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2

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Efficiency and Tax Gap in Latin American and Caribbean Countries: Value Added Tax and Corporate Income Tax

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Summary

The objective of this study is to analyze the revenue performance of the two main components of tax revenues in the countries of our region: the Value Added Tax (VAT) and the Corporate Income Tax (CIT). Throughout the document, estimates of tax revenue efficiency indicators are presented, and an effort is made to decompose theoretical tax revenue into its main components: effective revenue, tax expenditures, and tax non-compliance.

The extended time period covered by the analysis makes it possible to observe that current levels of tax revenue efficiency for both instruments are higher than in the past. At the same time, focusing on the results of the most recent three-year period covered by the study (2021–2023) allows us to identify the sensitivity of tax revenue efficiency to contextual factors.

During this latter period, the estimated tax revenue efficiency for VAT in the countries analyzed is 56.9% (slightly higher than the value estimated for the 2019–2021 period, 55,3%),[2] while the tax gap is composed of 14.6% attributable to the policy gap generated by tax expenditures and 28.4% attributable to X-inefficiency or the compliance gap.

Likewise, over the same period, the estimated tax revenue efficiency for CIT in the selected countries is 41.4% (below the average figure estimated for the 2016–2018 period, 42,2%),[3] while the tax gap consists of a 10.0% share attributable to the policy gap/tax expenditure gap and a 48.6% share attributable to X-inefficiency.

Throughout the entire series, CIT efficiency is lower than VAT efficiency. Nevertheless, the evolution of CIT shows a stronger performance, particularly in more recent periods, during which VAT efficiency remained stagnant, thereby narrowing the gap between the two indicators.

The interpretation of the results indicates that significant room for action still remains, with inefficiency levels at the end of the series reaching 0.45 and 0.58 for VAT and CIT, respectively.

Inefficiency, or the efficiency gap, is attributed both to foregone revenue due to tax expenditures and to foregone revenue resulting from tax non-compliance. The relative weight of these components within overall inefficiency differs when comparing VAT and CIT.

The decomposition of theoretical revenue components shows that, in the case of VAT, inefficiency is distributed in relatively similar proportions between the policy gap (tax expenditures) and inefficiency attributable to non-compliance, whereas in the case of CIT, the latter predominates, with tax expenditures playing a comparatively smaller role.

2 Fernando Peláez, "Efficiency and tax gap in Latin America and the Caribbean: Value Added Tax and Corporate Income Tax" Working Paper (March 2024). See https://www.ciat.org/Biblioteca/DocumentosdeTrabajo/2024/WP-02-24-Pelaez.pdf

3 *Ibidem.*

Contents

Introduction

The objective of this study is to analyze the revenue-raising efficiency of the two main components of tax revenues in the countries of our region—the Value Added Tax (VAT) and the Corporate Income Tax (CIT)—over a long time horizon up to recent years, and to provide an approach to the decomposition of the theoretical revenue of these taxes into their main elements: effective revenue collection, tax expenditures, and tax noncompliance.

The revenue capacity of a tax, or of a tax system, depends on a variety of factors.

Broadly speaking, at the design stage of a new tax or the reform of an existing one, the scope of the taxable economic event, knowledge of the magnitude of the variables that determine it, the type of tax base, and the level of tax rates applied to the taxable event, among other factors, allow for preliminary estimates of its potential revenue.

At a subsequent stage, involving a more precise delimitation of the instrument's scope through the introduction of certain exemptions or exceptions to its applicability, it becomes possible to obtain a more accurate approximation of its actual revenue capacity.

Once the tax has been implemented and is in operation, effective revenue collection can be observed. This may differ from initial estimates due to discrepancies between the ex ante and ex post determining variables, the greater or lesser incidence of the exceptions introduced, and the level of tax compliance.

The tax revenue gap is defined as the difference between the potential revenue that would be obtained under a theoretical design and the revenue actually collected. This gap serves as an indicator of potential revenue losses and can be decomposed into two broad categories: the policy gap and the compliance gap.

In 2011–2012, the Inter-American Center of Tax Administrations (CIAT) presented the study Estimating Tax Noncompliance in Latin America. This work was developed within the framework of the ITC/GIZ/CIAT Program for the Development of Tax Administrations in Latin America and the Caribbean, with the purpose of fostering discussion on the importance of measuring the economic dimension of tax noncompliance, in light of the limited development of evasion measurement at that time, particularly with respect to corporate income taxes.

The aforementioned study compiled existing estimates of evasion in VAT and CIT, highlighting the scarcity of published estimates for the latter. At the same time, it presented and applied a specific methodology, producing estimates of tax noncompliance for a group of Latin American countries over a ten-year period. The estimated series covered 14 countries and spanned the period 2000–2010.

