced rates and deferrals) within the tax system that deviate from a benchmark tax system" (OECD, 2022).[17] TEs are essentially policy instruments that perform the function of promoting specific social or economic goals by substituting for direct spending in the relevant areas. However, based on sound policy principles, their use should be limited to circumstances where a demonstrable market failure exists and where such a measure is more efficient than a direct expenditure intervention.

TEs vary considerably in terms of design, operation and intended benefits; as a result, there is no 'one-size-fits-all' approach to measuring their impact. These complexities are compounded significantly when comparing TEs internationally. According to the European Commission, "tax expenditures are a deviation from a benchmark tax system, they are generally rather difficult to identify in a straightforward and unequivocal way. The same tax relief could be classified as tax expenditure in one country, while being considered as a part of the benchmark tax system in another" (European Commission, 2014).

Simply put, tax systems differ from country to country and, despite the OECD's progress in the area, there is no agreed international definition of the benchmark for means of comparison. This presents an opportunity for future work in this area as a lack of clarity can mask the true size of the costs of TEs and can lead to a lack of transparency. In the Irish context, recent work has sought to confront this challenge by reassessing the benchmark. This had the effect that a number of permanent and structural measures formerly considered as TEs have been reclassified to the benchmark. Furthermore, every TE now has its own "passport" explaining the rationale for its inclusion thus distinguishing each scheme in the category from the benchmark (Department of Finance, 2025e).

In addition, the Department of Finance of Ireland has introduced a template with criteria to assess whether a tax reducing measure is indeed a TE or belongs to a more structural part of the tax system. Some of the key questions to identify a TE are:

- Does it address a current market failure?
- Is it likely to be revoked?
- Is the economic/social rationale unlikely to exist for the foreseeable future?
- Has it been in place for less than 15 years?

For measures defined as TEs, different types of evaluation criteria can be employed. For instance, ex-ante evaluations take place before the planned TE's introduction. They focus on the justification for intervention as well as the measure's specific design. Some key questions for ex-ante evaluations include:

1) What is the objective of the TE?
2) What market failure is being addressed?
3) Is a TE the best approach to address the market failure?
4) What impact will the TE have from an equality and environmental perspective?
5) Is the data collected sufficient for the purpose of reviews?

[16] The contents of this section are a summary of the Department of Finance's Tax Expenditure Guidelines updated in October 2024 (Department of Finance, 2024a).

[17] As per ibid (p.11), the benchmark tax system must be understood "such that it is aligned, as much as possible, with the following principles: the benchmark should be clear and easy to understand; avoid situations of discrimination across similar taxpayers; avoid negative TEs; be consistent across taxes; result in TEs that are "actionable" (i.e., that can be reformed, if such a reform would be desirable from a tax policy perspective) and aligned with international tax rules and agreements".

In the case of ex-post evaluations, which involve assessing the TE's effect after its introduction, some key questions to consider are:

1) Is the TE still relevant?
2) How much did the TE cost?
3) What is the impact of the TE in general terms as well as from an equality and environmental perspective?
4) Was it cost efficient?
5) What additional data is necessary to improve further reviews?

Three distinct levels of evaluation are used corresponding to different cost ranges of TEs:

- **Level 1:** Schemes costing between €5 million and €20 million
- **Level 2:** Schemes costing between €20 million and €100 million
- **Level 3:** Schemes costing greater than €100 million

Evaluations often take the form of cost-benefit analysis (CBA), a key economic appraisal technique which uses a long term and broad view of the cost and benefits of a programme. This enables quantification of the net present value (NPV) of the benefit of an intervention, after taking account of negative effects caused by deadweight, displacement, and opportunity costs. If the benefits outweigh the costs, a benefit cost ratio (BCR) is arrived at which is greater than 1, meaning the scheme has a positive impact and should continue. The opposite is the case if the BCR is less than 1.

Where capacity is limited in undertaking a CBA, as well as other evaluation methods, priority should be given, in the following order, to:

- those TEs with an approaching sunset clause due to the legal imperative for a review to be undertaken;
- the costliest (Level 3) TEs. These are the TEs which have the greatest exchequer impact and therefore warrant the most frequent evaluations;
- schemes which are likely to exhibit significant deadweight – i.e., high quantities of the desired activity would have taken place even in the absence of the TE.

By contrast, less priority should be given to TEs where an evaluation has been undertaken more recently, and it is determined that none of the main factors which influenced the result of that review have materially changed.

Overall, Ireland's framework of TE assessment ensures a rigorous approach consistent with the State's priority of ensuring fiscal discipline is brought to all forms of public expenditure – direct and indirect alike.

5.3 Development of the guidelines

From an Irish perspective, the 2009 Report of the Commission on Taxation pointed out that there are valid reasons why a tax system might need to incorporate relieving measures and exemptions. It also highlighted that such measures, while reducing the tax base as compared with circumstances where they did not apply, may also be regarded as part of the structure of the tax system (Commission on Taxation, 2009).

While there has been ongoing evaluation of certain TEs in Ireland since 2006, this 2009 Report considered TEs in some detail by devoting 20 per cent of its content to the review of TEs (identifying 258 possible schemes and reviewing 241 of them). This extensive review was warranted since the volume and sectoral concentration of TEs undoubtedly contributed to the narrowing of the tax base in the run up to the Irish fiscal crisis. Moreover, tax reliefs, mainly related to property, were often granted in an ad-hoc and non-transparent manner leading to an inevitable misallocation of resources. Given the effects of the economic crisis on tax revenues and the associated imperative to broaden the tax base, the Government adopted a more critical policy stance towards TEs (Government of Ireland, 2014). This led to a number of principles limiting the future use of TEs, stating that the Government would:

- Support economic growth by ensuring any tax increases occur in the first instance by broadening the tax base through the elimination or curtailment of overly generous, poorly targeted or otherwise unaffordable tax reliefs.

- Use the tax system in limited circumstances where there are demonstrable market failures and where a tax-based incentive is more efficient than a direct expenditure intervention.
- Time-limit all TEs and subject those with higher costs to ex-ante evaluation.
- Conduct a regular programme of tax relief reviews using public consultation as appropriate and publish results.

The Department of Finance developed this work further with the report on TEs incorporating the Guidelines for Tax Expenditure Evaluation, published in 2014 (Department of Finance, 2014). These criteria, which were informed by international best practice, represent the framework that policymakers use when considering whether to advise the Minister to introduce a new TE or in reviewing an existing measure. These have provided structure to the sixty TE reviews that have been carried out since late 2014. The guidelines were substantially updated in 2024, working in cooperation with Revenue authorities to reduce the number of TEs to 117 (Department of Finance, 2024).

Following the publication of the Global Tax Expenditures Transparency Index (GTETI) and Global Tax Expenditures Database (GTED), as well as building on the recent internal progress in the reporting of TEs, the Department has implemented further changes to its reporting to increase transparency. In the first instance, this takes the form of a TE passport: a descriptive section for all TEs which includes key details such as the statutory reference, rationale for the measure not being part of the benchmark tax system, revenue forgone for the most recent year available, and details of the latest evaluation.

According to the 2025 Tax Expenditures Report, despite limitations, the main approach to costing an individual TE both in Ireland and internationally is to estimate the revenue forgone as a result of the policy measure, that is, a static calculation of the initial revenue cost (Department of Finance, 2025d). There are a few key caveats that must be borne in mind in using this approach to estimate the cost of TEs.

Firstly, behavioural responses are not captured in the cost estimates of revenue forgone. In other words, because models are not sufficiently developed, cost estimates make the standard assumption of no behavioural change following the introduction of (or alterations to) a TE.[18] Secondly, and by extension, estimates do not take into account the potential impact of TEs on the level of economic activity and, hence, on aggregate tax revenues. Another related issue is the difficulty in isolating the impact of a TE from other potential influences, such as the wider economic environment. Thirdly, TEs can and do interact with each other and these interactions are not reflected in the calculation of cost of individual TEs.

Finally, and in more practical terms, data is not available for some TEs. To put this into perspective, of the various reliefs, credits, etc., that are deemed within the TE boundary, the cost is unavailable for over a fifth of the measures (25 of the 117). Ireland is far from unique in this regard: the lack of data (especially for relatively small measures) is a feature of the tax system in many jurisdictions.

Considered together, these caveats can culminate to mean that the elimination of a particular TE may not necessarily generate the full tax revenue assessed to be forgone. Simply put, the aggregate cost of TEs does not represent the potential revenue gain in a (hypothetical) scenario in which all TEs are eliminated. In any case lags inherent in relevant data availability mean analysis is always, to some degree, behind the curve in assessing a scheme's effectiveness.

[18] While the revenue forgone method is the most common approach to estimating the cost of a measure, other approaches are, at times, used in Ireland that aim to take into account the impact of behavioural change. See also Department of Finance (2023).

5.4 Implementation in practice

When reviewing TEs, prioritisation is a key factor. The aforementioned "Tax Expenditure Evaluation – Updated Guidelines" provide for a proportionate approach to evaluation whereby the type and frequency of reviews undertaken depend on the cost and sunset of the relevant TEs.

TEs with an approaching sunset clause should be evaluated first, whereas less priority should be given where an evaluation has been conducted in the recent past and/or the main factors of the TE have not changed materially. Moreover, new TEs should undergo an interim review after three years.

In terms of process, the reviews are usually carried out in-house by Department of Finance staff (in cooperation with Revenue authorities and, where appropriate, other relevant departments). On occasion, the assessment is outsourced to the private sector, again with the input of relevant public sector departments where appropriate.

CASE STUDY 1: Ex ante review of the Farming Income Volatility taxation measure – 2025

In 2025 the Irish Government committed to examine a new farm income volatility taxation measure to safeguard farmers from market price fluctuations. The proposed measure would consist of an Income Tax relief for farmers in the form of a share of their gross annual income being deferred and not tax assessable until the time of draw down, which can occur in a subsequent tax year.

Forecasting cost for the income volatility measure is challenging; nevertheless, the average tax foregone over a five-year cycle was estimated, albeit only in respect of the dairy sector. Due to an estimated annual cost between €20 million and €100 million, the intermediate level of review (Level 2) was required for the evaluation.

An ex-ante review of the Farming Income Volatility proposal was published in 2025 (Department of Finance, 2025b). The review considers cost, existing measures, tax equity and tax administration, regulatory issues, and equality aspects in drawing conclusions about the proposal. The review did not find evidence suggesting that the introduction of a Farming Income Volatility measure would achieve a more favourable outcome for farmers and taxpayers than measures already in place. Moreover, income shifting to years where incomes are lower raises questions of tax equity for all taxpayers as it may be perceived as providing disproportionate financial benefit to a certain sector of the economy. For these reasons, the review concluded that the introduction of an additional income volatility measure, as proposed, could not be recommended.

CASE STUDY 2: Review of the Rent Tax Credit – 2025

The Rent Tax Credit (RTC) was introduced in Ireland in 2022, reflecting a policy effort to assist with affordability for private tenants. It consists of a reduction in the amount of Income Tax that the taxpayer is due to pay, and it is available to those who are renters of their principal private residence.[19]

The RTC is a relatively recent policy instrument, hence an interim review three years after its inception was required in accordance with the Department of Finance's Guidelines on Tax Expenditure Evaluation (Department of Finance, 2024). Moreover, its annual cost in excess of €100 million required the highest level of review (Level 3) in advance of its sunset date.

The report "A Review of the Rent Tax Credit" was published in 2025 (Department of Finance, 2025a). It draws initial conclusions regarding its appropriateness and value for money through the analysis of available administrative data from the first year the RTC was in place (namely, 2022). The review also considers the

[19] For further details on eligibility criteria, please refer to Revenue's webpage Rent Tax Credit.

context and rationale for the tax credit including the current Irish rental market as well as an assessment of the distributional impact of the tax credit. It was found that the most represented cohorts among RTC claimants are young adults between 21 and 40 years old, residents in Dublin, and single persons. Moreover, making the RTC more generous would only represent an additional benefit for taxpayer units in the sixth or higher decile, posing some concerns in terms of deadweight and the ability of these claimants to afford their rent even in absence of the RTC relief.

Evidence from the first review of the Rent Tax Credit illustrate that the policy instrument is popular among taxpayers, as nine out of ten eligible people claimed the relief in its first year of operation. However, the policy seems to address the symptoms but not the root causes of the rental market crisis (i.e., lack of housing supply), which poses questions about the opportunity to target Exchequer money towards alternative policy instruments to advance the supply of houses across the country.

CASE STUDY 3: Review of the Special Assignee Relief Programme – 2025

The Special Assignee Relief Programme (SARP) was first introduced in 2012 as part of the Irish Government strategy to promote Foreign Direct Investment (FDI) and to help ensure Ireland could compete internationally to attract highly skilled and mobile executives. The SARP is an Income Tax relief available to employees whose income is above a certain threshold and who are assigned from abroad by their employer to work in Ireland.[20] Changes were included in Finance Act 2022 which provided for the extension of the relief to 2025. Hence, a review of the programme was required due to the approaching sunset clause. Moreover, due to its annual cost between €20 million and €100 million, the intermediate level of review (Level 2) was applied, in accordance with the Department of Finance's Guidelines on Tax Expenditure Evaluation.

The report "Review of the Special Assignee Relief Programme" was published in 2025 (Department of Finance, 2025c). It includes a description of the programme, in addition to the analysis of international comparators and feedback expressed by a sample of stakeholders surveyed. Moreover, a CBA was conducted on the latest available administrative data (namely, 2023) and it broadly followed the approach used in a previous review of SARP published in 2019 (Indecon, 2019). The total cost of the SARP is based on Revenue's estimate of tax forgone, while the potential benefits included additional corporation tax receipts, R&D spillovers, additional personal income tax receipts, and wage benefits. Benefits are estimated to accrue over a ten-year period and are discounted at a rate of 4 per cent; moreover, parameters for the Shadow Price of Public Funds, Shadow Price of Labour, and the deadweight are applied in a manner consistent with the Irish Government's Infrastructure Guidelines.[21]

The review found that the annual number of SARP claimants and associated Exchequer costs are increasing. Moreover, the CBA undertaken indicates that the benefits of SARP outweigh the costs, leading to the conclusion that there is a policy rationale for extending the relief. On the other hand, the review recommended changes to make the administrative requirements more practical and to ensure that the measure continues to be appropriately targeted towards high-calibre talent.

5.5 Successes of evidence-based policymaking

Best international practice recognises the importance of regular reporting on TEs, including to promote transparency regarding the policy objectives and budgetary cost. Regular reviews of individual TEs – to assess their success, or to identify required actions to achieve the desired policy goal – are also part of the best practice toolkit.

[20] For further details on eligibility criteria, please refer to Revenue's webpage Special Assignee Relief Programme (SARP).
[21] See also Infrastructure Guidelines.

The annual report on TEs provides an important reference point for TEs in Ireland and, in doing so, facilitating a better understanding of TEs and their role within the Irish taxation system. The document lists the full universe of TEs and quantifies both the individual (where possible) and aggregate cost. Following on from previous analyses, the eleventh annual assessment was published in 2025 (Department of Finance, 2025d).

In addition to the annual report on TEs, over the course of each year a number of reviews of individual TEs and other tax related matters are carried out by, or on behalf of, the Irish Department of Finance. These assessments help to guide Government policy in ascertaining whether existing TEs and taxes should be amended, continued, extended or ended, or to otherwise review certain taxes (existing and proposed) or groups of taxes. In 2025, eleven TEs were reviewed – the vast majority through ex-post evaluations. Such reviews have helped inform the fiscal policy decisions of the Minister for Finance in relation to the taxation measures announced in *Budget 2026*.

For instance, the above-mentioned taxation measure on Farming Income Volatility was not introduced among the list of policy instruments announced in *Budget 2026*, consistent with the recommendations of the ex-ante review published in 2025 (Department of Finance, 2025b). Similarly, findings from the ex-post reviews of the Special Assignee Relief Programme (SARP) and the Rent Tax Credit appear to have informed the decision-making process about the continuation of the two policy instruments.

In *Budget 2026*, the Minister for Finance announced the extension of the SARP for five years, in addition to the increase in the minimum qualifying income to €125,000 to ensure the relief is appropriately calibrated, and the simplification of the administrative requirements. Those announcements align with the recommendations set out in the "Review of the Special Assignee Relief Programme" as a result of findings from the Cost-Benefit Analysis and the stakeholders' feedback. Namely to (i) extend the SARP, (ii) amend the 90-day employer certification deadline, (iii) extend the Annual Employer Return deadline, and (iv) increase the minimum salary threshold from €100,000.

The Rent Tax Credit is due to expire at the end of 2025 and the Minister for Finance announced its extension for a further three years in a bid to alleviate the pressure through what has been a "valuable tax measure" for many renters.[22] Indeed, according to the report "A Review of the Rent Tax Credit", individuals claiming the credit were more than 90 per cent of the initial estimate of beneficiaries made at the time of its introduction.

5.6 Lessons learned and ongoing challenges

Notwithstanding the relevance and the informative nature of these reviews, constraints remain. Consequently, the correct identification of existing limitations is essential to improve the process of reviewing TEs in the future. Some of the main lessons learned from the reviews recently conducted are explained below.

The review of the Rent Tax Credit and of the Special Assignee Relief Programme provide insightful examples of time lag in data availability, since both were reviewed in 2025, yet recent available data went back to 2022 and 2023, respectively.[23] In particular, the review of the Rent Tax Credit was based on the first year of the relief being in place, so it could not capture the effect of the credit being increased in subsequent time periods.

Data constraints also occur when administrative data is not stored and readily available in-house, rather it has to be retrieved from a different organisation. When reviewing tax policies, most of the administrative

[22] See also Statement by Minister Donohoe on Budget 2026.

[23] Although delays in data availability are inherent with the policy design of income tax measures – since taxpayers have four-year time to submit claims on their Income Tax Return – the majority of taxpayers choose to claim tax credits in the following year.

data is provided by the Office of the Revenue Commissioners[24], and generally comes in the form of statistics and/or aggregated data. This could delay the data collection process and pose limitations in the scope of the analysis. Ideally, a comprehensive dataset to conduct a rigorous economic analysis of a scheme would include anonymised detail of the beneficiaries of the TE under review.

Evaluating TEs has also proved to be challenging in relation to estimating deadweight and displacement effects, due to the difficulties in identifying counter-factual scenarios. A common method of estimating the deadweight of a TE is through surveys of stakeholders – as applied for the review of the Special Assignee Relief Programme – although this may lead to imprecise results, as there is no incentive for survey respondents to give accurate estimates.

According to the updated Guidelines for Tax Expenditure Evaluation, evaluations of TEs should also include considerations on the impact both from an equality and environmental perspective. In other words, they should assess whether TEs have a greater impact on some groups in society relative to others, and whether they have a climate-positive (green) or a climate-negative (brown) impact. However, this is not always feasible or relevant. For example, while considerations on equality could be made when reviewing the Rent Tax Credit and the Special Assignee Relief Programme, their environmental impact could not be assessed since these TEs have not been designed with environmentally focused objectives.

Finally, the evaluation process can also face resource constraints. In the case of reviewing TEs, the main ones proved to be related to allocated time and staff. When reviews are carried out in-house by Department of Finance staff, teams are often subject to competing business demands and frequent turnover of personnel, which can lead to inefficiencies in the learning curve and dispersal of know-how.

5.7 Next steps

The updated Tax Expenditures Guidelines provide a useful framework to inform the TEs review process and set out best practice. Through consistent alignment, a comprehensive and rigorous approach is adopted to ensure high standards in evaluation by the Department of Finance as well as by external policy analysts. The updated Guidelines have been consistently implemented in TE reviews since their publication in 2024, providing useful lessons concerning the main challenges and areas for improvement in the review process.

Going forward, well-designed planning and scheduling are recommended to optimise the deployment of resources, especially in terms of staff allocation to tasks. As multiple teams across different organisations are often involved in TE reviews, detailed coordination plans identifying responsibilities and timelines are essential. In light of the challenges mentioned above, consideration has to be given to potential constraints in the evaluation process as well as providing guidance for the prioritisation of reviews where capacity for conducting reviews is limited.