In this context, the present document focuses on two taxes that constitute pillars of tax revenue in the countries of the region and worldwide: general consumption taxes, typically the Value Added Tax (VAT), and corporate income taxes (CIT).

The quantitative analysis presented here draws on various preexisting statistical sources related to these taxes and, through an indirect method, provides an estimate of the composition of the annual potential revenue of these taxes for 18 Latin American countries over a 32-year period. Within potential revenue, the analysis distinguishes the share represented by effective revenue collection, the revenue gap attributable to tax expenditures, and the revenue gap attributable to tax noncompliance.

Estimates of tax expenditures make it possible to quantify, at the level of each tax instrument and with identification of their origin, the foregone revenue attributable to the existence of exceptions in the tax system, such as exemptions, reduced rates, extraordinary deductions, simplified regimes, and other deviations from the theoretical design of the tax that result in lower revenue. These are revenue losses attributable to policy decisions, commonly referred to as the policy gap. Tax expenditures are quantified using the CIAT Tax Expenditure Database for Latin America and the Caribbean (TEDLAC). The compliance gap, or tax evasion, constitutes the second component of the difference between theoretical and effective revenue. [4]

Understanding the magnitude of the total gap and each of its components allows for a better assessment of the tax's lost revenue capacity, its origins, and the types of measures required to address each component. With respect to the compliance gap, as will be shown, it represents the least certain component of the quantitative decomposition of theoretical revenue. This paper provides an approximation of its measurement and evolution.

Quantifying tax evasion, analyzing its territorial distribution and temporal dynamics, and deepening the identification of its various components and the understanding of the subjective factors underlying its different manifestations are essential for effectively guiding strategies aimed at addressing it. In particular, for tax administrations, measurement constitutes a necessary condition for understanding the phenomenon and, on that basis, for designing and implementing appropriate actions to confront it.

4 In this sense, Michael Keen uses the term 'policy gap' to refer to revenue losses resulting from tax expenditures and uses the term 'compliance gap' to refer to VAT non-compliance. See 'The Anatomy of the VAT' in IMF Working Paper WP/13/111 (2013). Accessed at: < https://www.imf.org/external/pubs/ft/wp/2013/wp13111.pdf>.
For their part, Barreix et al. use the terms 'Inefficiency–G' to refer to the gap value attributable to policy, and 'Inefficiency–X' to refer to the value of the difference between unity and the sum of the tax revenue efficiency indicator plus Inefficiency–G. See 'El IVA, que sea lo que es' [The VAT, let it be what it is] in More than Revenue: Taxes as a Tool for Development, edited by Ana Corbacho, Vicente Fretes Cibils, and Eduardo Lora. Inter-American Development Bank (2013), Chapter 9. https://publications.iadb.org/es/publications/spanish/viewer/Recaudar-no-basta-Los-impuestos-como-instrumento-de-desarrollo.pdf.
While both documents refer to Value Added Tax, here we will extend this terminology to Corporate Income Tax as well.

1. Common Characteristics of the Two Main Instruments of Tax Collection

Although, from an economic perspective, the design, nature, and conceptual understanding of each tax differ, both instruments share certain common elements that, for the purposes of the analysis proposed here, justify their joint examination.

From the perspective of tax incidence analysis—an approach that seeks to determine who ultimately bears the tax burden—the effects of each tax on income distribution are different. From this viewpoint, although the legal incidence of both taxes typically falls on the same subject (the firm as taxpayer), the VAT is shifted forward along the production and commercialization chain, whereas this is not the case for the CIT, which is internalized by the taxpayer. Legal incidence refers to the entity designated by law as the taxpayer.

Tax shifting is the process through which the taxpayer attempts to recover the loss implied by the payment of the tax, seeking to restore its situation prior to the tax burden.

From the perspective of firm-level accounting, the VAT constitutes a periodic obligation of the firm toward the tax administration, arising as the net value of liabilities generated by each taxable sale transaction, minus the assets generated by each purchase transaction when the VAT included therein is deductible; therefore, the tax does not alter the firm's economic result.[5]

The CIT is also a periodic obligation, but unlike the VAT, it does affect the firm's economic result, as it is determined after the realization of accounting income and defines the firm's after–direct-tax result. In light of the shifting process described above, the VAT, as an indirect tax, is shifted outside the firm, whereas the CIT, as a direct tax, is absorbed or internalized by the firm.