Of particular importance is the timely identification of data needs: according to the Guidelines, an appropriate data collection mechanism should be identified at the policy design stage. When this is not possible, an additional step should be included when starting to review a TE, ensuring the participation of all stakeholders in defining the data required for the evaluation, and – most importantly – its availability.

[24] Most commonly known as “Revenue”, it is the Irish Tax and Customs body.

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6

ADMINISTERING INVESTMENT TAX INCENTIVES

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This article draws on the International Monetary Fund's (IMF) Technical Note and Manual "Managing Tax Incentives in Developing Countries" (Pecho et al., 2024).

Much of the attention paid to investment tax incentives (from now on tax incentives) has focussed on their design and effectiveness in attracting domestic and foreign investment and fostering economic growth.[25] However, tax incentives also pose significant compliance risks, undermine governance—particularly in developing countries—and increase administrative and compliance costs, all of which add to the sizable revenue forgone that they often entail. Compliance risks may arise at any stage of their lifecycle—when tax incentives are granted, during their application, and upon their conclusion.[26] Addressing these risks requires a whole-of-government approach, engaging all public stakeholders involved in tax incentive administration.

A compliance programme targeting recipients of tax incentives should be viewed less as a tool to mobilise additional resources and more as a safeguard to protect revenue bases, prevent revenue leakages, and reinforce overall compliance. Profit-based tax incentives, for instance, can create distinct opportunities for profit shifting through abusive transfer pricing—even among domestic firms. In practice, however, critical aspects of tax incentive administration are frequently overlooked. Since reforms to streamline tax incentives often take time to gain political traction, public stakeholders, particularly revenue authorities, must work together to prevent abuse and ensure effective administration.

6.1 Enrollment into tax incentives

Tax incentives should be made available to all qualified domestic and foreign investors who meet clear and objective eligibility criteria established in tax legislation. These criteria may include the type of taxpayer or ownership structure, qualified industries, activities or locations, and nature of imported goods,

Box 6.1 A benchmark evaluation framework

$$NPV = -Investment_0 + \sum_{s=1}^{T} \frac{Cash\ Flow^s}{(1+\rho)^s}$$

Start estimating the net present value (NPV) of all projects excluding tax incentives, where ρ is a discount rate (reflecting opportunity cost). Tax incentives would be unnecessary (are redundant) for projects with NPV>0, even when those projects generate net social benefits. For unviable projects (with NPV<0), the NPV should be re-estimated including tax incentives and net social benefits. Tax incentives should not be granted for projects that continue not being viable. For viable projects, tax incentives are justified only up to the amount that makes NPV=0. Projects that deliver the highest relative rate of return on tax incentives (i.e., the ratio of the NPV of the project including tax incentives to the NPV of tax incentives granted minus one) should be prioritised. For the discount rate, a benchmark private rate of return can be used (e.g., a 10-year treasury bond yield) or estimate a social discount rate reflecting society's preference for current consumption over future consumption.

Source: Adapted from Schenone (2011)

[25] Investment tax incentives are a form of tax expenditure aimed at reducing the tax burden on eligible investment projects or firms, primarily through reliefs on corporate income tax, value-added tax, excises, and import tariffs. Their primary purpose is to stimulate, retain, or attract domestic and foreign investment with the intention to support development strategies (e.g., industrialisation, export-oriented activities, or investment toward priority sectors or regions), promote job creation, enhance productivity from absorption of new technologies and high skills, encourage markets to account for (positive) externalities (e.g., R&D, workforce training), among other objectives.

[26] See the tax expenditure policy cycle shown in the introduction of the flagship report.

among others. Under a self-assessment principle there would be no need for any prior approval from public stakeholders because self-assessment systems assign primary responsibility to comply with their tax and non-tax obligations to recipients. Ex-post, public stakeholders might exercise their powers to verify compliance with eligibility requirements.

When tax incentives are granted on a project-by-project basis, a thorough evaluation of candidate projects must be conducted following a clear and standardised procedure that adheres to the highest degree of transparency and accountability. Applicants should submit project-specific supporting documentation that enables proper evaluation, for example, business plans, feasibility study, and the project's financial model. Box 1 presents a benchmark evaluation framework based on project evaluation literature. In the absence of robust transparency and accountability standards, countries should avoid granting tax incentives on a project-by-project basis, as it creates governance challenges, including the potential for lobbying, rent-seeking, and corruption.

As the supporting information submitted at the time of the application is mainly based on projections—which could also be manipulated to present an NPV that supports the approval of tax incentives—it would be advisable to update it periodically with real data. This would allow not only verification of compliance with investment commitments but also the reassessment of initial evaluations to confirm that the tax incentives remain justified.

6.2 Tax and customs obligations

Regardless of any other registration obligation, recipients of tax incentives must register with revenue authorities following standard procedures (or taking advantage of single-window service facilities if they exist). A unique tax identification number must be assigned to all recipients of tax incentives under which all information related to the tax incentive must be recorded (type of tax incentive, legal reference, duration, taxes affected, etc.). Revenue authorities need to perform detailed registration checks on recipients of tax incentives (and their representatives, associated entities, related parties, and ultimate beneficial owners)—such as identity proofs, documentation crosschecking, and on-site visits to premises, with the intention to verify that recipients do not pose compliance risks.

Filing and reporting obligations should never be waived for recipients of tax incentives. Tax returns remain a critical means by which tax incentives are claimed. Preferably, recipients should file tax returns (including supplementary forms) using electronic means, which enable revenue authorities to perform validations at the front end. For instance, when capital allowance incentives or other expense-based incentives are claimed through tax returns, revenue authorities can check the recipient's eligibility or flag inconsistent self-reporting based on previous tax returns or third-party information. They are particularly relevant if recipients operate mixed activities, that is, some operating under incentives and others not. The general transfer pricing reporting obligations are sufficient to assist in identifying abusive transactions in connection with tax incentives. In the presence of tax incentives, it is important to ensure that this obligation extends not only to cross-border transactions but also to domestic transactions.

Customs authorities often face difficulties managing tax and duty reliefs on imports at the time of the clearance of goods because of limited knowledge of the recipients, the nature and volume of qualified goods granted with reliefs, and the conditions of the reliefs approved by granting authorities. So, all public stakeholders must work together to ensure government authorisations flow electronically and expeditiously at the time of the clearance of goods. It is also good practice to request compliance certificates from both the tax and customs authorities. These certificates indicate whether traders have good compliance records in relation to their tax and customs obligations. If the applicant is a new firm with no compliance history, the requisite of presenting a compliance certificate may be extended to representatives, shareholders, or related parties if needed. For fairness reasons and to level the playing field, non-compliant traders, especially repeat offenders, should not get the privilege of tax and duty reliefs.

Box 6.2 Administering Free Zones[27]

Free Zones may waive the application of taxes and duties but not the control and enforcement powers exercised by revenue authorities.

First, all zones should be located within the customs territory of the country, that is, customs-controlled designated areas, according to good practice promoted by the World Customs Organization (WCO). See WCO (2021).

Second, customs authorities should have the power to i) impose conditions in terms of control, resource availability and accessibility; ii) require construction/management security standards (including fences, entry/exit gate control, closed-circuit television camera systems, and any other standard that allows full monitoring of entries and exits); iii) set the requirements for data and records to be held by zone operators and investors (e.g., information on their economic activity within the zone, including imports, exports, supplies and purchases of goods and services, inventory log, and records of manufacturing process sufficient to reconcile inputs with outputs); and iv) access and inspect premises and records of zone operators and investors at any time.

Finally, all entities operating in Free Zones should be legally required to submit tax and information returns to tax authorities, even if they enjoy tax and duty reliefs. Even if firms do not owe taxes because of preferential tax treatment, tax filing serves key administrative functions such as monitoring and prevention of abuse. It's also vital for policy areas such as evaluation, since regular filing provides data to assess whether Free Zones' incentives actually deliver on job creation, exports, or investment goals.

Revenue authorities should be able to trace assets and inventories that belong to recipients of tax incentives and monitor their transfers, transformations, valuations, and variations through robust invoices and bookkeeping requirements, end-to-end traceability approaches, and sufficient powers to collect relevant data from third parties. On-site examinations by customs authorities are advisable to verify that goods imported under exemption regimes are in fact used for the purpose they were approved for by the granting authorities, assessing the reasonability of imported quantities to the recipient's size and the suitability of goods to the nature of its economic activity or the tax incentive granted—particular attention is needed for sensitive or suspicious goods. Desk reviews and post clearance audits, some of which conducted jointly with the tax authority, are also advisable to verify that goods imported with tariff reliefs were effectively processed and exported, were totally consumed without waste, or were taxed if sold on the domestic market.

6.3 Compliance risk management[28]

Risk-based compliance approaches would enable public stakeholders to focus on the most revenue-critical compliance risks and concentrate efforts on recipients that are most likely to exhibit non-compliant behaviours, thereby alleviating the burden on those with a good compliance history. Box 3 presents a selective list of tax incentives' compliance risks. Not all recipients pose the same level of risk—"one-size-fits-all" compliance approaches are rarely appropriate, so (scarce) resources should be allocated accordingly to actions of different frequency and intensity. An

[27] Includes free trade zones, export processing zones, special economic zones, development zones, and similar.

[28] For more information, see the "Compliance Risk Management" module of Virtual Training to Advance Revenue Administration. Virtual Training to Advance Revenue Administration is a joint initiative of four international organizations: the Inter-American Center of Tax Administrations (CIAT), the Intra-European Organisation of Tax Administrations (IOTA), the IMF, and the Organisation for Economic Co-operation and Development (OECD).

appropriate compliance risk management (CRM) framework would support the development of a holistic compliance strategy with a balanced mix of supportive, preventative, and enforcement actions targeting different risk populations. Structural changes like formulation of legislative reforms, IT capacity, skills development, and initiatives for simplifying administrative requirements (i.e., low-cost and user-friendly business processes redesign) are also needed.

The cornerstone of CRM is the development of a risk differentiation framework (RDF). The RDF may be viewed

Box 6.3 Selected tax incentive compliance risks

- Tax incentives can be granted to projects or firms that are not eligible. Examples include firms without an export or tourism orientation attempting to benefit from Free Zones' incentives or tourism-oriented tax incentives, respectively, just to operate in the local market without paying the corresponding taxes. Additionally, abuse also comes from firms that disguise their incorporation location to benefit from a location-based tax incentive or from firms created artificially solely to continue exploiting temporal incentives that are ending for a related party.
- Ineligible income or expenses can be disguised as eligible for the incentives. This includes firms that inflate expenditures to claim augmented tax deductions or credits, but also firms conducting mixed operations, where some operate under incentives while others do not, that manipulate income and expenses from one operation to another. When exemption certificates or cards are issued as part of VAT incentives, ineligible firms or persons can benefit from purchasing goods not linked to the incentivised activity without paying taxes, many times these are goods for personal consumption, like high-end vehicles or furniture.
- Incentives can be used to relocate taxed profits within the economic group by manipulating transfer prices. This includes firms not eligible for incentives (domestic or foreign-related parties) transferring profits to firms of the economic group that operate under the incentives through inflated interest payments, management service fees, royalties or reinsurance arrangements (premiums). Additionally, false documentation (such as fictitious invoices or contracts) is sometimes used to justify payments from firms in the same economic group for non-existent services provided by incentivised firms.
- Free Zones' firms can import raw materials and finished products without paying taxes, on the premise that these will be used in manufacturing processes for export. However, in practice, some Free Zones' firms sell these products in the domestic market without paying VAT or the corresponding import tariffs, or they divert them to ineligible end users. In other cases, local suppliers disguise domestic sales as exports to Free Zones' firms just to claim fraudulent VAT refunds. Free Zones' firms also provide services to the domestic market without paying taxes.
- Indirect tax incentives can pose compliance risks at the time of importation. For instance, risks usually arise from misclassification of imported goods to get reliefs improperly. Importation of certain goods also poses risks of diversion to ineligible end users or private consumption, like in the case of fuel, cement, and alcohol and tobacco products, which is exacerbated by smuggling practices.
- Incentives can be used to acquire assets on behalf of ineligible firms or ineligible activities. Examples include firms that acquire equipment with exemptions and then use it for non-incentivised activities; firms operating under incentives that acquire assets and then artificially sell, transfer or grant them to non-eligible firms within the same economic group (e.g., sale of assets between firms in the same group, followed by repurchasing them with incentives, transfer of rights over incentivised projects to new firms with the sole intention of extending the tax exemption without actual new investment); and firms that register investments not related with the incentivised activity, such as private residences or commercial spaces.

as an informed decision-making process to allocate available (scarce) resources to manage the most critical compliance risks. The journey starts with the systematic identification of compliance risks, which combine data-driven and statistical techniques, intelligence-based analysis, and hypothesising processes. Once recipients are assessed and prioritised based on the most critical risks, recipients are grouped according to a reasonable estimation of their relative risk level, bringing together risk indicators for both consequence and likelihood of non-compliance. This classification allows for the application of graduated, targeted, differentiated risk mitigation strategies. Recipients can be grouped in the following risk categories:

- higher risk (recipients that are likely to be non-compliant, and if they were, the revenue impact would be high),
- key "well-behaved" recipients (recipients that are unlikely to be non-compliant, but if they were, the revenue impact would be high),
- medium risk (recipients that are likely to be non-compliant, but if they were, the revenue impact would be low),
- and lower risk (recipients that are unlikely to be non-compliant, and if they were, the revenue impact would be low).

As indicated, risk indicators should account for both the consequence and the likelihood of non-compliance. Consequence is typically measured in terms of the revenue at risk, while likelihood is measured in terms of potential gains allegedly sheltered or earned through tax incentives. For the consequence of non-compliance, indicators may look at the value that best represent recipients' relative size (the higher the size, the higher the consequence) like total sales or purchases, gross income, profits, customs value of imports, total investment, and so on. For the likelihood of non-compliance, indicators may look at the ratio that best represents recipients' relative use of tax incentives (the higher the use, the higher the likelihood), like the ratio of corporate income tax revenue forgone to either investment, gross income, or profits; the ratio of value-added tax revenue forgone to total supplies; the ratios of import reliefs with respect to the customs value of imports, and so on.

More risk filters (or flags) could be added to further rank and prioritise recipients—particularly if the number of higher-risk or key recipients is larger than the public stakeholders' resource capacity. Among others, they can explore deviations from historical patterns and/or industry or economic group averages; compliance history (filing and payment history, assessments from previous tax and custom audits, penalties applied in the past, litigation history); the level of disclosure, cooperation, and engagement with public stakeholders; or specific concerns (related party dealings, use of secrecy and low-tax jurisdictions, foreign-owned recipients, complex organisational structures, systematic threats to the fairness of the tax system, and quality of corporate governance).

Metrics that give a rough sense of net direct benefits of tax incentives can also be useful for the RDF and are easy to perform as the information is usually available from different public stakeholders involved with tax incentive administration. For instance, the number of jobs created (or job gains) per unit cost of the tax inventive (revenue forgone)—preferably skilled labour, export, or output gains per unit cost of the tax incentive, and so on. They could require additional (targeted and specialised) reporting obligations like jobs created (e.g., by type of employment, region, and duration), net investment flows (e.g., capital injections, businesses created), assets allocated to the business activity by type (e.g., tangible, intangible), technology transfers, and progress reports on transformation of products, among others. This is more relevant when recapture rules exist because the recipient must repay the tax incentive, in full or partially, if it fails to comply with investment targets/commitments.

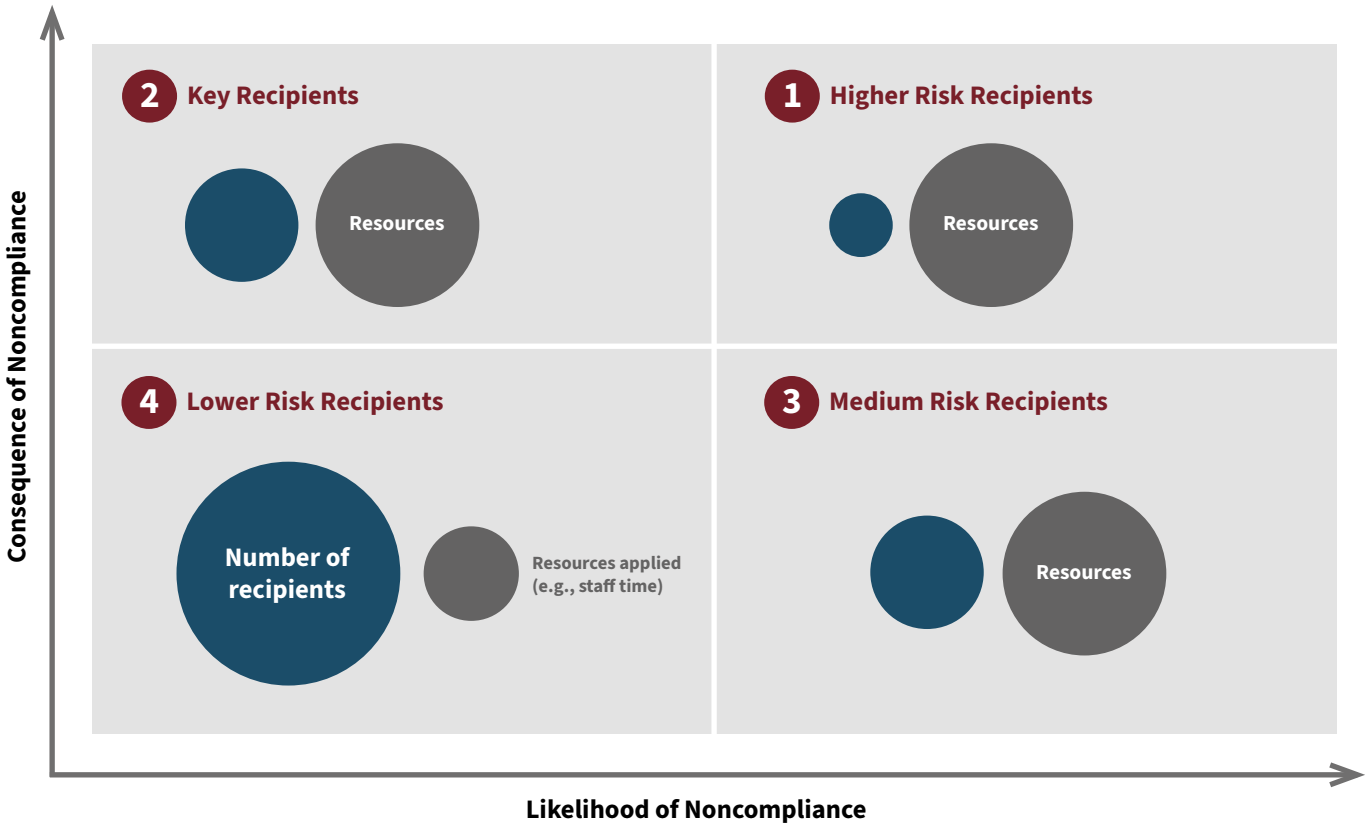
6.4 Graduated responses

Public stakeholders must apply the most cost-effective compliance strategies, that is, from making it easy for those who want to comply to credible enforcement against those who do not. The RDF provides guidance on the approach to follow for each risk population: high risk recipients demand a continuous review, key

recipients need to be continuously monitored, medium risk recipients are generally subject to a periodic review, and, finally, low risk recipients need periodic monitoring only. Figure 6.1 presents an illustration of the resource allocation.[29] These differentiated approaches influence the types of actions to be applied.[30]

High-risk recipients should be targeted with comprehensive "one-to-one" enforcement actions, for example, audits, investigations, and post-clearance customs audits. Audits and investigations must be initiated if risk concerns are not resolved with less intrusive reviews.[31]

Figure 6.1: Illustrating resource allocation driven by an RDF[32]



Source: Adapted from Aslett et al. (2024)

[29] Aslett et al. (2024) developed an Excel-based template for supporting compliance planning. It can be downloaded from the IMF's Revenue Portal.

[30] For further discussion, see Hamilton (2019).

[31] Risk reviews help gain clarity over the recipient's risk positions, circumstances, choices, and behaviors. Broad knowledge about recipients of tax incentives enables more accurate case selection for comprehensive or specific audits. They typically request additional disclosure of information from recipients of tax incentives to gain clarity over their affairs. Risk reviews enable an efficient use of resources because risk concerns are resolved or settled without necessarily conducting an audit or investigation (most of the time, an in-person meeting is sufficient). Note that a risk review can escalate into an audit or investigation at any time if needed.

[32] In the illustration spheres represent percentages. They reflect an underlying Pareto like distribution of risk likelihood and consequence (80/20 – low to high), which implies splitting recipients, for instance, into 4 percent higher-risk, 16 percent key, 16 percent medium-risk and 64 percent lower-risk. On the other hand, given the different intensity and frequency of risk treatments, the illustration uses a staff deployment of 30 percent higher-risk, 30 percent key, 30 percent medium-risk and 10 percent lower-risk. In practice, the RDF risk cut-offs for likelihood and consequence needs to be appropriately adjusted.

These are tools of last resort because they are labour intensive, more expensive, and could be disruptive to recipients' operations. Comprehensive (or full) audits should focus, for instance, on tax planning schemes or transfer pricing issues, and investigations whenever there is suspicion that a tax evasion or a tax fraud may have been committed. For other matters, it seems more appropriate to conduct less intrusive enforcement actions like desk audits, issue-based audits, or industry-based audits, for instance, as a part of a project involving various recipients.

Key recipients should also be targeted with "one-to-one" actions; however, these actions should integrate both service and assurance focusses—for instance, these recipients could benefit from tailored/specialised advisory services, outreach programmes within their industry and advisors' associations, clear interpretations of tax incentive legislation through public and private rulings, settlement options at earlier stages, and cooperative compliance approaches for those recipients that demonstrate a sound level of disclosure, cooperation, and transparency.[33]

Medium-risk recipients are typically subject to "one-to-few" deterrence and (ad-hoc) enforcement actions. For instance, these actions could target subsets of recipients with common characteristics with invitations for self-correction of discrepancies or inconsistencies in declared information, in-person meetings to request additional information and follow up on specific risk behaviours (engagement programmes), and voluntary disclosure invitations (not an amnesty). The dissemination of tax avoidance schemes helps to flag arrangements of concern and strengthens deterrence by increasing the recipient's perception that public stakeholders are aware of those arrangements and ready to apply a general anti-avoidance rule if available.[34]

Finally, low-risk recipients require primarily lower-cost ("one-to-many") interventions relying on service and education actions—in-person or virtual education, guidance, assistance, and information (e.g., practical compliance guidelines, taxpayer alerts), or outreach programmes (telephone contact, letters, emails, call centres), among others. Technology could play a significant role in alleviating staff-intensive functions through centres of excellence for, for instance, automated identification of non-filers for follow-up actions, tax return processing, large scale information cross-matching, etc.

6.5 Expiration of tax incentives

Public stakeholders must follow a complete recipients' due diligence process when a tax incentive comes to an end. This includes but is not limited to document reviews, on-site inspections, verification of pending tax and custom obligations, outstanding debt, etc. As part of this process, public stakeholders must be alerted to prevent recipients trying to accelerate/anticipate income to include it in the tax incentive timeframe or transfer deductions that cannot be exhausted to non-qualifying firms. It is desirable to perform a final cost-benefit analysis of tax incentives (see next section) to determine their effectiveness and use it as evidence to prevent initiatives to extend ill-designed, redundant or ineffective tax incentives. It is good practice to condition any renewal of tax incentives to the presentation of evidence of their effectiveness.

Recipients of ended tax incentives must be automatically deregistered from the databases of all public stakeholders. When information technology systems interoperate, deregistration is quite a straightforward task. If this is not the case, timely communications would prevent the possibility of continuing to benefit recipients with the tax incentive after the expiration date. Public stakeholders should have the ability to deregister ex officio all recipients with expired tax incentives when they do not voluntarily initiate

[33] Cooperative compliance approaches offer earlier or additional certainty in exchange for additional transparency and disclosure practices. Examples are Advance Pricing Agreements (APAs) to determine upfront the acceptable transfer price of a transaction in the context of tax administration or trusted trader programmes in the context of customs administration.

[34] Dissemination of aggregate results from audits and investigations in a systematic way is also an important component of a broader deterrence strategy.

deregistration. If needed, and within the limits prescribed by the law, revenue authorities must initiate collection actions over secondarily liable people to improve the recoverability of tax and customs debts if they exist.

Legislation should allow, for instance, the application of collection enforcement actions over those who are or have been managers of a business granted with tax incentives, irrespective of whether the business has ceased to exist. Similarly, if the business is transferred, the transferee should be liable for prior tax debts unless the transferor obtained a tax clearance certificate prior to the transfer. Recipients of tax incentives can be subject to the same penalties regime established for common taxpayers. However, tax incentive laws could also provide for more specific administrative or criminal infractions and sanctions related to potential abuse. This could also pave the way, for example, to establish recapture provisions (that is, the obligation to repay the tax incentive), or terminate the tax incentive when the recipient fails to meet investment targets and commitments or misuses tax incentives (e.g., fraudulent schemes). Such a special penalties' regime should set procedures for the application of the penalties, the corresponding statute of limitations, and the collection of unpaid taxes.

6.6 Key enablers

Individual mandates and responsibilities assigned to public stakeholders involved in tax incentive administration—notably investment boards, the Ministry of Finance or equivalent, line ministries, and revenue authorities—often hinder the adoption of an integrated compliance approach. Strong leadership is, therefore, essential to promote collaboration platforms that enable coordination across institutions. Effective coordination is facilitated by the establishment of formal or informal interministerial and interagency committees and working groups. These platforms allow staff to share knowledge, exchange information, redesign processes to eliminate redundancies, and develop holistic strategies for managing tax incentive compliance risks. For recipients, an integrated approach also reduces administrative burdens, improving efficiency and voluntary compliance.

Clear delineation of roles and responsibilities is essential. Investment boards and line ministries play a key role in promoting investment or granting licenses, while international good practice assigns ministries of finance the responsibility for approving tax incentives, as they oversee the country's fiscal framework. Revenue authorities, in turn, should focus on enforcing compliance with tax and customs obligations. Regardless of their institutional setting, public stakeholders involved in tax incentive administration must have in place sound governance arrangements, for example, independence from political direction, minimum accountability and transparency practices, for preventing vulnerabilities to corruption. Effective tax incentive administration also requires that the fundamentals of good revenue administration be in place as it cannot function independently of the overall revenue administration—if the fundamentals of good tax and custom administration are lacking, tax incentive administration is unlikely to succeed. Adequate resource conditions are also needed—covering staffing, training, and infrastructure (modern IT systems)—to build institutional capacity to enable them to develop comprehensive knowledge of tax incentives from policy, legal, and administrative perspectives.

Tax incentive administration must follow objective, rule-based (non-discretionary), decision-making criteria to ensure consistency and fairness. Accordingly, all actions by public stakeholders must have a firm basis in legal instruments. That is why it is important to prescribe tax incentives in tax legislation (or in a single tax law when multiple taxes are affected), which also enhances tax certainty for investors. Public stakeholders must enforce legislation fully and impartially, regardless of the status of the investor involved. Enforceable legislation promotes compliance and facilitates administration. Therefore, public stakeholders should collaborate to pass regulations and other administrative instruments (circulars, directives, instructions, binding public rulings, and other subsidiary and ancillary instruments) needed for further clarifying the application of tax incentive legislation. Clear, simple and enforceable tax policy design and legislation are key.

Finally, tax incentives should be subject to periodic, public, and evidence-based evaluations. A good practice

is to publish a comprehensive report comprising a stocktaking of all tax incentives approved by laws and other instruments, with an estimation of the revenue forgone. In turn, this may help to establish limits on the overall size of tax incentives in a similar way to a ceiling on aggregate spending.[35] Tailored to different levels of data availability and analytical capacity, systematic development of cost-benefit analysis is needed to verify that tax incentives accomplish their economic and social goals and are affordable—like any other spending programme, tax incentives need to be evaluated as part of a routine external oversight. In a nutshell, these evaluations verify that tax incentives' social benefits (e.g., genuine additional investment, employment creation, spillover effects, etc.) outweigh social costs (e.g., revenue losses from redundant investment, compliance and administrative cost, distortive resource allocation, etc.). Beer et al. (2022) point out that only a small number of countries produce these evaluations regularly, though recently they have been attracting more political attention.

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[35] There are few options for setting limits within the budgetary process. One option could be to include a cap on the annual growth of revenue forgone in a fiscal rule. For example, in South Korea, the proportion of tax expenditures (relative to the sum of revenue and tax expenditures) must not grow by more than a certain percentage based on the average of recent years. Another possibility could be to include the revenue forgone in the budget allocation assigned to different line ministries. In this way, seeing that they could not commit spending against that portion, they would be more eager to rationalize their sector's tax expenditures in exchange for tangible resources for direct spending.

7

THE CRITICAL NEED FOR DATA IN UNDERSTANDING TAX EXPENDITURES

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7.1 Introduction: data as the foundation for effective TE policy

Reliable data are fundamental to the design, implementation, monitoring, and evaluation of tax expenditures (TEs). Tax records, policy documents, household surveys, inflation data, and other administrative sources, together form the foundation for understanding how TEs affect revenue, behaviour, and welfare outcomes. Yet, in many countries, data are treated as an afterthought rather than as a prerequisite for sound fiscal policy. Access to relevant data is often constrained, and in some cases, they simply do not exist because they are not collected or systematically maintained.

A persistent challenge in assessing the effectiveness and efficiency of TE is the scarcity of internationally comparable data. As noted by Swift, Brixi and Valenduc (2004), limited availability and inconsistent definitions of TEs make it challenging to compare their scale and impact across countries. The Global Tax Expenditures Database (GTED) has made substantial progress in this area by cataloguing official data and increasing transparency (Redonda et al., 2025). While differences in benchmarks and methodologies still limit cross-country comparability of revenue-forgone estimates, comparative assessments—such as the number of provisions, years covered, and reporting frequency—are now possible.

The data gap is particularly acute in developing countries, where fiscal space is constrained and governments are increasingly seeking evidence on the costs and impacts of TEs. High-income countries have established reporting systems and a long history of empirical evaluation; however, their approaches cannot be replicated, as TE policies are country-specific and shaped by local tax structures and administrative capacities. For developing countries, building reliable data systems is therefore central to designing cost-effective, transparent, and accountable TE regimes.

Technological advances—such as digital tax systems, e-filing, and big data analytics—offer new opportunities. Many countries already collect digital administrative data through systems such as the Automated System for Customs Data (ASYCUDA) and electronic tax filing platforms for value-added tax (VAT) and income tax. However, these data are often underused, viewed mainly as tools for assessing tax liability rather than as a rich resource for empirical analysis and policy design. Where administrative data exists, they may still lack the granularity required to evaluate specific TEs or measure intended outcomes.

Investing in digital infrastructure and data integration is costly, but the returns are high. Improved administrative data can serve as a substitute for scarce survey data, enhance accountability, and enable governments to design more efficient, equitable, and transparent fiscal policies.

This chapter examines the current status of TE data and data use, with a regional focus on Uganda and other Sub-Saharan African countries. It explores the data needs for TE design, monitoring, and evaluation, the challenges countries face, and emerging solutions—such as secure data labs—that can strengthen evidence-based policymaking for more effective TEs.

7.2 Data systems as cornerstones of credible TE reporting

Across countries, the quality and scope of TE reporting reflect the strength of underlying data systems. Where tax, customs, and administrative records are fragmented, TE reporting remains incomplete and inconsistent. Where data are integrated and institutionalized, countries can produce detailed, transparent, and regularly updated estimates that inform policy. The Global Tax Expenditure Transparency Index (GTETI) confirms that jurisdictions with well-established data frameworks consistently demonstrate higher transparency and reliability (Redonda et al., 2023).

Experiences from South Africa, Uganda, and Zambia demonstrate how stronger institutional collaboration enhances TE reporting. Closer coordination between their Ministries of Finance and revenue authorities has enabled the linking of customs exemptions with VAT returns and income tax data, strengthening the reliability of estimates, especially for import-related expenditures. Yet major gaps persist, such as

incomplete submissions from investment authorities, inconsistent exemption classifications, the absence of a centralized digital TE registry, and continued reliance on manual compilation methods (MoFPED, 2025; MFNP, 2024).

Estimating forgone revenue for corporate income tax (CIT) and VAT typically involves combining administrative and macroeconomic data, such as supply–use and input–output tables. Uganda's TE report draws on data from the URA eHub, ASYCUDA, and the Uganda Bureau of Statistics (UBOS); however, limited information on domestic VAT supplies constrains the comprehensiveness. Zambia's report similarly uses tax returns and Additional Procedure Code (APC) data from ASYCUDA to estimate import duties and VAT. South Africa's report mentions the use of the South African Revenue Service (SARS) tax administrative data (National Treasury, 2024).

Within the East African region, Uganda's reporting capacity is moderately advanced, while Rwanda stands out for its stronger tax–customs integration and analytical capacity, as does Ghana (TaxDev, 2025b; 2025c). Many other Sub-Saharan African countries still produce high-level reports based mainly on legislative schedules, offering limited quantification because their administrative systems cannot yet support detailed analysis. These contrasts highlight how data integration affects not only the frequency but also the credibility of TE reporting—and, by extension, the usefulness of TEs as a fiscal policy tool.

7.3 Building evidence for effective and accountable TE management

South Africa has seen a proliferation of research on TEs in the last 10 years since the government initiated access to tax data for research through a secure data facility, the National Treasury Secure Data Facility (NT-SDF)[36]. South Africa exemplifies how secure data access can catalyze TE research and policy innovation. Established in 2014, the facility started with only five data sets. It now includes 29 comprehensive datasets spanning payroll certificates, personal and corporate tax returns, value-added tax, customs, excise duties, third-party financial submissions, and Common Reporting Standards reports. Several studies look at the TEs administered through the Personal Income Tax system[37], other studies look at the Corporate Tax incentives[38], several studies look at an employment tax incentive policy in South Africa[39].

The Uganda Revenue Authority launched its data lab in 2022.[40] A similar pattern begins to emerge in Uganda regarding TE analysis. Research by Musoke et al. (2023) utilizes the URA firm panel and a new incentive dataset, developed using the World Bank Global Tax Incentives Database methodology and merged with URA lists of tax holiday beneficiaries. The authors investigate whether tax holidays and accelerated depreciation increase investment, jobs, and profits in the economy, or simply accrue benefits to the firms.

Using matched firm-level CIT, customs, and PAYE data in Uganda, Namunane et al. (2023) evaluated the introduction of a 10-year corporate tax holiday for strategic investors. The analysis—possible only through

[36] More information: https://sa-tied.wider.unu.edu/data.

[37] See Nhamo S & Mudimu E. (2020), Redonda A & Axelson C. (2021), Jansen A, Ngobeni W & Steyn W. (2023) and Chingwere F, Clance M, Nicholls N et al. (2024).

[38] See Steenkamp A, Schaffer M, Flowerday W et al. (2018), Kari S, Khoza L, Manjezi N et al. (2019) and Calitz E, Muwanga-Zake E, Sithole A et al. (2020).

[39] See Ebrahim A, Leibbrandt M, Ranchhod V. (2017), Marcelin I, Brink D, Fadiran DO et al. (2019), Budlender J & Ebrahim A. (2021) and Ebrahim, A., & Pirttilä, J. (2025).

[40] More information: https://www.wider.unu.edu/about/secure-research-data-lab-uganda.

high-quality administrative records—demonstrated how TEs influenced investment behaviour, though the absence of fields identifying specific exemptions constrained a full cost-effectiveness assessment.

Integrating administrative records with other datasets expands the scope for evaluating who benefits and at what cost. Household survey data are beneficial for analysing consumption patterns across income groups and testing whether VAT exemptions and zero ratings, intended for poorer households, are effectively targeted. Tools such as the recently developed UGAMOD-TAX microsimulation model leverage both standard surveys and detailed PAYE, presumptive tax, and register data. The model enables policymakers to quantitatively evaluate the fiscal and distributional effects of potential tax reforms (See Barugahara et al. (2025) for a detailed description of the model).

For a comprehensive TE evaluation, information from other sources is also essential. Data from national statistics agencies, such as inflation series, help compare TEs across time; sectoral data from line ministries (education, health, environment) allow assessment of specific provisions; and information from agencies such as vehicle registration authorities, investment promotion bodies, and free-zone administrations provides insights into sector- or asset-specific incentives. These diverse sources, summarized in Table 7.1, collectively provide a more comprehensive evidence base for assessing the fiscal, efficiency, and distributional effects of TEs.

As more countries make use of their tax data for analysis or establish secure data labs, the potential for systematic TE analysis will expand. These labs provide secure, anonymized access to administrative data, enabling collaboration among governments, researchers, and development partners. Investing in integrated data infrastructures and secure analytical environments can transform TE reporting from a compliance exercise into a pillar of evidence-based fiscal governance thereby supporting more effective, equitable, and accountable TE policy.

Table 7.1: Data sources for TE reporting and evaluation

Data source	Role	Data frequency	Source
Tax records: VAT, CIT, PIT, PAYE, exports, imports	Estimate TEs, usage, and revenue forgone	Monthly, annual, or transactional	Administrative data from tax authorities
TE policies	Identify TE provisions and eligibility	Annual	Tax laws and ministry documentation
Household survey data	Assess consumption and distributional impacts	Every 1–5 years	National statistics offices
Inflation data	Enable comparison of TEs over time	Monthly	National statistics offices
Sectoral data (health, education, environment)	Evaluate sector-specific TE outcomes	Monthly or annual	Line ministries
Motor-vehicle data	Assess the impact of TEs on registrations/imports	Transactional	Registration agencies or tax authorities
Free-zone data	Evaluate the impact of TEs on local economies	Annual	Local governments or ministries
Investment data	Evaluate investment-related TEs	Annual	Investment authorities or finance ministries

7.4 Meeting the data challenge: fragmented data, institutional silos and capacity

The effectiveness of TE analysis depends fundamentally on the availability and quality of data on tax bases, taxpayers and use of TEs—a challenge repeatedly highlighted in flagship reports (von Haldenwang et al., 2023) and policy briefs (Redonda et al., 2024; Qibthiyyah et al., 2023).

In Uganda, the primary challenge is the completeness of tax data rather than access to it. For instance, income-tax incentives for industrial parks, free zones, and strategic investments often lead to firms either failing to file full returns or omitting exempt transactions, resulting in under-reported TE values (MoFPED, 2025). Another example is the CIT return includes a field for "exempt income" but does not specify the type of exemption claimed. This creates a structural limitation for TE analysis because the necessary detail for identifying specific incentive claims is not captured. Amending return formats to include these identifiers would significantly improve TE costing and evaluation. For personal income tax, the Uganda MoFPED combines remuneration data for exempt employees with aggregate salary estimates and PAYE effective rates to approximate forgone revenue. While functional, this method underscores the need for more disaggregated, employee-level data. Gaps also persist in VAT data on deemed supplies for aid-funded and extractive-sector projects, particularly for subcontractors and final beneficiaries, leading to underestimation and, therefore, limiting cost–benefit analysis.

In many countries, tax data exist but remain under-utilised due to institutional silos and confidentiality restrictions. In Senegal, for instance, researchers and policymakers struggle to quantify the fiscal cost of VAT exemptions and investment incentives, as data are dispersed across agencies and access is tightly controlled (MoF Senegal, 2024). This gap has important policy implications: evidence suggests that VAT exemptions on basic goods often benefit higher-income households who purchase from formal, registered outlets rather than the intended low-income beneficiaries (von Haldenwang et al., 2023; Redonda et al., 2024). Even in high-capacity systems, such as those in the United Kingdom, the challenge is one of granularity rather than access. The HM Treasury publishes aggregate data, yet micro-level information needed for distributional assessment remains confidential. These examples show that data barriers are not limited to developing economies; they reflect the universal tension between transparency, privacy, and administrative priorities.