The first common characteristic identified is that both taxes share the same subject of legal incidence, that is, the same taxpayer: firms. In other words, firms—or more generally, depending on the scope established in each country's tax legislation, productive units that combine own and external factors of production to generate economic results—are responsible for documentation, assessment, declaration, payment, and other obligations associated with both taxes.

The second common factor relates to the tax base, or more precisely, to the method for determining the tax base.

The tax base can be defined as the magnitude used to determine or quantify the tax liability. From this concept, it follows that both taxes partially share the main variables that determine the calculation base. While the VAT tax base is determined

5 Without overlooking the portion of VAT included in purchases that, for legal reasons, is non-deductible and constitutes an economic loss for the company—as occurs, for example, in the case of VAT on purchases associated with exempt sales.

as the difference between taxable outputs and inputs, subject to specific rules, the CIT tax base is determined as income minus total deductible expenses, also subject to specific rules.

Billing, sales, or revenues constitute, to a large extent, the primary input variable for determining the tax base of both VAT and CIT. Due to their magnitude, sales represent the main determining variable for both taxes and are under the control of the firm. Purchases or expenditures, in turn, form part of the inputs for VAT, insofar as they are subject to the tax, and may form part of the deductible expenses for CIT, insofar as, within the fiscal year, those purchases are consumed in the generation of income.

A relevant difference between the two taxes concerns the acquisition of long-term assets, fixed assets, or capital goods. When such acquisitions are subject to VAT, tax legislation generally allows the full deduction of the VAT paid on the purchase in the same period, whereas the value of the asset is deductible for CIT purposes gradually, in accordance with the depreciation rules established in the tax law.

There are also other expenditures that are not subject to VAT but do form part of deductible expenses for CIT purposes. The most typical and probably the most significant case, given its relative weight, is wages and social security contributions, which are not subject to VAT but are deductible for CIT purposes.

This strong connection in the structure and calculation of the tax base of both taxes implies that certain changes in revenues or expenditures generate effects on both tax bases simultaneously. For example, a decline in sales during a given economic period reduces the tax base of both VAT and CIT. Similarly, an increase in sales, even when accompanied by an increase in expenditures, is likely to raise the nominal tax base of both taxes and, consequently, increase tax revenue.

2. Tax Gap Estimation Methodologies

The two main approaches to estimating the tax gap, or tax evasion, are the top-down and bottom-up methods, also referred to as indirect and direct methods, respectively. Each approach has advantages, limitations, and distinct areas of application.

Indirect methods rely on macroeconomic indicators—such as national accounts data or household and enterprise surveys—to estimate the theoretical tax base and potential revenue, whereas direct methods are based primarily on administrative data and are intensive in their use.

Some direct estimation methodologies can produce an aggregate measure of the tax gap, although they typically have a more precise focus, providing results for specific groups or subsegments of taxpayers. These methodologies also tend to be more suitable for targeted compliance actions that tax administrations can implement ex post.

Rubín[6] notes that although both direct and indirect methods provide uncertain estimates of the overall tax gap, the former has the important advantage of delivering operationally useful information for tax administrations. The detailed breakdown of the tax gap required by a bottom-up approach allows for better prioritization of administrative resources in order to maximize tax revenue.

Among the most representative direct methods—widely discussed in the literature but with limited empirical application—are those based on audits. In a hypothetical scenario in which it were possible to comprehensively audit all registered taxpayers, and in which the tax administration also had the capacity to identify, audit, and quantify tax bases generated in the informal economy, the magnitude of tax evasion could be precisely determined and its components fully characterized. This would, in principle, make it possible to quantify tax liabilities and advance toward their eventual enforcement. However, this scenario is purely theoretical and unattainable in practice.

Auditing is the most complex and resource-intensive activity carried out by tax administrations. The audit rate—the ratio between the number of taxpayers audited in a given fiscal year and the total number of taxpayers on the register—generally indicates that, a priori, the probability of any given taxpayer being audited within the statute of limitations period is low.

Audit samples can be useful for inferring the behavior of noncompliance based on the results obtained from a selected subset of taxpayers. The objectives and characteristics of the sampling process determine whether the results can be extrapolated to the entire population.

6 Marcus Rubin, "The practicality of the Top-down Approach to Estimating the Direct Tax Gap" Her Majesty's Revenue and Customs, United Kingdom (2011). Consultado en < https://www.irs.gov/pub/irs-soi/11rescontaxgap.pdf>.

Random audit programs are applied to taxpayers selected at random in order to be representative of the broader population that the sample is intended to represent—whether an economic sector, a geographic area, or the entire taxpayer population. A random sample allows inference of results for the represented population with a known margin of error, making it possible to quantify and characterize the phenomenon. This methodology can be enriched by incorporating standardized surveys of audited taxpayers in order to capture subjective aspects of tax evasion.