Integration challenges compound the problem. In Uganda, investment-related exemptions are difficult to verify because Uganda Investment Authority (UIA) data are not digitally linked to URA systems, while in Senegal, misalignment between tax-administration data and national accounts complicates comparison with macro-fiscal indicators and international benchmarks (MoF Senegal, 2024). Across various contexts, agencies such as the URA, UIA, the Uganda Bureau of Statistics (UBOS), and sectoral ministries maintain separate datasets with limited interoperability, resulting in many customs duty remissions and investment-related VAT exemptions being unreported (MoFPED, 2024). Similar coordination hurdles are observed in South Africa between the South African Revenue Service (SARS) and the National Treasury, as well as in the UK, where procedural fragmentation limits parliamentary scrutiny. Overcoming these silos will require stronger data-sharing protocols, harmonized metadata standards, and clear institutional mandates to ensure that TE analysis becomes a shared responsibility rather than a fragmented exercise.

Data availability and quality alone are not sufficient; analytical capacity and institutional cooperation are equally vital. Within Uganda's MoFPED and URA, only a small team is responsible for data extraction and TE estimation. Although collaboration with TaxDev has strengthened skills, analysis remains primarily descriptive such as estimating forgone revenue rather than modelling behavioural or distributional effects (MoFPED, 2025; von Haldenwang et al., 2023). South Africa provides a partial contrast: the National Treasury's in-house modelling capacity enables microsimulation of policy changes, but expertise is concentrated in a few specialists, raising concerns about sustainability. In Senegal, the Ministry of Finance continues to rely heavily on donor-funded consultants

to produce TE reports (MoF Senegal, 2024). Building durable institutional capacity, therefore, remains an urgent priority.

These intertwined challenges—fragmented data, institutional silos, and capacity limitations—underscore that strengthening TE data systems is not just a technical exercise but a governance reform.

7.5 Solutions and best practices for enhancing data use in TEs

A central element in addressing the challenges mentioned before is the harmonization of data frameworks. Countries should adopt standardized and well-documented procedures for collecting data on TE policies, enabling comparability across both years and, wherever feasible, countries. Establishing minimum standards for data collection methodologies, documentation practices, and data curation processes is crucial to achieving this goal. These standards should ensure that key information—such as the tax base, beneficiaries, TE category, policy objectives, and legal references—is collected systematically and consistently. Furthermore, the minimum standards help address capacity constraints and ensure the sustainability of TE reporting.

The data collection and curation process must be transparently documented to strengthen data quality, reproducibility, and long-term sustainability. High-quality TE reporting relies heavily on the accuracy and completeness of underlying administrative tax records. Ensuring harmonization across these data sources—both over time and across variables—is fundamental for producing reliable and comparable TE estimates.

Strengthening technical and analytical capacities is a prerequisite for improving data harmonization, documentation, and overall reporting quality. Investments in capacity development should be understood not as one-off initiatives but as sustained commitments to professional development and institutional strengthening. Effective TE reporting requires skilled personnel who can manage, curate, and update tax and TE data regularly (biannually or annually). This includes the ability to integrate administrative data sources into coherent and harmonized datasets. Establishing dedicated units or teams within ministries, revenue authority and including people from other relevant agencies can help ensure the continuity and institutional memory necessary for consistent TE monitoring and analysis.

Particular attention should be given to training and knowledge transfer. In many low- and middle-income countries, expertise in data management, statistical analysis, and policy evaluation is concentrated among a small number of individuals, posing risks to sustainability. Targeted training programs should therefore focus on building broad-based competence in areas such as statistical software, impact evaluation, and best practices in data curation and documentation. Partnerships with international organizations, academic institutions and administrations in high-income countries have the potential to further enhance these efforts by providing technical support, peer learning opportunities, and access to comparative methodologies. Equally important is South–South learning, which allows countries facing similar institutional and capacity constraints to share contextually relevant solutions. Initiatives such as exchanges between Uganda, Zambia, and South Africa on secure data lab design, or collaborations through regional networks like the African Tax Administration Forum (ATAF), United Nations Economic Commission for Latin America and the Caribbean (UN-ECLAC) and the Addis Tax Initiative (ATI), demonstrate how practical, peer-driven knowledge transfer within the Global South can accelerate progress and strengthen ownership of data reforms.

To enhance data use in TE and policy analysis, countries could consider establishing their own secure data or research labs. These facilities provide a secure environment for accessing tax data and analyzing TEs while ensuring compliance with strict confidentiality and data protection standards. Secure data labs form a key component of a sound data governance framework, ensuring that sensitive information is anonymized, securely stored, and accessed only under regulated conditions. By facilitating timely and reliable access to high-quality data, such labs can enhance the accuracy and frequency of TE reporting, as well as the

quality of policy evaluation, as seen in South Africa and are emerging in Uganda.

Further examples include the recently launched secure data lab in Zambia[41] and Senegal, where the Tax Administration has developed a data lab for research projects implemented by both the tax administration and academia. Plans are in place to institutionalize its use in operational policy work, thereby enhancing data quality and harmonization (Czajka et al., 2022). Honduras established a data lab as a strategic initiative of the Revenue Administration Service (SAR) of Honduras, to transform administrative data into key inputs to strengthen institutional management and inform the design of evidence-based public policies.[42] Armenia has also initiated steps to establish a data lab that provides researchers with access to administrative data, conditional on projects contributing to evidence-based tax policy and the development of analytical capacity within the revenue administration in Armenia.[43]

Sustained investments in harmonization frameworks, human capital, institutional capacity, and data infrastructure are key solutions to evolve from ad hoc TE reporting into regular, consistent and complete TE analysis. Embedding best practices within regular administrative functions and promoting collaboration frameworks will foster a culture of data-driven public financial management, improve transparency, and enable more informed decision-making in the design and reform of TEs.

7.6 Conclusion: The path forward for data-driven TE policy

The journey toward comprehensive and effective management of TEs is inseparable from a sustained commitment to data excellence. Experiences across countries, especially South Africa and Uganda, show that addressing the persistent challenges of availability, quality, and integration demands more than technical adjustments. It requires long-term investment in people, institutions, and partnerships. Building analytical capacity within ministries of finance and revenue administrations, strengthening coordination across agencies, and embedding TE data systems within broader public financial management frameworks are essential steps. Equally, establishing clear mandates for data sharing and harmonization ensures that TE analysis becomes a routine element of fiscal policy design rather than an occasional reporting exercise.

Making TE data and reports publicly available creates institutional transparency, enhances accountability, and fosters research collaboration. In Uganda, annual TE reports submitted to Parliament have spurred informed debate on fiscal trade-offs and increased confidence among development partners. Public access to these reports has fostered media engagement, parliamentary debate, and civil-society scrutiny of fiscal trade-offs between revenue forgone and developmental impact. Transparent reporting also reinforces a country's credibility with international partners, such as the IMF and the World Bank, signaling prudent fiscal management and a commitment to fiscal reform.

Sustained reporting and analysis, over time, helps build a body of evidence. Research from the NT-SDF in South Africa produces evidence on TEs that can no longer be ignored by governments and policymakers. TEs have been studied from several angles, considering

41 More information here: https://www.wider.unu.edu/news/unu-wider-support-zambia-revenue-authority-establishes-secure-tax-data-research-lab.
42 More information here: https://www.sar.gob.hn/laboratorio-de-datos/.
43 See Asatryan (2025).

various alternative scenarios for policy reform, and have been conducted by policymakers, in partnership with policymakers, or independently.

Future opportunities lie in broadening the scope of administrative data and applying new analytical tools. Linking tax records with complementary datasets—such as social protection registries, business licensing systems, education or labour-market data—can illuminate the behavioural and distributional effects of TEs. Emerging methods, including machine learning and AI-based analytics, can help identify anomalies, detect leakage, and assess targeting efficiency. However, realising this potential requires strong data protection frameworks and governance mechanisms to ensure that innovation goes hand in hand with integrity and privacy.

The path to data-driven TE policy is not simple. It involves changing entrenched administrative practices, securing political buy-in, and coordinating across agencies with competing mandates. Yet the benefits such as greater transparency, improved fiscal outcomes, and better alignment of TEs with development priorities, far outweigh the transitional costs. Even modest early investments can generate quick wins: integrating customs and VAT data, introducing metadata standards, and publishing summary TE tables can all build momentum. Over time, as data systems mature and secure data labs expand, the collective capacity to produce credible, comparable, and policy-relevant TE estimates will grow.

Ultimately, improved TE reporting and data use are not ends in themselves but instruments for better governance, more equitable tax systems, and stronger social contracts. By embracing a culture of data excellence, collaboration, and transparency, countries can transform how TEs are designed, monitored, and evaluated—turning data from a technical challenge into a cornerstone of effective, accountable fiscal policy.

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8

TARGETING OF TAX EXPENDITURES IN THE VAT

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8.1 Introduction

The value-added tax (VAT) is a crucial source of tax revenue in almost all countries, especially low and middle-income countries. However, significant VAT revenue is typically foregone as a result of the widespread provision of tax expenditures (TEs). TEs in the VAT take the form of either reduced (including zero) rates or exemptions. Most commonly, TEs are introduced in an attempt to achieve distributional goals – such as through the provision of reduced rates or exemptions on food or other products that are disproportionately consumed by poorer households. However, TEs are often also provided for certain goods or services that are perceived to provide social, cultural, or other benefits. Meanwhile, some exemptions are applied for pragmatic reasons, such as the exemption of small businesses to alleviate disproportionate compliance costs. This chapter focuses on a fundamental question in determining the appropriateness and effectiveness of TEs in the VAT: whether they are a well targeted mechanism for achieving their stated policy goal.[44]

8.2 Common tax expenditures in the VAT

As of 2024, 175 countries have adopted a VAT (OECD, 2024). Most VAT systems tend to have multi-rate structures, with one or more reduced rates (including zero rates) applying to a significant number of goods and services.[45] Bosnia and Herzegovina, Chile, New Zealand and Uzbekistan are notable exceptions that have adopted broad-based single-rate systems.[46]

Thomas (2024) provides a summary of common reduced rates, albeit limited in coverage to OECD countries (see Figure 8.1). This highlights, in particular, the prevalence of reduced VAT rates on food products – with 31 OECD countries (out of the 37 that have a VAT) applying a reduced VAT rate to at least some (non-restaurant) food products. Other common reduced rates introduced for distributional purposes apply to pharmaceutical products, water supply, refuse and sewage services, energy products, and children's clothing or shoes. An increasing number of countries now also apply reduced rates to feminine hygiene products. Due to its large budget share, the reduced rate on food is by far the most significant reduced VAT rate.

Reduced rates based on 'merit good' arguments are commonly granted for books and newspapers, as well as cinema, theatre and concerts, and to a lesser extent amusement parks, museums, sporting events, sporting facilities and zoos. Many countries also provide reduced rates with a less clear policy rationale.

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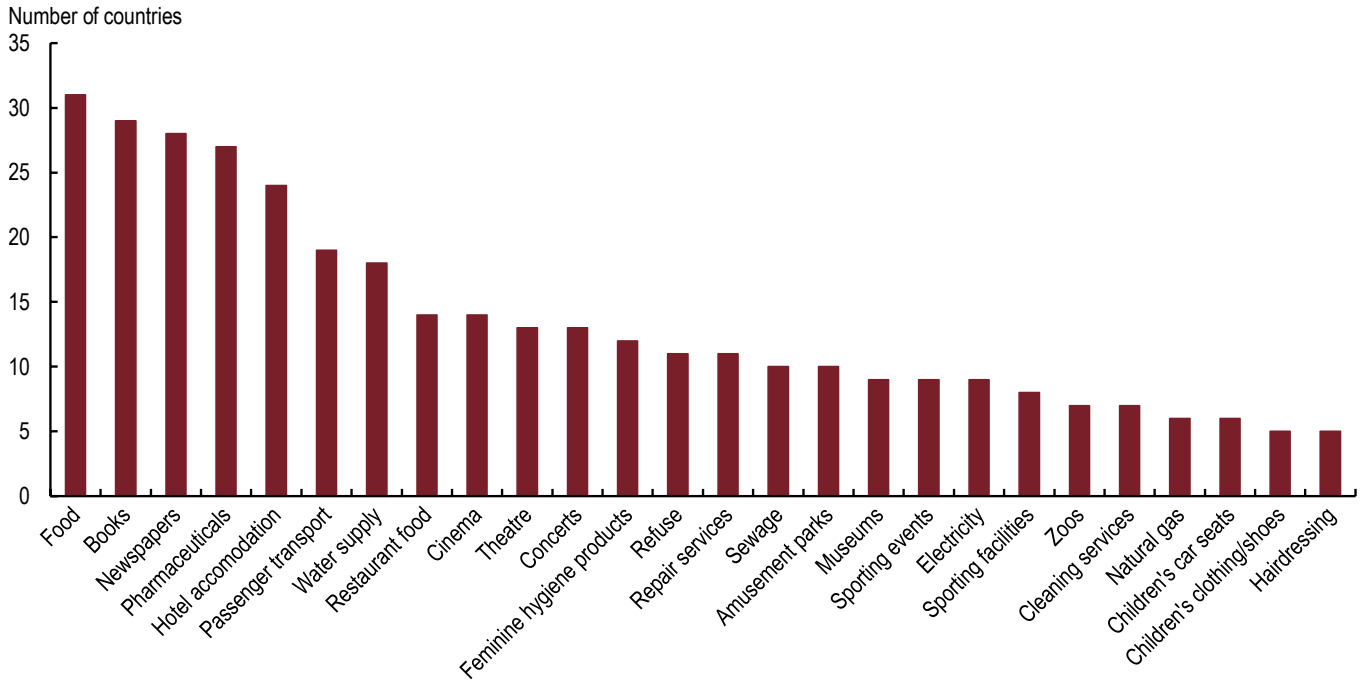
44 This chapter draws heavily on Thomas (2024), which provides a broader review of the various arguments for and against the use of reduced VAT rates.

45 A theoretically 'pure' VAT system would operate a single rate on almost all consumption, and hence any deviation from this benchmark would be considered a tax expenditure. This is the general approach taken in this chapter. In practice, many countries take a more pragmatic approach and consider a range of deviations as part of the benchmark, while others differ even further from a 'pure' approach. One clear exception under either approach is the zero rating of exports, in accordance with the destination principle which ensures neutrality in cross-border trade. Pragmatic exemptions, such as for small businesses, margin-based financial services, and international transport, are also arguably justifiable as part of the benchmark even under a 'pure' approach.

46 These 'single rate' countries do still zero-rate exports and international transport, as per the standard international practice. A number of other countries, such as Egypt and Korea, also have single rate VAT systems but apply a wide range of exemptions in place of reduced VAT rates.

Figure 8.1: Common reduced VAT rates in OECD countries as at 1 January 2022



Source: Thomas (2024), drawing on information in OECD (2022) and European Commission (2021).

The most common of these in OECD countries are for hotel (and/or other) accommodation, restaurant food, and passenger transport. Reduced rates for hotels and restaurant food may, for example, be introduced to encourage the employment of low-skilled workers.[47] Reduced rates for (domestic) passenger transport may be motivated by environmental concerns (as may, e.g., reduced rates for insulation and solar panels), but they may also be justified on employment or distributional grounds – on the basis that they lower the cost of commuting to work.[48]

Exemptions, meanwhile, are commonly applied for a range of expenditure items, typically for either distributional, social, or pragmatic reasons. For example, in the EU, a wide range of expenditures are exempt under the VAT directive. In contrast, single rate countries such as Bosnia and Herzegovina, Chile and New Zealand tend to have the fewest. Most countries exempt certain sectors considered essential for social reasons – particularly education, healthcare and charities. In some cases, practical reasons have led countries to use exemptions – for example, most countries exempt financial services due to the difficulty in determining the appropriate margin on which to apply VAT. While low-and middle-income countries tend to apply reduced rates on a similar range of products as in Figure 1, they also often apply exemptions in place of reduced rates on these products. For example, Indonesia provides an exemption for fresh agricultural goods and Egypt provides an exemption for a wide range of food products, rather than a reduced rate.

The application of VAT registration thresholds also reduces the size of the VAT base. These are generally aimed at removing small businesses from the tax net

[47] Some countries also introduce reduced rates on services that are close substitutes with home supply in order to encourage (market) employment, such as repair, domestic cleaning and hairdressing services.

[48] International air travel is universally zero-rated due to the practical difficulty in assigning taxation rights to a service that may occur across multiple countries.

where the associated compliance and administrative costs would be disproportionate relative to the amount of VAT revenue generated. The level of these thresholds varies significantly across countries.

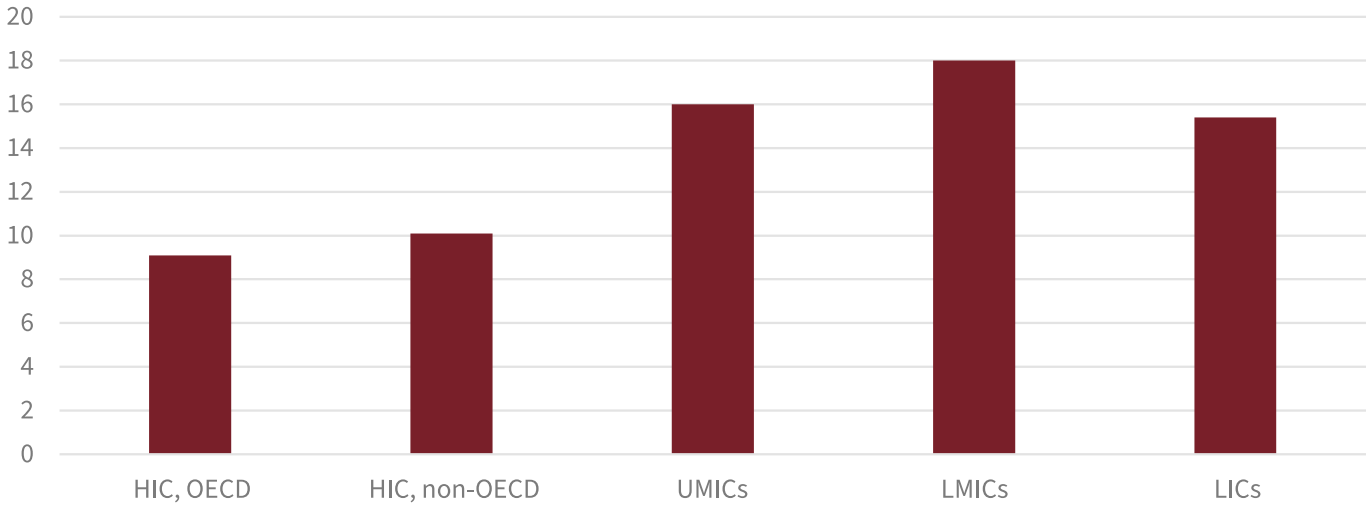
These TEs result in significant revenue loss. Figure 8.2 shows estimates from the Global Tax Expenditures Database (GTED) covering 98 countries across the income spectrum. While high-income OECD countries give away around 9% of tax revenue in VAT TEs, low and middle-income countries give away between 15-18% of tax revenue, on average. This pattern also, in part, reflects the greater reliance of low and middle-income countries on the VAT as compared to high-income countries.

8.3 Targeting poor households

A large number of empirical studies draw on household budget survey microdata to examine who benefits from reduced VAT rates and exemptions, consistently finding them to be poorly targeted tools for supporting poorer households. This is also consistent with results from optimal tax theory that find no distributional role for reduced VAT rates when other direct mechanisms – such as the personal income tax or targeted direct transfers – are available (Atkinson and Stiglitz, 1976).[49] In particular, two large scale empirical studies consider who benefits from reduced VAT rates in nine European (IFS, 2011a) and 20 OECD countries (OECD/KIPF, 2014). Both studies find that reduced VAT rates as a whole have a progressive impact, but that richer households benefit more in aggregate terms than poorer households. IFS (2011a) emphasize a key reason for the overall progressive results is the application of reduced rates to the majority of food in all nine countries.

OECD/KIPF (2014) also find significant variation in the distributional impact of reduced rates across expenditure types. Reduced rates typically introduced

Figure 8.2: Estimated revenue foregone from VAT tax expenditures, 2018-2022



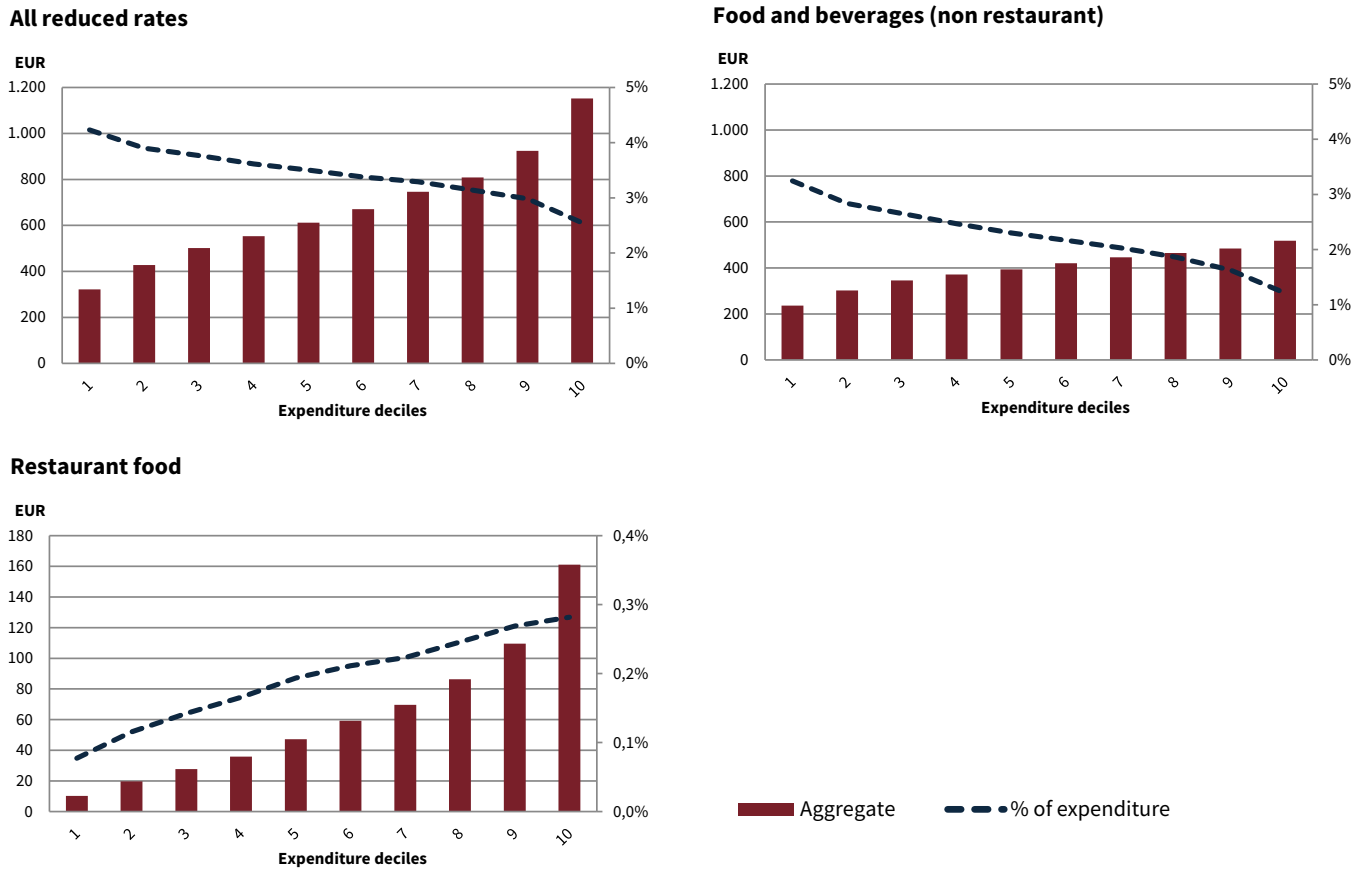
Source: Redonda et al. (2025)

[49] See Thomas (2024) or Mirrlees et al. (2011) for summaries of the optimal indirect tax literature.

to achieve distributional goals – such as on basic food, water supply and energy products – are found to have a small progressive effect, but to be poorly targeted. This is illustrated in Figure 8.3, which shows a progressive pattern (dotted line) for reduced rates as a whole, and on (non-restaurant) food, but, crucially, that higher deciles benefit more and more in aggregate terms from reduced rates (solid bars). The result for food drives the overall results due to the dominance of food in total consumption in these 20 countries. Meanwhile, reduced rates typically introduced to address social, cultural and other non-distributional goals – such as reduced rates on books, restaurant food and hotel accommodation – are often found to be so poorly targeted that they have a regressive effect (as is illustrated for restaurant food in Figure 8.3).

More recently, Warwick et al. (2022) examine the overall distributional impact of reduced VAT rates and exemptions in six low and middle-income countries (Ethiopia, Ghana, Senegal, Sri Lanka, Uzbekistan and Zambia). They find both progressive and regressive results, depending on the country, but again find that TEs are badly targeted – providing significant benefit to richer households. A range of other single-country microsimulation studies find similar results either for reduced VAT rates as a whole or for selected reduced rates such as on food.[50]

Figure 8.3: Distributional impact of reduced VAT rates in 20 OECD countries



Source: OECD/KIPF (2014)

[50] For example: Davis and Kay, 1985, for the United Kingdom; Leahy et al., 2011, for Ireland; Caspersen and Metcalf, 1994, for the United States; Creedy, 2001, for Australia; Ball et al., 2016, for New Zealand; Cseres-Gergely et al., 2017, for Hungary; and Gaarder, 2018, for Norway.

Informality

Recent analysis by Bachas et al. (2024) has also found that the presence of informality further weakens the ability of TEs on food to target poor households. Bachas et al. (2024) estimate informality Engel curves (relating the informal budget share to log total expenditure) for 32 low and middle-income countries. They find that informality decreases as household expenditure increases, thereby creating a degree of progressivity in the VAT in low and middle-income countries.[51] However, they also find (very small) positive slopes on formal food Engel curves in some low-income countries – implying that formal budget shares on food increase with income, and hence that even a reduced rate on food could be slightly regressive in some low-income countries.[52]

Pass-through

A standard assumption in most studies is that the VAT is fully passed on to consumers in prices (and so the savings from a reduced VAT rate are also passed on to the consumer). However, the theoretical and empirical literature suggests that this may not necessarily be the case, casting further doubt on the ability of reduced VAT rates to effectively target poorer households. For example, a detailed review by IHS (2011) finds a wide range of empirical results in the literature, covering full, less than full, and more than full pass-through. They conclude that full pass-through is more likely to be found in more competitive markets and for broader VAT reforms.

More recently, Benzarti et al. (2020) find evidence for European countries of stronger pass-through of VAT increases than VAT decreases. Benedek et al. (2019) find roughly full pass-through of standard VAT rate changes, but only around 30 per cent pass-through for changes in reduced VAT rates. Unlike Benzarti et al. (2020), they find no significant evidence of asymmetric responses to price changes in European countries. Gaarder (2018) finds that the introduction of a reduced VAT rate on food in Norway resulted in full pass-through to prices. Benzarti, Garriga and Tortarolo (2024) find close to full pass through from a temporary VAT cut in Argentina, for chain stores, but significantly less pass through into prices in independent stores. Meanwhile, at the end of the temporary reduction, while prices in formal stores returned to their pre-tax levels (which were enforced by a price cap), prices overshot in independent stores, suggesting a negative impact in the longer term for poorer households that are more likely to shop at smaller stores.

VAT TEs vs cash transfers

While the above studies show that reduced VAT rates are badly targeted at the poor, a better alternative policy instrument needs to be found in order to justify their removal. In theory, cash transfer programs (whether implemented through the tax or benefit system) should be able to better target support to poorer households than reduced VAT rates. Not only can they target support based on income, but also on family characteristics, such as number and age of children, to further target support at households most in need. This expectation is supported by a range of studies that show cash transfers to be superior to reduced VAT rates at providing support to poorer households. These include, for example, Crawford et al. (2010) and Mirrlees et al. (2011) for the United Kingdom, and Thomas (2022) for New Zealand.[53]

Even in a low and middle-income country context, where targeting ability of cash transfer programs is more limited, recent studies also find cash transfers to be preferable to reduced rates, albeit with scope to further improve the targeting of those cash transfer programs. For example, Warwick et al. (2022) find

[51] Similarly, Jenkins et al. (2006) find that informality creates progressivity in the VAT in the Dominican Republic.

[52] The slopes of formal food Engel curves tend to become negative for upper middle-income countries in their sample. As would be expected, the slopes of total (i.e. formal plus informal) food Engel curves are found to be negative in all countries covered.

[53] See Thomas (2024) for more detail on this literature.

that the existing cash transfer programs in the six low and middle-income countries they examine are better targeted at poor households than reduced VAT rates and exemptions. But they also emphasise that the targeting of these programs remains imperfect, and would require significant improvements in both generosity and coverage in order to compensate for base-broadening VAT reforms. Strikingly, their simulation results show that even adopting a universal benefit would better target poor households than the reduced VAT rates (and exemptions) in place in these countries. For South Africa, Van Oordt (2018) finds that, despite their limitations, extending the existing cash transfers would better support poor households than reduced VAT rates. Also for South Africa, Gcabo et al. (2019) find that better targeting would be achieved with the introduction of new cash transfers rather than the extension of existing cash transfers.

Other novel targeting mechanisms are also being implemented in a number of countries. For example, several countries in Latin America have adopted 'personalised' VAT regimes, leveraging increased digitalization to provide rebates or 'cashback' to poorer households for VAT paid (see, e.g., Barreix et al., 2022; de la Feria and Swistak, 2024). Uzbekistan has recently introduced a similar VAT cashback scheme for households on the social register. Given the relative novelty of these schemes, detailed assessments of their performance, including targeting ability and associated compliance risks, should be a priority for future research.

8.4 Targeting externalities

Another common argument for the introduction of reduced VAT rates is to encourage consumption of 'merit goods' that generate positive externalities. On this basis, many countries provide TEs for a range of goods and services with perceived cultural, social, or environmental benefits. While the basic rationale to internalize a positive externality is valid, a key question arises, as it did with redistribution, regarding whether a reduced VAT rate or exemption is the most effective way of achieving the desired policy goal. Various authors have suggested this is unlikely to be the case (see, for example, IFS, 2011b; IHS et al., 2015; Abramovsky et al., 2017). IFS (2011b), for example, argue that "[i]f the social problem one wishes to address is affected by business use of a product, or is associated with the consumption of only particular kinds of consumers (e.g. the poor or children), or is unrelated to the price of the product, then applying reduced rates may not be an appropriate policy response" (p554).

The first of these points relates to the ability of businesses to claim input tax credits, meaning that a reduced VAT rate will not lower the price a business pays for a product. As such, where business consumption of a product (e.g. passenger transport, insulation or solar panels) produces positive externalities, then reduced rates – which only incentivise final consumers – will not be well targeted. Second, as reduced VAT rates apply equally to all consumers, they will not be well targeted if under-consumption is specific to a subset of the population – for example, under-consumption of books by young people or poor people.

Perhaps most significantly, reduced VAT rates provide a larger subsidy for more expensive purchases. This implies that, for a reduced rate to be well targeted, the positive externality should be correlated with the price of the product subject to the reduced rate. However, in many cases this will not be true. For example, reading an inexpensive paperback book will not provide less social benefit than reading an expensive hard-back version of the book. Similarly, taking a taxi is unlikely to provide a greater reduction in environmental cost than taking a bus for the same journey (assuming an internal combustion engine in both cases). IFS (2011b) suggest better targeted mechanisms are likely to be available in many cases. For example, income-based or age-based subsidies are likely to better target concerns about under-consumption of certain products by young or poor people. Subsidies can also be made available to businesses.

While not specifically a targeting issue, the common application of reduced VAT rates to restaurants and hotels also warrants mention. These TEs are often justified on the basis that they can boost demand for low-skilled workers and reduce structural unemployment (Copenhagen Economics, 2007; IFS, 2011b, IHS et al., 2015). However, this argument is not supported by empirical evidence. For example, Copenhagen Economics (2007),

in a general equilibrium analysis for the EU as a whole, find such targeted reductions to have little impact on total low-skilled employment, largely because only a small fraction of all low-skilled workers are in these targeted sectors. They also find that applying the standard VAT rate to all sectors currently benefiting from reduced rates would be likely to create a similar boost in demand for low-skilled workers, but without distorting consumption decisions. Ongoing work by Celiku et al. (2025) draws on administrative data to examine the impact of an 8 percentage point reduction in the VAT rate in Peru on restaurants and hotels. Their preliminary analysis finds a large reduction in VAT revenue, but no clear impact on prices, sales or employment.

8.5 Additional implications of exemptions

Both zero rates and exemptions result in no VAT being charged on outputs. However, unlike a zero rate, an exemption also results in the denial of input tax credits, thereby increasing production costs and resulting in VAT being embedded within the prices of goods and services. As a result, exemptions have several adverse impacts above and beyond those of zero rates. It is well understood that they lead to production distortions and create incentives for self-supply. But they also exacerbate targeting concerns due to their non-transparent impact on final consumer prices. In this regard, exemptions have both direct and indirect effects. The direct effect lowers the price of the exempted good (or service), as no tax is paid on the value added at the final stage in the supply chain. The indirect effect increases the prices of other goods (or services) that use the exempted good as an input. In both cases, the size of the effect is unclear as it depends on the amount of VAT embedded in prices which will vary depending on the underlying supply chain patterns. Recent World Bank research (Chandler et al., 2025) attempts to provide some insights on these direct and indirect effects.

Chandler et al. (2025) develop a VAT model based on input-output tables and household budget survey data for 29 European countries. To examine the direct effect of exemptions on final prices, they model a hypothetical 'benchmark' VAT system that imposes a 10% rate on all consumption in each of the 29 countries, and then simulate, one-by-one, the introduction of exemptions on 45 different commodity groups. If no exemption was in place, all effective VAT rates would be 10%, whereas if a zero rate was imposed the effective VAT rate would be zero (assuming full pass-through). They find that the 29-country average effective VAT rate on final consumption of exempted goods and services varies from 9.7% for construction to just 0.7% for mining and quarrying of energy related products (Figure 8.4). For 29 of the 45 commodity groups, the average effective VAT rate ranged from 3%-5%. Significant variation was also found across countries, highlighting the significant degree of uncertainty regarding the size of the direct effect of the exemption.

To examine the combined impact of direct and indirect effects, they also calculate effective VAT rates on total final consumption for each exemption. They show that the indirect effect always increases the effective VAT rate on total consumption, countering the direct effect to some extent. For 16 of the 45 commodity groups, they find that the indirect effect is large enough to outweigh the direct effect leading to an effective VAT rate on total final consumption slightly above 10%. In other words, these exemptions actually raise revenue (they are negative tax expenditures).

To examine the distributional implications of their results, Chandler et al. (2025) link their input-output model results to household expenditure quintile data. They focus particularly on the impacts of an exemption on agriculture as a typical example of an exemption introduced for distributional purposes. In most countries, they find a progressive pattern from the exemption of agriculture – with average effective VAT rates on total consumption increasing across quintiles (Figure 8.5). This is an unsurprising result given the typically greater share of agricultural products (especially basic food products) in the total consumption of poorer households as compared to richer households. Nevertheless, the total differences in effective VAT rates across quintiles is small, highlighting the very limited impact of an exemption on a single commodity relative to total consumption.

Furthermore, progressivity is not guaranteed. In Denmark, the Netherlands and Norway, a roughly proportional pattern emerges. These results highlight that,

even for an expenditure type typically disproportionally consumed by the poor, the indirect impact of an exemption can still push the overall impact away from progressivity. The Czech Republic and Spain illustrate further the unpredictability of an exemption, with the overall effective VAT rate increasing slightly above 10% for the third, fourth and fifth quintiles. This result is also driven by the indirect impact of the exemption, with the impact of the embedded and cascaded VAT on consumption of processed food products and restaurant food appearing to outweigh the reduction from these quintiles' direct consumption of agricultural products.

Figure 8.4: 29-country average of the effective VAT rate on final household consumption of an exempted commodity (compared to a 10% benchmark)

Source: Chandler et al. (2025)

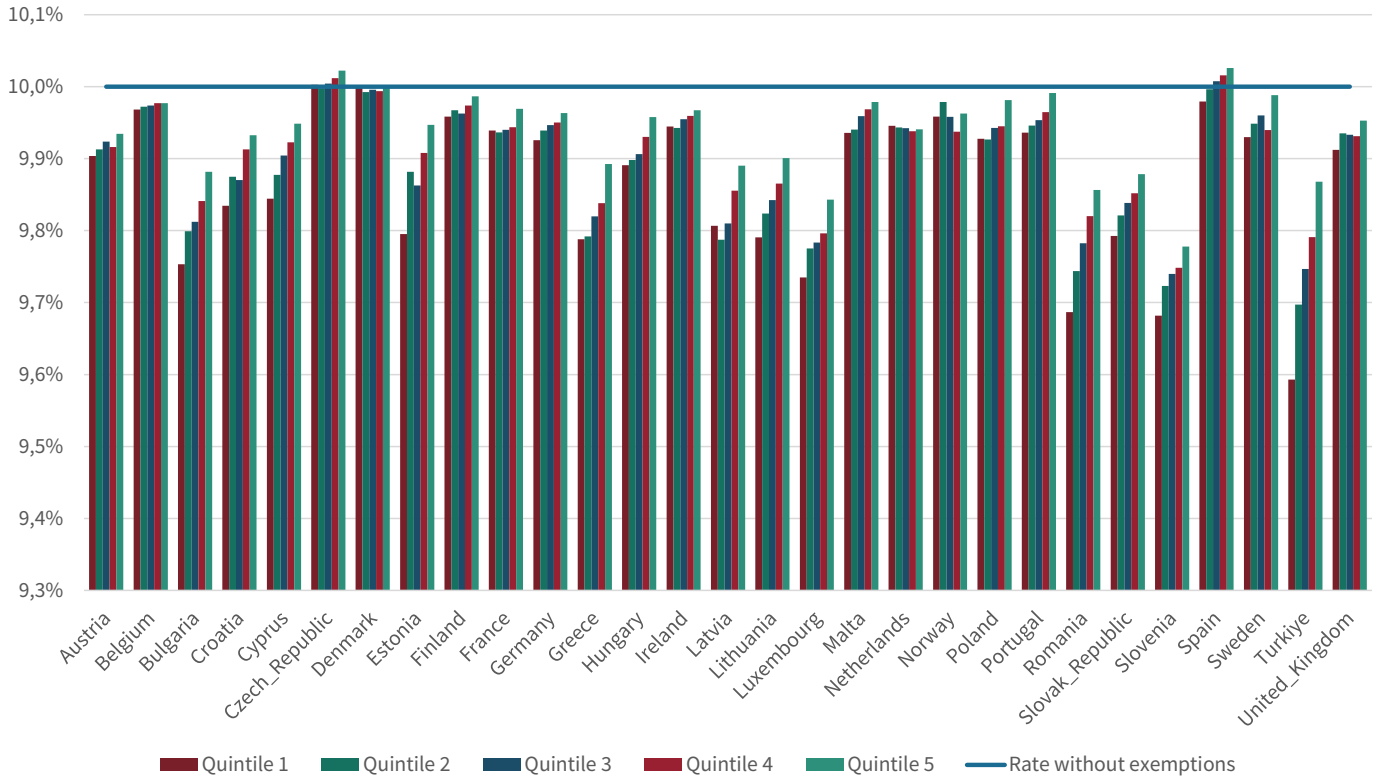
These results also highlight that, even when an exemption has a progressive impact, exemptions are still a badly targeted way to support poor households. Aside from the Czech Republic and Spain, in all other countries, all quintiles – including the richest – benefit from a reduction in VAT below the 10% standard rate due to the agriculture exemption. This is the same result as highlighted earlier for reduced rates on food, leading to the strong conclusion that directly targeted mechanisms such as targeted tax credits or cash transfers, where implementable, will be better tools to address distributional concerns than reduced rates. The results in Chandler et al. (2025) show that this argument holds also for exemptions, but with the further concerns on top that the extent of the reductions is not transparent, and that there is also potential for the indirect effects of an exemption to counter any progressivity achieved.

8.6 Conclusions

This chapter has detailed the strong empirical evidence showing reduced VAT rates and exemptions to be ineffective policy tools for targeting support at poor households, especially when compared to targeted cash transfer programs. It has also shown them to be poorly targeted tools for encouraging consumption of merit goods, and an ineffective way of increasing low-skilled employment. New World Bank research has also highlighted that targeting problems are exacerbated with exemptions, as compared to reduced rates, due to their non-transparent direct impact on final consumption, and their similarly non-transparent and potentially counterproductive indirect impact when applied to intermediate inputs.

These findings have significant implications for tax reform in both developed and developing economies. In particular, where countries have the administrative capacity to effectively implement targeted cash transfer programs, they should use these programs to

Figure 8.5: Average effective VAT rate on total household consumption by quintile from exempting agriculture



support poorer households instead of using reduced VAT rates. Countries should also consider removing reduced VAT rates aimed at non-distributional goals where a more effective instrument is available to achieve the particular policy goal. Meanwhile, the use of exemptions should be restricted to addressing pragmatic concerns, such as the disproportionate compliance costs of small businesses and the practical difficulty in taxing margin-based financial services.

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9

CORPORATE TAX INCENTIVES AND CLIMATE CHANGE MITIGATION

Luisa Dressler (OECD)

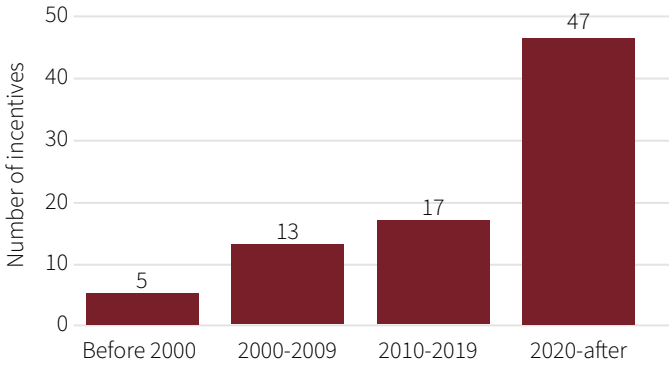
The opinions expressed and arguments employed herein are solely those of the author and do not necessarily reflect the official views of the OECD or its Member countries. This chapter is based on published and forthcoming work by Luisa Dressler and Ross Warwick with excellent research support by Stergios Vakalis and David Gamboa Solano (Dressler & Warwick, 2025; Dressler & Warwick, forthcoming 2026; OECD, forthcoming 2026).

Corporate tax policy influences business investment decisions and therefore can influence choices for more or less energy- and carbon-intensive options. Steering business decisions may be an intentional policy objective, for example to support research and development (R&D) activities, stimulate investment or reduce greenhouse gas (GHG) emissions, or can arise unintentionally. A sizable literature establishes the importance of corporate income tax (CIT) features for investment decisions, starting with Hall and Jorgenson (1967; 1969)[54], but the effects of CIT features on climate-related investments and ultimately GHG emissions remains understudied.

This chapter reflects on the interaction between CIT and GHG emission reductions. It discusses concepts and policy designs and highlights research gaps, with an emphasis on policy effectiveness. The baseline CIT system matters for climate-related investment, though impacts depend on project and investor characteristics (Section 1). Targeted tax incentives promoting the use of climate-related assets or activities have become increasingly common: Preliminary information from 45 OECD and partner economies[55] shows that 73% use such measures, with about half introduced since 2020 (Figure 9.1; OECD (forthcoming 2026)). These incentives raise familiar concerns, but new considerations become relevant too (Section 2).[56] Their effectiveness in stimulating *additional* investment and reducing GHG emissions depends on instrument-specific design and targeting as well as the broader economic and policy context (Section 3).

Figure 9.1: The use of climate-related CIT incentives[57] has increased over time

Start dates of climate-related incentives across 45 economies in 2025, number of incentives by period



Source: Preliminary information from OECD (forthcoming 2026)

Note: Sample includes preliminary information on climate-related CIT incentives from 45 OECD, G20 and selected partner economies operational on 1/01/2025.

[54] A recent literature review is provided in Jacob (2021).

[55] At the current stage. the information includes preliminary data on climate-related tax incentives across all 38 OECD countries and Argentina, Barbados, Jamaica, Paraguay, Peru, South Africa and Uruguay. The data collection for G20 countries is ongoing.

[56] This chapter focuses on incentives for adopting or deploying climate-related assets and activities, as opposed to incentives for technology development (e.g. R&D incentives) or general incentives.

[57] Climate-related tax incentives here include targeted tax provisions that yield a deviation from the standard CIT treatment in a country resulting in reduced or postponed tax liability by promoting the development and deployment of assets or other activities that contribute to climate change mitigation.

9.1 The baseline CIT system matters for climate-related investment[58]

Private companies invest in climate-related technologies when it is profitable to do so, and this may be affected by CIT. Taxation affects investment decisions both at the intensive margin (how much to invest?) and at the extensive margin (whether, where or in which alternative to invest?). The impact of CIT on investment is heterogeneous across asset and firm characteristics and influenced by broader economic, policy and legal contexts. The discussion below highlights some key policy messages, noting that further research is needed to quantify the size of these effects.

A CIT system that is less distortive with respect to marginal investment decisions can support climate-related investments.

Alongside several other factors, the tax system is a determinant of the cost of capital.[59] It is well-established that features of CIT can raise the cost of capital for investors, thereby disincentivising the quantity of investment 'at the margin'. These findings should be expected to carry over to climate-related investment, even if empirical evidence in this specific area is missing. Minimising such investment disincentives from CIT can ensure that more investments that are profitable before tax remain profitable after tax. The extent to which marginal investments are climate-related depends on a country's industrial structure and technological needs, existing assets, technological progress, as well as co-existing policies amongst others.

Certain CIT features may unintentionally discourage climate-related investments that are risky, costly or undertaken by smaller, newer or domestic businesses.

Baseline CIT features – such as the treatment of financing costs, capital costs, and losses – can influence some investments more than others. Capital-intensive, irreversible and high-risk projects, including innovative climate-related technologies (e.g., direct air capture, green hydrogen, or other transformative industrial applications), are particularly exposed to debt bias[60], unindexed capital allowances or restrictive loss carryover rules. These effects are amplified in high inflation and interest rate environments, though their precise magnitude remains uncertain.

Smaller, newer, and domestic firms tend to feel these investment biases more strongly. Smaller and newer firms are more likely than large incumbents to rely on equity financing and may have greater need to carry forward losses when undertaking (climate-related) investments, as they may lack other income to offset losses. CIT disadvantages for smaller firms and new entrants may also slow the process of creative destruction and the competitive pressure necessary to accelerate the net-zero transition, because large incumbents are typically less motivated to drive disruptive innovation.[61]

The effectiveness of baseline CIT reform in supporting climate-related investment and ultimately reducing emissions depends on the policy and economic context.

Investment-friendly CIT reform can stimulate investment, climate-related or not. When the ultimate policy objective is to reduce emissions, such reforms are most effective when paired with complementary

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58 This section summarises key findings from Dressler and Warwick (2025).

59 See Creedy and Gemmell (2015) for a review of the concept of the cost of capital and its relation to taxation.

60 Debt bias refers to a situation where tax systems favour the use of corporate debt over equity financing. For example, most corporate tax systems allow deductions for the interest payments on debt (subject to some limitations), but not for the opportunity cost of equity (exceptions include allowances for corporate equity). When the cost of equity financing is taxed, but interest is deductible, equity-financed investments require a higher pre-tax return than debt-financed ones to yield an equivalent post-tax return all else equal (De Mooij & Hebous, 2018; OECD, 2015).

61 As established, e.g. by Aghion et al. (2009), big incumbent companies typically have less incentive to create disruptive innovations than younger, smaller ones.

climate policies like robust carbon pricing. For example, in 2023 the United Kingdom made full expensing for plant and machinery investment permanent; combined with carbon pricing, this formed part of a national strategy to mobilise climate-related financing and investment (HM Government, 2023). Further research is needed to pin such interactions.

9.2 Climate-related tax incentives raise familiar concerns, and some new ones[62]

Existing policy guidance cautions against the use of certain CIT incentive designs. When well-designed, tax incentives may prompt changes in investor behaviour, e.g. help mobilise private funds to scale up the deployment of emerging technologies and create positive spillovers. But they carry risks, much like other types of targeted support: limited effectiveness and costs arising from economic distortions and tax system complexity, revenue loss, reduced transparency, and implementation challenges. Finally, incentives often result in windfall gains for projects that would have occurred anyways, without creating *additional* investment (IMF-OECD-WB-UN, 2025; OECD, forthcoming 2026).

This general policy guidance remains relevant for climate-related[63] tax incentives, but additional considerations apply that may make policymakers more inclined to provide investment support.

Common justifications for providing support to climate-related investment

First, there is a potential efficiency case for targeted government intervention as climate-related investments may yield higher social returns than other investments due to existing market failures and frictions. On the one hand, tax incentives, where effective, can reduce GHG emissions and their associated social costs. On the other hand, they can increase efficiency by acting upon the following factors:

- **Market failures** related to technology development and deployment, such as knowledge spillovers and technology adoption spillovers linked to learning-by-doing and induced innovation, can disadvantage emerging technologies and reinforce path dependence. Adoption spillovers are not unique to climate-related technologies, but may be particularly large due to their high complexity (Mealy & Teytelboym, 2022). Evidence also shows significant knowledge spillovers in the area (Dechezlepretre, Martin, & Mohnen, 2017).

- **Network effects,** by which technology adoption by one agent increases the returns for others, and **coordination failures** can motivate public investment or temporary policy support, like tax incentives to increase adoption payoffs for other users (Aghion, Hepburn, Teytelboym, & Zenghelis, 2019).

- **Additional firm-specific frictions** are again not specific to climate-related technology and suggest varied roles for policy too. Financing frictions may be best addressed by capital market reforms, for instance, and information gaps about relevant technologies by initiatives that provide timely and practical information on emerging technological solutions.

Second, where climate change mitigation is a policy priority, targeted support such as tax incentives can help advance these objectives within a well-aligned policy mix.

- First, reaching net zero objectives requires rapid, large-scale climate-related investments, which may justify targeted support given fiscal and political constraints. Ambitious objectives can lead countries to shift costs and risks to the public sector, including via tax incentives.

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62 This section summarises key findings from Dressler and Warwick (2025).

63 The particular focus of this chapter is on the deployment of emerging technologies (as opposed to their development, e.g. through R&D incentives).

- Second, at current low levels carbon pricing alone may not succeed in addressing all market failures and structural impediments to climate-related investment (OECD, 2025).

- Third, alternative cost-increasing climate policies like carbon pricing[64], can be unpopular because of distributional and competitiveness concerns (Dechezleprêtre, et al., 2025; Douenne & Fabre, 2022). Targeted support that decreases costs to business may be more politically acceptable and help buy-in support for broader action.

Limitations of tax incentives as a climate policy tool

Tax incentives have inherent limitations as climate policy tools:

- They do not incentivise continuous emissions reductions. After the investment is undertaken, climate-related tax incentives do not encourage the firm to continue reducing emissions.

- They typically offer the same tax benefit on a given investment to high- and low-emitting firms, which is likely to result in inefficient abatement across firms.

- They require setting deduction or subsidy rates on qualifying investments, such as technologies, which is likely to result in inefficient abatement costs across technologies.

- They reduce government revenue, while carbon pricing generates revenue.

Existing guidance can inform policy choices and design

When considering climate-related investment support, a sound approach starts by ensuring a well-grounded rationale is provided, cautiously contrasting all potential benefits against their risks and costs, deciding on appropriate design options, and comparing to alternative policy options (IMF-OECD-WB-UN, 2025). A forthcoming Practical guide to tax incentive policy-making (OECD, forthcoming 2026) provides hands-on guidance to well-designed and -governed tax incentives.

While tax incentives are one way of supporting climate-related assets and activities, they are not always the optimal response. For example, direct support may reach objectives more transparently, and combining carbon pricing with general (untargeted) investment support or broad-based R&D support can address a complex set of obstacles. The need for comprehensive approaches is increasingly recognised in the literature (Acemoglu, Aghion, Bursztyn, & Hemous, 2012; D'Arcangelo, Levin, Pagani, Pisu, & Johansson, 2022; Van Der Ploeg & Venables, 2022). It is important to acknowledge the limitations of tax incentives, in particular when they fail to address an existing investment barrier or market failure.

9.3 Climate-related tax incentives: their effectiveness depends on design features and context[65]

Design and implementation choices of climate-related tax incentives influence their effectiveness. Effectiveness concerns whether the tax incentive achieves its objectives, e.g. increasing climate-related investment, enhancing the competitiveness of climate-related production, supporting emerging technologies, or reducing GHG emissions. Assessing their causal impact is challenging, as it requires determining whether observed effects are truly additional and attributable solely to the incentive. Much is already known about

[64] Carbon pricing is an appealing climate-mitigation instrument. It encourages cost-effective emissions abatement. Unlike tax incentives and subsidies, pricing provides the opportunity for raising government revenues and can create ongoing mitigation incentives and reduce rebound effects when well-designed.

[65] This section summarises forthcoming work by Dressler and Warwick (forthcoming 2026), OECD (forthcoming 2026) and OECD (forthcoming 2026).

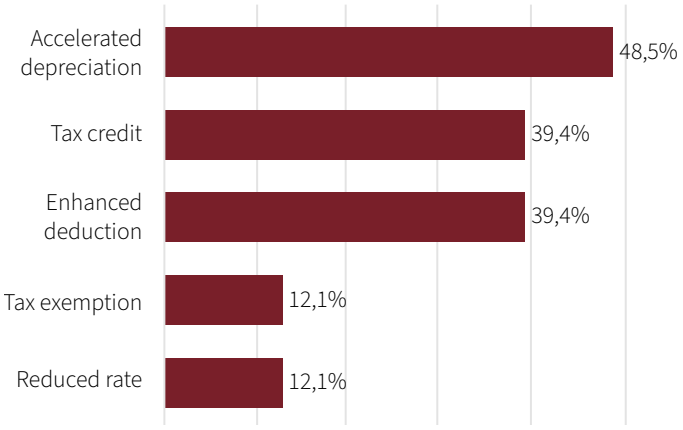
good tax incentive design and implementation (e.g. Berg et al. (2024), IMF-OECD-WB-UN (2025) and OECD (forthcoming 2026); this section examines how these lessons apply to climate-related tax incentives.

Design of climate-related incentives and effectiveness

Expenditure-based incentives, such as accelerated depreciation, enhanced deductions or tax credits, seem well-suited to encourage additional investment, including climate-related investment, as they provide tax relief directly proportional to the amount invested. By lowering the cost of capital, they increase the likelihood of investments that would not occur without the incentive.[66] Preliminary information from 45 OECD and partner economies shows that climate-related incentives are far more often expenditure-based than income-based (Figure 9.2).

Figure 9.2: Use of climate-related CIT incentives across countries

Share of economies with at least one climate-related CIT incentive in 2025, by instrument



Source: Preliminary information from OECD (forthcoming 2026)

Note: Sample includes preliminary information on climate-related CIT incentives from 45 OECD, G20 and selected partner economies operational on 1/01/2025.

Different expenditure-based designs suit specific investments and investor types, which can guide policy choices. For example, where the net-zero transition is a key objective, a range of actors (small and large firms, incumbents and new entrants, loss-making or profitable firms) and investment types (risky emerging technologies vs mature ones, incremental vs transformative investment) may be relevant. No single design is equally effective across these variations. Governments should consider the following aspects of their firm and project landscape:

- **Asset lifespan:** Long-lived physical assets (e.g. energy infrastructure, renewable energy) benefit strongly from accelerated depreciation and governments face limited revenue risk with accelerations compared to other incentive designs. Effectiveness of accelerated depreciation is likely weaker for projects with delayed returns, loss-making firms or those unfamiliar with the instrument (Knittel, 2007; Zwick & Mahon, 2017; Klemm, 2009; Fan & Liu, 2020; Cui, Hicks, & Xing, 2022). This suggests that early-stage technology startups or new entrants with little taxable income may receive limited immediate benefits from accelerations.

- **Risk and profitability:** Riskier and less profitable assets or activities (e.g. smaller and early-stage firms, emerging technologies like hydrogen or carbon capture and industrial transition technologies) may benefit relatively more from enhanced allowances or tax credits, which provide greater immediate cash-flow advantages than accelerations. However, they are likely less effective for loss-making firms or those too small to fully use the tax benefit (e.g. against other incomes) (Rodgers & Hambur, 2018). Evidence shows R&D tax credits effectively generate investment in smaller firms.[67] A further advantage is the certainty of the tax benefit, which is more predictable with enhancements or credits than accelerations.

[66] Studies show increased investment in response to the provision of accelerated depreciation, immediate expensing, enhanced allowances and tax credits. (House & Shapiro, 2008; Zwick & Mahon, 2017; Guceri & Liu, 2017; Rodgers & Hambur, 2018; Maffini, Xing, & Devereux, 2019; Ohrn, 2019; Hall B. , 2019; OECD, 2023)

[67] For a literature review on effectiveness of R&D incentives, see Appelt et al. (2025).

- **Financial frictions:** New, innovative entrants and capital-intensive or high-risk projects that face strong financing constraints or losses can benefit from loss carryforward, refundability and transferability provisions. However, long carryover periods may encourage firms to remain in loss positions and refundability can be costly, so trade-offs need to be well assessed.

- **Incumbency and market dynamics:** Incumbents with highly profitable assets in place may be less responsive to expenditure-based incentives for switching towards climate-related technologies. In principle, income-based measures promoting climate-related investment can more strongly encourage avoiding or retiring profitable energy- or carbon-intensive projects if this is a policy objective, but they carry important risks.[68]

Aligning the design and targeting of tax incentives with country-specific needs is best achieved by careful ex-ante assessment and ex-post evaluations. Assessing needs and policy goals before implementation can help select the most suitable policy alternative by contrasting their potential costs and benefits. Ex-post evaluation will highlight direct and indirect outcomes of the policy, including effectiveness and is key to understanding if the tax incentive is best supporting policy goals, and to trigger reform or removal of inefficient or ineffective incentives. There may be cases where targeted incentives are inferior alternatives to broad based investment support.

Targeting climate-related incentives and effectiveness

Defining the scope of tax incentives precisely (i.e. targeting) contributes to their effectiveness but involves trade-offs. Preliminary information from climate-related tax incentives in 45 OECD and partner economies shows that targeting varies widely. For example, it may focus narrowly on specific sectors, technologies, or emissions-reduction channels, or broadly on any reduction in energy use or emissions. Narrow targeting can limit fiscal costs and align incentives with policy objectives (e.g. support emerging technologies, decarbonise industry). However, narrow targeting may risk picking potentially wrong winners, increase implementation costs and lock-in existing technologies at the expense of future, potentially more cost-effective, approaches.

To mitigate targeting related risks, countries have adopted different strategies. For example, the Netherlands regularly updates the detailed technology list of its Energy Investment Allowance to focus on emerging technologies and to limit lock-in and revenue costs, though this entails relatively high implementation costs. Denmark used a negative list for its Green Investment Window excluding fossil-fuel technologies, which reduces administrative burden related to targeting and the risk to pick wrong winners but may generate windfall gains and favour more mature technologies at the expense of emerging ones. Other countries, such as Hungary and South Africa, take technology-neutral approaches, targeting incentives based on realised performance, such as a percentage reduction in energy use, as opposed to specific technologies. This reduces the risks from picking winners and lets firms chose the most suitable technology. Challenges of these approaches include establishing a baseline and monitoring compliance.

As with design, targeting approaches depend on country-specific needs and context; what works in one setting may not transfer directly to another, making careful ex-ante and ex-post assessments essential.

[68] These risks include higher costs of revenue foregone (as the chance to attract additional investment is lower and fiscal costs grow with project profitability), undertaxed economic rents of clean investment projects, and a risk of an international race-to-the bottom in terms of attracting or supporting clean projects through the tax system. They would also require apportioning income streams to specific clean capital investments (Dressler & Warwick, 2025).

Policy interaction and context influence effectiveness and warrant further analysis

The impact of tax incentives on climate-related outcomes depends on how they interact with other climate-related policies. Incentives can complement other policies, for example the previously mentioned carbon pricing, by addressing separate market failures or building political support for greater policy stringency. Overlap with existing policies risks making incentives redundant, mainly causing public revenue losses and windfall gains. For instance, where binding energy efficiency regulations exist, tax incentives for technologies that just meet the efficiency requirements are redundant. Incentives that target investments exceeding minimum requirements avoid this, as in Belgium's energy investment allowance. Where carbon pricing is sufficient to drive emissions reductions, additional incentives may have no effect on emissions ("waterbed effect"). Though in both cases private costs of the transition may be relieved through the incentive.

Climate-related tax incentives are effective only to the extent that broader conditions support investment. Factors such as the macroeconomic environment, access to finance, technological developments and input costs shape (climate-related) investments. Firms facing high economic uncertainty are less likely to respond to investment incentives (Guceri & Albinowski, 2021). Non-climate policies also influence the effectiveness of climate-related tax incentives, such as permitting procedures, capital market policies, cross-border agreements (e.g., investment or tax treaties), and state aid rules.

Tailored policies require diagnosing national climate-related investment pathways and barriers. At the national level, factors such as the size and composition of the corporate sector, state involvement, national endowments, economic development and sectoral structure shape the link between CIT and climate-related investment. For example, a country with favourable conditions for low-cost solar may achieve grid expansion with a generally investment-friendly CIT system, while a country with emissions-intensive industrial assets may need targeted tax measures to encourage early retirement or replacement, involving a transfer of costs and risks to the public sector.

9.4 Conclusions

The interaction between the CIT system and climate change mitigation goes well beyond climate-related tax incentives, even though these instruments have been gaining importance in the recent past. Baseline CIT provisions shape investment outcomes depending on investor characteristics and investment types. Tax incentive design and country context are crucial for their effectiveness. Yet, major knowledge gaps remain: where and how climate-related tax incentives have effectively driven investment and emissions reductions, which design features deliver the strongest results, and how these incentives interact with baseline CIT provisions, other climate policies (such as carbon pricing or regulation) and wider economic conditions across countries.

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10

R&D TAX INCENTIVES UNDER PILLAR TWO: EMPIRICAL EVIDENCE AND BEST PRACTICES

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10.1 Purpose and context of R&D tax incentives

Governments grant tax incentives to promote economic growth through increased investment, innovation, and employment. By reducing the effective tax liability, such incentives may effectively steer economic activities in favour of pre-defined policy targets.[69] Among these, research and development (R&D) tax incentives are widely used throughout the world (OECD, 2024) and considered well-justified. Their rationale is grounded in both economic and political considerations.

Economically, private investment in R&D is often deemed insufficient from a social perspective due to the public good characteristics of knowledge and the spillovers it generates. Tax incentives can help to address this market failure by lowering the after-tax cost of investment and thus encouraging investments associated with positive spillovers. In addition, they are also introduced to mitigate behavioural distortions caused by the tax system itself. Another argument in favour of R&D tax incentives is the information gap governments face when attempting to identify, ex ante, which technologies or sectors have the greatest potential for economic growth and positive spillovers. This uncertainty often limits the effectiveness of direct subsidies, as they are only granted to specific technologies or political areas of interest.

Beyond economic efficiency, political economy considerations influence the introduction of R&D tax incentives. International tax competition, in particular, is a major driving force, since foreign direct investment and profits derived from real activities are tax sensitive (Feld and Heckemeyer, 2011). However, the scope for a general race to the bottom on corporate income tax (CIT) rates is limited, as many countries face revenue constraints. Keeping tax rates high on less mobile activities and introducing tax incentives to attract mobile tax bases is a rational policy instrument (Janeba and Smart, 2003; Keen, 2001). However, several multilateral actions have been implemented to reduce the risk of harmful tax competition arising from national tax incentives, such as the EU Code of Conduct, the EU State Aid Rules and the OECD Forum on Harmful Tax Practices. In addition, the global minimum tax (Pillar Two), introduced to combat aggressive tax planning and set a floor on international tax competition, sets boundaries for the design of tax incentives for large firms. Since R&D tax incentives potentially reduce the effective tax rate (ETR) below a minimum level of 15%, an interaction between tax incentives and Pillar Two is key to identify the way forward for tax incentives.

When incentives are well-designed and successful in stimulating additional economic activity, governments can achieve revenue as well as social gains. However, depending on the incentives' generosity and induced competition effects, tax incentives can also erode tax revenue and cause unintended distortions. Indirect revenue costs associated with the tax incentive arise when the tax-favoured investment type crowds out higher-taxed alternatives (James, 2013). Beyond revenue costs, tax incentives may also incur non-revenue costs in the form of new distortions introduced, administrative and planning costs associated with receiving the incentive, and compliance costs.

Given the costs associated with introducing tax incentives and the limited public resources available, it is crucial to conduct thorough evaluations and cost-benefit analyses to make informed decisions about the appropriateness of each incentive (Beer et al., 2022). Evidence shows that once a country introduces preferential tax treatment, there is political pressure to expand its scope (Klemm and Van Parys, 2012). A sustainable tax policy, in particular under tight budgets, requires a careful balancing between tax revenues and policy goals (Gundert et al., 2024). Thus, it is relevant to analyse what characterises compelling and sustainable tax incentives.

This chapter identifies country best practices of R&D tax incentives, particularly in the context of Pillar

[69] Direct subsidies or grants, which countries may alternatively or additionally introduce to reach the desired policy goals, are not part of this chapter.

Two. It first reviews the empirical evidence on how R&D tax incentives affect investment decisions, taking into account different design options and uptake of the incentives. Next, it examines the compatibility of various R&D tax incentives with the global minimum tax. On that basis, it develops country best practices in designing and implementing these incentives to effectively stimulate private investment while minimising risks such as aggressive tax planning and harmful tax competition.

10.2 Lessons learned from the design and use of R&D tax incentives

Although tax incentives may be available for any type of tax, R&D tax incentives mainly focus on profit and payroll taxes (including social security contributions, SSC). In general, a distinction can be made between input-based incentives, such as accelerated depreciation, super deductions and tax credits, and output-based incentives, such as tax exemptions or reduced tax rates on specific types of intellectual property (IP) income (IP box regimes).

The most common form of R&D tax incentives are input-based schemes. As of 2023, 76 different **input-based tax incentives** were in place across OECD countries (OECD, 2025). The existence of 43 incentives within the EU stems from the fact that some countries, such as Bulgaria, Estonia, Latvia, and Malta, do not provide any incentives, while others offer multiple incentives simultaneously. Input-based incentives directly reduce the effective cost of R&D expenditure (e.g. wages, equipment, materials), thereby making more projects financially viable, especially those closer to the firm's profitability threshold (Hall, 1993). These incentives act as a tax shield, reducing the overall corporate tax burden in proportion to the firm's qualified R&D expenses, regardless of project success. While input-based incentives provide certainty as they are independent of uncertain future income streams, they are regularly limited by firms' tax liabilities, which can disadvantage start-ups or less profitable firms.

Empirical evidence consistently confirms that input-based incentives stimulate additional R&D investments in the countries implementing them. Earlier estimates suggest long-run elasticities of around -0.5 to -1 (Bloom et al., 2002), while recent firm-level studies report much higher values between -1.6 and up to -4.1 (Dechezleprêtre et al., 2023; Guceri and Liu, 2019; Rao, 2016). These differences partly reflect divergent assumptions about the actual uptake of R&D tax incentives. While cross-country analyses often assume full participation, in practice less than half of R&D-performing firms claim such relief, with substantial cross-country variation (Appelt et al., 2025). Failing to account for actual utilisation can lead to underestimating the effectiveness of tax relief programmes (e.g. Cui et al., 2022; Zwick, 2021).

Even in countries with mature systems, many eligible firms do not claim available support. Uptake is usually lower in the initial years after introduction due to limited awareness, the complexity of the application process, and the time required to adapt existing R&D processes (Appelt et al., 2025). Large firms, in particular, take longer to adjust their internal procedures than smaller firms. Still, small and medium-sized enterprises (SMEs) appear to favour increasing expenditure on subcontracted R&D rather than hiring new employees to maximise tax benefits and R&D activity (Agrawal et al., 2020).

In addition, uptake is higher if companies are eligible for greater benefits and if more generous design features are implemented, such as volume-based schemes and immediate refund options (Appelt et al., 2025). This is particularly important for SMEs, as research shows that tax incentives have a strong impact on R&D spending among SMEs that claim refundable tax credits due to insufficient CIT liabilities (Agrawal et al., 2020). Young SMEs appear to be especially responsive to R&D tax incentives, reflecting their heightened exposure to financing constraints (Appelt et al., 2025; Dechezleprêtre et al., 2023; Rao, 2016). Further research shows that estimates related to more

uncertain R&D tax incentive schemes[70] are on average less significant than estimates associated with clearer and more stable tax schemes. Moreover, introducing a ceiling or a pre-approval process does not relate to a decrease in the average effectiveness of R&D tax incentives (Blandinières and Steinbrenner, 2021).

Nowadays, governments are increasingly adopting **output-based R&D tax incentives**. As of 2023, 20 OECD countries and 14 EU Member States offered tax incentives related to IP income.[71] These incentives lower the applicable tax rate on income from successful R&D. This increases the expected after-tax return and supports profit retention, reinvestment within a country and a competitive tax environment for multinational enterprises (MNEs). With decreasing profit tax rates, the marginal benefit of investment increases as the return derived from the investment incurs a lower tax cost (Hall and Jorgenson, 1967). This should motivate firms to increase investment spending. However, firms need to anticipate a successful outcome from the investment in order to adopt their investment behaviour due to IP boxes (Hall, 2019).

The OECD guideline recommends restricting eligibility to IP income from trade intangibles, which is expected to generate higher positive spillover effects due to real R&D activity (Müller et al., 2022). Most IP box regimes observed align with this recommendation. The effective IP box rates within EU Member States range from 1.75% in Malta to 10.5% in Slovakia.

Evidence on whether output-based incentives stimulate additional R&D activity is more mixed. Early evaluations suggest that they did little to stimulate new R&D and instead primarily induced relocation of patents and associated income (Hall, 2019). This reflects the fact that such incentives reward successful outcomes rather than R&D activity itself and therefore may mainly influence where income is reported rather than where knowledge is created. The introduction of the modified nexus approach has tied preferential tax treatment to substantive R&D activity carried out within the granting jurisdiction. In line with this development, empirical evidence shows that countries with stricter substance and nexus requirements tend to have stronger links between IP box benefits and real economic activity, including increased employment of highly skilled workers and higher wages (Bornemann et al., 2023; Chen et al., 2023; Mohnen et al., 2017). Conversely, in countries with weaker substance requirements, increases in patent activity are more likely driven by patent relocations or acquisitions rather than new R&D investments (Bösenberg and Egger, 2017; Bradley et al., 2015). However, as most countries have nowadays implemented stricter nexus requirements following the OECD's modified nexus approach, the risk of pure patent relocation diminishes.

Nevertheless, the benefits of IP boxes are often accompanied by a decline in the average patent quality, raising concerns about the underlying innovative value of the additional patents (Bornemann et al., 2023). Gaessler et al. (2021), for example, describe patent boxes as a „relatively inefficient" tool for promoting inventive behaviour, particularly where preferential tax treatment is extended to include broader categories of IP income. Furthermore, increases in patent applications depend heavily on the industry (Alstadsæter et al., 2018; Bradley et al., 2015). Finally, there is also evidence that IP boxes alter the composition of the labour force rather than leading to an overall increase in employment levels (Bornemann et al., 2023).

The effectiveness of output-based incentives thus depends heavily on their design. Narrowly defined eligibility, limited to patents or software, reduces the risk of subsidising low-value IP, while overly broad definitions dilute the link to genuine R&D. Moreover, the

[70] For example, uncertainty can arise from changes to design features, the use of super deductions instead of tax credits, and the choice between carry-forward and immediate refund rules (Blandinières and Steinbrenner, 2021).

[71] Within EU Member States, tax exemptions are a less common instrument to stimulate R&D activity. Therefore, the following analysis focuses on IP box regimes.

compliance burden of nexus tracking can be substantial, especially for SMEs, further skewing benefits towards larger firms. Overall, while output-based measures can complement input-based incentives, they are less reliable as stand-alone tools for stimulating additional R&D.

Taken together, input-based incentives are superior to output-based ones in encouraging additional R&D efforts and minimise windfall gains. Furthermore, targeted design features, such as immediate refunds, volume-based schemes with ceilings, and clear eligibility criteria, enhance the accessibility and efficiency of these incentives. Although input-based incentives are generally effective in stimulating additional R&D, they are not without risks. Cheng et al. (2020) show that the tax-subsidised accumulation of IP can later facilitate profit shifting, particularly when combined with preferential tax regimes for IP income. Knoll et al. (2021) emphasise that within MNEs, R&D incentives may reallocate rather than increase global innovation, raising concerns about cross-border distortions. These findings underline the importance of embedding R&D tax incentives in a broader framework of international tax coordination and anti-abuse measures.

10.3 The future of R&D tax incentives under Pillar Two

In 2021, under the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) more than 130 countries agreed on the implementation of a global minimum tax of 15% on profits generated by large companies (Pillar Two). The objective of Pillar Two is to combat aggressive tax planning and to set a floor on international tax competition. With the enactment of the Minimum Tax Directive[72] in 2022, EU Member States were required to implement the global minimum tax into national law by the end of 2023. This provision applies to affiliates of groups with annual consolidated revenues above 750 million EUR in at least two of the previous four years.[73]

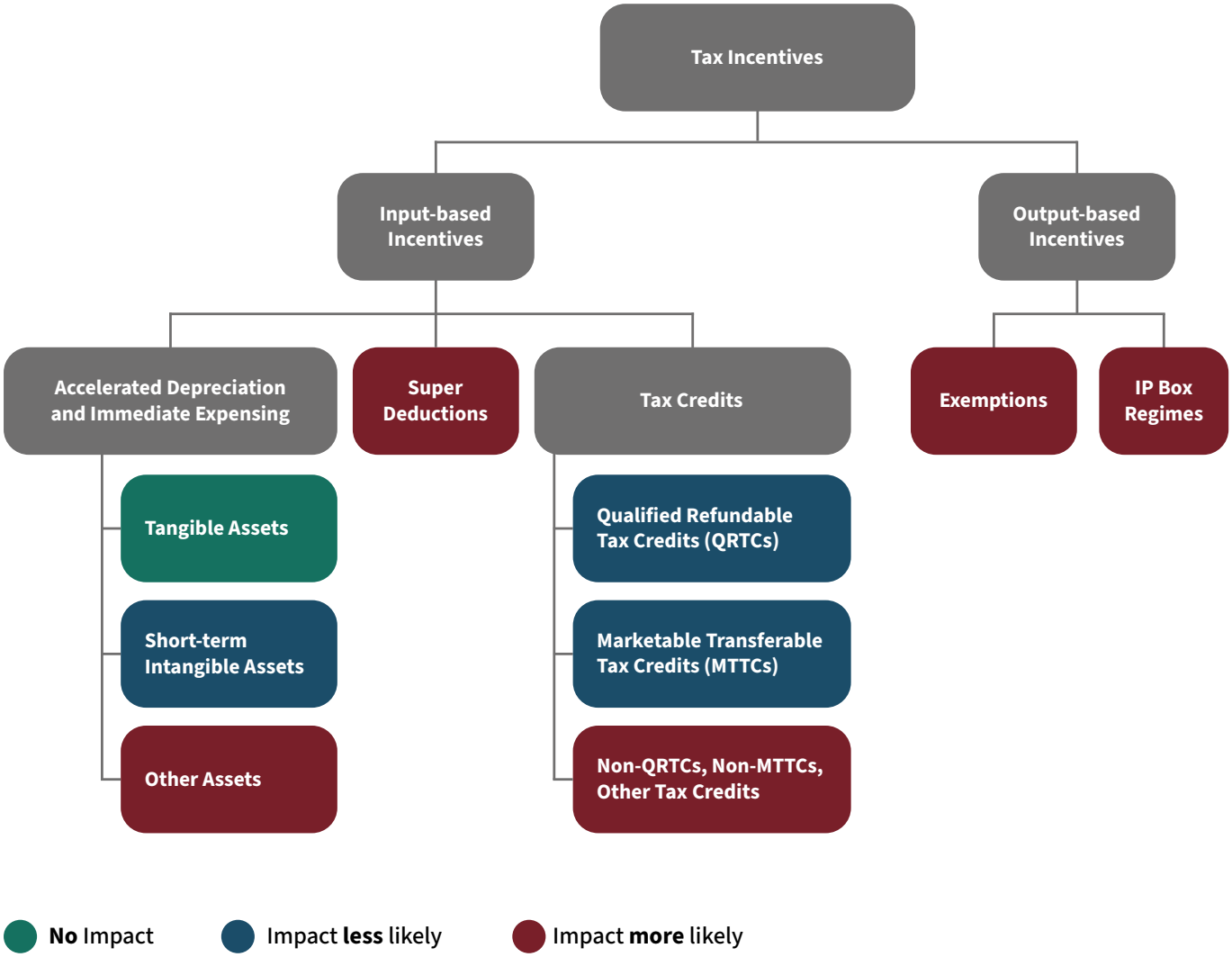
The core element of Pillar Two is the top-up tax, which is levied if a group is effectively taxed at a rate below 15%. The top-up tax percentage equals the difference between 15% and the group's ETR, which is determined under a jurisdictional blending approach, i.e. all group affiliates in a country are aggregated. The ETR under Pillar Two is defined as the ratio between the adjusted covered taxes and the net qualifying income, which are determined based on financial accounting standards and adjusted for various items. However, a routine profit from substantial economic activity as measured by tangible assets and payroll (substance-based income exclusion, SBIE) is exempt from the top-up tax and subject to the national tax level.

The top-up tax could diminish or even entirely reverse the investment incentives provided by tax reliefs. The impact of Pillar Two on a tax incentive depends on the extent to which the incentive affects the ETR – either by reducing the covered taxes or by increasing the net qualifying income – and on the interaction of the incentive with the SBIE (OECD, 2022). Figure 10.1 summarises to what extent Pillar Two is likely to affect the tax benefits granted by different types of tax incentives. However, the specific impact of Pillar Two on tax incentives also depends on the country's tax system, on the affected firm's characteristics and

[72] Council Directive (EU) 2022/2523 of 14 December 2022 on ensuring a global minimum level of taxation for multinational enterprise groups and large-scale domestic groups in the Union.

[73] As of November 2025, 60 countries worldwide have enacted final or draft legislation to implement the global minimum tax (EY, BEPS 2.0 Pillar Two Developments Tracker). Notably, in January 2025, the US President announced that the two-pillar project would have no effect in the US (https://www.whitehouse.gov/presidential-actions/2025/01/the-organization-for-economic-co-operation-and-development-oecd-global-tax-deal-global-tax-deal/). In June 2025, the G7 and the US Treasury agreed on a "side-by-side" system that excludes US MNEs from the scope of Pillar Two (https://home.treasury.gov/news/press-releases/sb0181).

Figure 10.1: The impact of different tax incentives on the ETR under Pillar Two



Source: Own illustration.

Note: This figure shows to what extent Pillar Two is likely to affect the tax benefits granted by different types of tax incentives.

activities, and on the design of the incentive (OECD, 2022).

To incentivise R&D activities, countries grant accelerated depreciation or immediate expensing schemes. While the cost of an asset is also depreciated for accounting purposes, the specific tax depreciation rules usually differ from the accounting rules. As Pillar Two relies on financial accounting standards to determine the ETR, these differences are important to consider. Accelerated depreciation results in lower taxable profits and consequently lower taxes paid in early years (i.e. when the tax depreciation exceeds the accounting depreciation). This timing difference between tax and financial accounts is considered by creating a deferred tax liability (Ferreira Liotti et al., 2022). Under Pillar Two, covered taxes do not only include current taxes but also deferred taxes. Therefore, the ETR under Pillar Two is not affected by accelerated depreciation or immediate expensing schemes granted for tangible assets and short-term intangible assets (Bammens and Bettens, 2023; OECD, 2022). In contrast, due to a

recapture rule, accelerated depreciation or immediate expensing of long-term intangible assets is likely to be affected and could generate a top-up tax (OECD, 2022).

Some countries even grant super deductions for R&D expenses, allowing firms to deduct a higher amount of expenses for personnel and/or assets used for R&D from their tax base than actually incurred. While super deductions are reflected in tax accounts, they do not exist for financial accounting purposes. Therefore, they reduce the tax base and also the covered taxes compared to a scenario without such a deduction. In contrast, the net qualifying income is unaffected as the super deduction does not exist for financial accounting purposes. In sum, the ETR therefore decreases and could potentially give rise to a top-up tax liability (OECD, 2022).

While tax deductions reduce the tax base, tax credits directly reduce the tax liability. For Pillar Two purposes, there is an important distinction between various types of tax credits that have different consequences. Tax credits are categorised into the following five types: Qualified Refundable Tax Credits (QRTCs)[74], Non-Qualified Refundable Tax Credits (Non-QRTCs)[75], Marketable Transferable Tax Credits (MTTCs)[76], Non-Marketable Transferable Tax Credits (Non-MTTCs)[77], and Other Tax Credits (OTCs)[78]. QRTCs and MTTCs are treated as income and therefore added to the net qualifying income in their origination year. In contrast, Non-QRTCs, Non-MTTCs, and OTCs reduce covered taxes (OECD, 2023). As a result, all types of tax credits reduce the ETR, but the effect is less significant for QRTCs and MTTCs as they affect the denominator rather than the numerator of the ETR. At the same time, however, the treatment of QRTCs and MTTCs as income also increases the tax base for the top-up tax, which is defined as the net qualifying income (UNCTAD, 2022).

In addition to input-based incentives, output-based incentives such as IP box regimes can affect a firm's ETR under Pillar Two. IP box regimes reduce the covered taxes, while the IP income is reflected in the net qualifying income, thereby lowering the ETR. However, the specific effect on the ETR depends on the design of the regime, the applicable tax rate to other types of income, and the share of IP income to other income in a country (Ferreira Liotti et al., 2022).

A further factor particularly determining the impact of Pillar Two is the SBIE that exempts a routine profit from substantial economic activity from the top-up tax. All of the aforementioned input-based incentives, i.e. accelerated depreciation schemes, super deductions, and tax credits, require a certain level of substance in terms of personnel and/or tangible assets. The same applies to IP box regimes following the modified nexus approach, which encourage firms to conduct their R&D activities in the country offering the regime. Therefore, firms whose R&D activities heavily depend on personnel and tangible assets are likely to benefit from the SBIE and thus be less affected by Pillar Two (UNCTAD, 2022).

To incentivise investment even after the implementation of Pillar Two, governments may consider reassessing their tax incentive regimes. In general, however, it should be noted that Pillar Two only applies to a subset of firms. Firms that are out of scope continue to benefit from tax incentives without being affected

[74] A Qualified Refundable Tax Credit is defined as a refundable tax credit that must be paid as cash or cash equivalent within four years from when a firm is entitled to receive the credit (Article 3 (38) Minimum Tax Directive, 2022).

[75] A Non-Qualified Refundable Tax Credit is defined as a tax credit that is refundable as cash or cash equivalent after four years (Article 3 (39) Minimum Tax Directive, 2022).

[76] A Marketable Transferable Tax Credit is a tax credit that can be transferred to an unrelated party within a certain timeframe at a price equal or above the marketable price floor, which equals 80% of the net present value of the tax credit (OECD, 2023).

[77] A Non-Marketable Transferable Tax Credit is defined as a tax credit that is transferable but is not a MTTC (OECD, 2023).

[78] Other Tax Credits are non-refundable and non-transferable tax credits that can only be used to offset the tax liability of the eligible taxpayer (OECD, 2023).

by any interactions between the incentives and Pillar Two. Therefore, governments may continue to grant incentives, especially if they are effective, to out-of-scope firms (OECD, 2022). On the other hand, for in-scope firms the effectiveness of tax incentives may be curtailed by Pillar Two. However, it is important to consider that the tax benefit granted by incentives may only be reduced or reversed by Pillar Two if a firm's ETR is below 15%. As a result, high-tax countries may not necessarily have to redesign their tax incentive policies since the likelihood of firms being affected by a top-up tax is relatively low.

As shown above, input-based incentives are less affected and thus favoured under Pillar Two. This is in line with the empirical literature supporting the implementation of input-based rather than output-based incentives. Specifically, governments may grant accelerated depreciation schemes for tangible assets, as they are unaffected. Tax credits classified as QRTCs or MTTCs are less impacted by Pillar Two, which may result in more governments introducing or revising their tax credits such that they meet the definition of a QRTC or MTTC. Furthermore, countries could be incentivised to offer grant schemes, which are treated like QRTCs and MTTCs. Policymakers should also consider to what extent their tax incentives require substance as measured by payroll and tangible assets, as these types of incentives are less affected by Pillar Two. Overall, governments should reassess the specific design of their incentives, since certain design features could undermine the tax benefits of the incentives under Pillar Two.

10.4 Country best practices on R&D tax incentives under Pillar Two

Based on the above insights, this section identifies country best practices on R&D tax incentives. According to the Platform for Collaboration on Tax (PCT) effective R&D tax incentives should be guided by six overarching principles: justification, design, international considerations, legislation, implementation and evaluation (PCT, 2025). Translating these dimensions into practice yields five interrelated best-practice characteristics:

(1) non-selective incentives with respect to eligibility groups,
(2) incentives targeted in scope,
(3) incentives with direct impact on liquidity,
(4) salient and transparent incentives to maximise uptake and minimise compliance costs, and
(5) incentives that are easy to administer and monitor.

First, tax incentives should be non-selective with respect to eligibility groups, i.e. they should be granted to all taxpayers independent of specific characteristics, in line with the general idea of a good tax system being fair. A narrow targeting of specific taxpayers is prone to misjudgement, as it is usually difficult for governments to accurately anticipate which technology or sector has the most promising growth perspectives or the most convincing potential for positive spillover effects. In particular, the de facto industry selectivity of IP box regimes is a key disadvantage. Not all outputs of R&D activity benefit from IP boxes, which are with few exceptions limited to profits from patents and related rights. However, patents and associated royalty payments play a central role in only a limited number of industries (Spengel et al., 2022).

By contrast, input-based incentives that are granted universally to all taxpayers engaged in eligible R&D activities represent a best practice. Such incentives avoid sectoral bias and help to ensure a more neutral allocation of support. In the context of Pillar Two, only affiliates of large groups are affected by any interactions of Pillar Two and R&D tax incentives. However, a distinction between different incentives for firms within and out of scope of Pillar Two should be avoided. Therefore, tax incentives should be targeted to all firms independent of their size, sector, and other characteristics. This also reduces complexity of the tax incentive system.

Second, there is inevitably a trade-off with respect to the ideal scope of a R&D tax incentive. According to the PCT, incentives should be targeted as closely as possible to the expected source of social benefit. While this notion rules out output-based incentives, it is rather impractical to pin down the exact type of expense creating the spillover effect. A simple solution

is to define a broad base of eligible expenses, such as R&D wages, allowances for machinery and buildings, and overhead costs. Moreover, subcontracted or outsourced R&D expenditures should be included to ensure that external research activities are not disadvantaged compared to in-house R&D. To limit windfall gains for large MNEs and to reduce fiscal costs for governments, a ceiling, i.e. a cap on the maximum claimable benefit, may be introduced. At the same time, ceilings are often not binding for SMEs, which are the most responsive to R&D tax incentives as their R&D expenditures generally fall below the threshold, allowing them to fully benefit from the incentives.

Third, the mechanism of how tax incentives stimulate investment involves the liquidity impact of the tax saving. To maximise this effect, the liquidity should be granted as direct as possible. Incentives that can be offset against payroll taxes or SSCs are highly effective in this regard, as the liquidity effect of the tax benefit occurs promptly within the same month. In addition, even firms with a negative CIT base benefit from this incentive design. This is of particular relevance during economic crises or for firms experiencing losses at the beginning of their lifecycle. Instead of crediting against payroll taxes, the second-best option for loss-making firms is an immediate cash refund, allowing them to benefit from the tax incentive earlier rather than having to carry it forward.

Fourth, for input-based incentives to be effective, they must be designed to be salient, transparent, and easily accessible to maximise uptake and minimise compliance costs. Our overview of the empirical evidence shows that stability and predictability are crucial factors influencing firms' decisions to engage with R&D tax incentive schemes. Among the available instruments, R&D tax credits are considered best practice for delivering input-based support. They offer a clear, direct reduction in tax liability based on qualifying R&D expenditures and are generally easier for firms to integrate into their financial planning. In particular, volume-based R&D tax credits that apply to the total amount of qualifying expenditure provide predictability and simplicity, reducing both uncertainty and administrative burdens for taxpayers. Under Pillar Two, volume-based tax credits classified as QRTCs are less likely to be impacted, provided they are refundable within four years. While such credits can reduce a firm's ETR and potentially trigger a top-up tax, in particular under a volume-based scheme and with a broad definition of expenses, ceilings and the SBIE offer mitigating effects. Overall, refundable, volume-based tax credits with a broad scope remain a best practice, even under Pillar Two.

In addition, R&D incentives should be structured as permanent features of the tax system rather than temporary measures. Permanence increases certainty and allows firms to incorporate expected benefits into long-term R&D planning. While temporary incentives may be appropriate for general investment support during economic downturns, the same approach is less effective for fostering sustained R&D activity, which typically requires long-term commitment. In the context of current legislative changes, a recent Belgian incentive reform proposal included a provision that would fix the applicable rates and include them in law instead of being subject to annual changes, with the explicit aim to improve legal certainty and foreseeability.[79] Although permanence is desirable for predictability, permanent measures often lack systematic review. Incorporating regular evaluations of R&D tax incentives' uptake, fiscal cost, and distribution across firm types preserves transparency and allows for timely adjustment, thereby aligning permanence with evidence-based policymaking.

Furthermore, limiting the number of parallel R&D tax incentives within a country helps to simplify the system, thereby reducing compliance costs for businesses and easing the administrative burden on tax authorities. For instance, the UK recently merged two of their tax incentives into a single scheme with the objective to simplify their R&D incentive regime.[80] A streamlined,

[79] https://www.ey.com/en_be/technical/tax/tax-alerts/2024/belgium-modernizes-its-investment-deduction-regime-and-enhances-its-ip-regime.

[80] https://www.grantthornton.co.uk/insights/guide-to-rd-reform-as-uk-moves-to-a-merged-regime/.

transparent incentive structure not only facilitates uptake, especially by SMEs, but also enhances the overall effectiveness of fiscal R&D policies.

Finally, a best practice for R&D tax incentives is to ensure that the incentives are easy to administer and monitor, especially for small firms. A simplified, transparent structure minimises the administrative burden and encourages more companies to apply. To further ease the process, the application should be straightforward and follow a digital one-stop system. In the EU, Member States such as Belgium[81], Germany[82], and Sweden[83] recently announced to reform their tax incentive systems by simplifying and streamlining their application procedures. While the implementation of pre-approval procedures may impose administrative costs on the involved parties, they increase predictability for both taxpayers and governments by providing clarity on which projects and expenses qualify for support.

Table 10.1 in the Appendix provides an overview of existing input-based R&D tax incentives in the EU and highlights to what extent they fulfil the best practice criteria. Overall, most EU Member States perform well in terms of scope. The majority does not restrict access based on the type of eligible taxpayers, and all 43 incentives examined include a volume-based component. All EU Member States in our sample offer at least one incentive covering labour and current R&D expenditures, which typically represent the largest share of R&D costs. Yet, best practice suggests that integrating both current and capital R&D expenses into a single incentive enhances administrative efficiency for both firms and tax authorities. Taken together, 20 incentives have a comparably broad base that includes subcontracted R&D expenses, an important feature particularly for SMEs, which often lack sufficient internal R&D capacity.

However, greater variation emerges with regard to the instrument type and the liquidity impact. Among the 43 R&D incentives examined, only 14 qualify as volume-based tax credits, and just eight offer immediate refunds, either through offsets against CIT or against payroll taxes and SSCs. Thereby the latter provides the fastest liquidity effects. In contrast, countries like Italy, Ireland, Belgium and France defer refund payments to later periods, potentially limiting the short-term cash flow benefits for firms. Nevertheless, all of these refundable tax credits are likely to qualify as QRTCs and are therefore less impacted by Pillar Two.

Finally, while no single EU Member State fully meets all identified best practice criteria, some countries have implemented several key features that exemplify best practice. Among the existing tax incentives, the Dutch R&D tax credit (WBSO) stands out as fulfilling most of the identified best practice criteria. It is accessible to all types of taxpayers engaged in R&D activities, is designed as a volume-based credit offset against monthly payroll taxes and SSCs and allows for a broad base of internal R&D expenses. However, it does not permit the inclusion of subcontracted R&D expenses. In contrast, the German tax credit (Forschungszulage) has a broader scope, including outsourced R&D expenses, yet it is offset against the CIT, resulting in a less immediate liquidity impact. Similarly, the R&D tax credits in Ireland and Italy have a generous scope in terms of eligible taxpayers and expenses, but they limit the immediate cash benefit by distributing refunds over three annual instalments. Austria, meanwhile, restricts eligibility for the volume-based, refundable tax credit to current R&D expenditures only. Finally, the payroll and SSC tax credits available in Belgium (for research facilities) and France (for young innovative firms) offer rapid liquidity benefits but are limited in scope, as they apply only to certain taxpayer categories and cover labour costs exclusively.

[81] https://www.ey.com/en_be/technical/tax/tax-alerts/2024/belgium-modernizes-its-investment-deduction-regime-and-enhances-its-ip-regime

[82] https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2025/06/2025-06-04-kabinett-beschliesst-wachstumsbooster.html.

[83] https://www.ey.com/en_se/insights/tax/why-sweden-s-proposed-r-d-tax-changes-mark-a-positive-step-forward.

10.5 Conclusion

To stimulate private investment in innovation, address existing market failures, and foster long-term economic growth, many countries grant R&D tax incentives. The effectiveness of these incentives in stimulating additional R&D activity depends on their generosity, specific design and administrative features, and the broader investment climate in which they operate. To maximise their effectiveness, R&D tax incentives should be targeted at generating positive spillover effects and additionality, while minimising windfall gains. Comprehensive and regular evaluations are therefore essential to assess whether each incentive continues to achieve its intended objectives, and to facilitate meaningful comparisons with alternative policy instruments.

Despite generous policy frameworks, incomplete uptake of R&D tax incentives remains a key challenge. Even in countries with mature R&D tax systems, many eligible firms, particularly SMEs, fail to claim available support, moderating the overall effectiveness of these incentives. Addressing awareness and accessibility barriers should therefore be a priority for policymakers seeking to increase the impact of tax incentives.

This chapter has shown that a well-balanced incentive design should incorporate broad eligibility, targeted scope, simplicity, timely liquidity, and streamlined administration to maximise its impact. To enhance the effectiveness of R&D tax incentives, while ensuring fairness, efficiency, and compliance with international frameworks such as Pillar Two, governments should aim to integrate these best practices into their policy design. Notably, the continued reliance on super deductions in several EU Member States may present challenges, particularly when aiming to implement a single, unified R&D tax incentive accessible to all types of eligible taxpayers. A balanced approach combining the aforementioned best practices offers the greatest potential to foster innovation and generate sustainable economic benefits.

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Table 10.1: Overview of Input-based R&D Tax Incentives in the EU based on Best Practice Criteria

	Type			Offset against			Scope					Liquidity			Pre-approval
	Tax Credit	Accelerated Depreciation	Super Deduction	CIT	PWHT/SSC	Other Taxes	Eligible Taxpayer	Incentive Base	Expense Base	Subcontracted R&D	Ceiling	Immediate Refund	Carry-over & Refund ≤ 4 Years	Carry-over	
AT	**x**			x			**All**	**V**	C	**x**	x	**x**			**x**
BE		x		x			**All**	**V**	ME	-	-	-	-	-	-
BE	**x**				**x**		Research facilities	**V**	L	-	x	**x**			-
BE			**x**	x			**All**	**V**	Green R&D: ME, I, B	-	x			x	**x**
BE	**x**			x			Firms with research centre	**V**	ME, I, B	-	x		(x)[a]		**x**
HR			**x**	x			**All**	**V**	**C, MED**	**x**	x			x	**x**
CY			**x**	x			**All**	**V**	**C, I**	**x**	-			x	-
CZ			**x**	x			**All**	H	**C, MED**	**x**	-			x	**(x)[b]**
DK		**x**		x			**All**	**V**	ME	-	-	-	-	-	-
DK			**x**	x			**All**	**V**	**C, ME, BD**	**x**	x			x	-
DK	**x**			x			All (deficit-related R&D)	**V**	**C, ME, BD**	**x**	x	**x**			-
FI			**x**	x			**All**	**V**	Collaborative R&D	**x**	x			x	-
FI			**x**	x			**All**	**V**	C	**x**	x			x	-
FR		**x**		x			**All**	**V**	ME	-	-			x	-
FR	**x**				**x**		Young innovative firms	**V**	L	-	x	**x**			**(x)[b]**
FR	**x**			x			**All**	**V**	**C, MED, BD**	**x**	x	(x)[c]	x		**(x)[b]**
FR	**x**			x			**All**	**V**	Collaborative R&D	**x**	x	-	-	-	**x**
DE	**x**			x			**All**	**V**	**C, MED[a]**	**x**	x	**x**			**x**
GR	-	**-**	**x**	x			**All**	**V**	**C, MED**	**x**	-			x	**x**
HU	**x**			x			**All**	**V**	**C, ME, B, I**	-	x			x	**x**
HU			x			x	Large, medium-sized firms	**V**	**C, ME, B, I**	**x**	-	-	-	-	**(x)[b]**
HU			**x**	x			**All**	**V**	**C, ME. B, I**	**x**	x			x	**(x)[b]**

	Type			Offset against			Scope					Liquidity			Pre-approval
	Tax Credit	Accelerated Depreciation	Super Deduction	CIT	PWHT/SSC	Other Taxes	Eligible Taxpayer	Incentive Base	Expense Base	Subcontracted R&D	Ceiling	Immediate Refund	Carry-over & Refund ≤ 4 Years	Carry-over	
HU	x				x		Research facilities	V	L	-	x	x			-
HU	x[d]				x		Research facilities	V	L	-	x	(x)			-
HU	x				x		SME Research facilities	V	L	-	x	x			-
HU	x[d]				x		SME Research facilities	V	L	-	x	(x)			-
IE		x		x			All	V	ME, B	-	-	-	-	-	
IE	x			x			All	V	C, ME, B, I	x	x	(x)[e]		(x)[e]	-
IT			x	x			All	V	C, MED, I	x	-			x	-
IT	x			x	x		All	V	C, MED	x	x	(x)[e]		(x)[e]	-
LT		x		x			All	V	ME, I	-	-			x	x
LT			x	x			All	V	C	x	-	-	-	-	(x)[b]
NL	x				x		All	V	C, ME, B, I	-	-	x			x
PL			x	x			All	V	C, MED, ID	x	-	-	-	-	-
PT	x			x			All	H	C, ME, I	x	x			x	x
RO			x	x			All	V	C, MED, BD, ID	x	-			x	(x)[b]
SK			x	x			All	V	C, ME, B, I	x	x			x	x
SK			x	x			All	H	C, ME, B, I	x	-			x	-
SL			x	x			All	V	C, ME, I	x	x			x	x
ES		x		x			All	V	ME, I, B	-	-	-	-	-	x
ES	x			x			All	H	C, ME, I	x	x	(x)[f]		x	x
ES	x[d]				x		All	V	L	-	x	(x)			x
SE	x[d]				x		All	V	L	-	x	(x)			-

Source: Own illustration, based on OECD (2025).

Note: Best practices within each evaluation and design criterion are highlighted in grey. Incentive bases are either volume-based (V) or hybrid (H). Expenses could include current expenses (C), labour expenses (L), machinery and equipment (ME), buildings (B), intangibles (I), depreciation on machinery and equipment (MED), buildings (BD) or intangibles (ID). [a] Considering current legislative changes. [b] Pre-approval is optional. [c] Only applicable for SMEs. [d] SSC exemption. [e] Payable in 3 instalments. [f] Refund available at 20% discount

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