In practice, these methodologies are rarely implemented in their most general form. Audits must be carried out by the tax administration itself, which must allocate a significant share of its audit capacity to such programs. Given taxpayer heterogeneity, the sample size required to represent the entire population may be comparable to the number of audits ordinarily conducted. At the same time, the average yield of an audit of randomly selected taxpayers is typically lower than that obtained under risk-based selection.[7]

These constraints mean that such methodologies receive limited resources and are applied not to the entire population but to subsets thereof—such as a single sector, a value chain, a geographic area, or other strata—with smaller samples or are not implemented at all.

A more commonly used direct method is the exploitation of the results of routine audits. This approach does not interfere with audit operations and, through the systematization of routine audit outcomes, allows estimation of the evasion detected by the administration. Measuring detected evasion is useful for evaluating the effectiveness of audit strategies and, when combined with overall evasion estimates derived from indirect methods, allows inference regarding the administration's capacity to select taxpayers and identify tax liabilities.

If the ratio between the detected evasion rate and the overall evasion rate is greater than one, the administration can be said to be selecting taxpayers with relatively higher levels of noncompliance. The farther the ratio is from one, the greater this capacity. A ratio below one indicates that audit results are below the average evasion rate, suggesting weak capacity to select and identify tax liabilities.

It is advisable to apply more than one analytical perspective when measuring tax evasion. The comparison between indirect-method estimates and evasion detected by the administration constitutes an interesting and low-cost combination that can yield results useful for reviewing audit strategies.

There is a wide range of other techniques based on tax information. A particularly relevant reference, especially for the Corporate Income Tax (CIT), is the report of His Majesty's Revenue and Customs (HRMC),[8] as well as the report of the Tax Gap Project Group (TGPG).[9] The latter identifies a set of econometric techniques based on tax data, such as

7 This is insofar as the administration possesses selection processes that identify the highest levels of non-compliance.

8 HMRC Working Paper No. 12, "The practicality of a top down approach to the direct tax gap" (2011). See: https://assets.publishing.service.gov.uk/media/5a756506ed915d7314959a07/taxgap-workingpaper.pdf.

9 FISCALIS Tax Gap Project Group (FPG/041), "The concept of tax gaps. Report II: Corporate Income Tax Gap Estimation Methodologies" (2018). See: https://www.europarl.europa.eu/cmsdata/161065/Part%20II%20_%20Estimation%20Methodologies.pdf.

matching methods used to compare companies, specifically to analyze income shifting across countries by multinational enterprises.[10]

According to the TGPG, direct methods offer several important advantages in addition to greater certainty of results. First, they can provide guidance for identifying the causes of evasion, as they focus on specific components with uniform and well-defined characteristics. Second, they offer greater precision and reliability of estimates due to the higher level of granularity required by these approaches. In particular, random audits make it possible to identify sectors or regions with larger gaps and the most vulnerable areas of the tax, allowing for adjustments to mitigate evasion.

Their main drawback is that these approaches are resource-intensive, especially when based on random audits. Matching methods also require extensive data, complex preliminary calculations, and detailed information on relevant variables, which can be time-consuming. HRMC[11] highlights this same limitation but considers that top-down methods can potentially support the estimation of some elements of the tax gap derived from direct approaches.

Indirect methods, by contrast, tend to provide a more comprehensive picture of the tax gap, as they generally measure the total gap for a given tax. This allows an approximation of the magnitude of the phenomenon and its evolution over time, although their main limitation is the difficulty of translating these results into indicators that directly support concrete administrative actions. These estimates do not answer the question of why noncompliance occurs, nor why certain areas or sectors fail to comply adequately.

Among the most widely recognized and used indirect methodologies are those based on National Accounts. Although these methods have lower data requirements, their application still requires an appropriate dataset that is explanatory of the taxable base to be estimated or, alternatively, the introduction of adjustments to align macroeconomic variables with the tax bases of the taxes under analysis.

To apply indirect methods that estimate potential revenue based on National Accounts data, it would be ideal for this information source to be produced independently from tax data. Although tax administrations are not responsible for producing National Accounts data, information exchanges with the institutions responsible for their compilation are common.

The System of National Accounts (SNA)[12] suggests that it is desirable for macroeconomic accounts of sectors or the total economy to be obtained directly by aggregating data from individual units—information that tax administrations largely possess. According to the SNA, using such information would bring analytical advantages by providing microeconomic databases compatible with macroeconomic sectoral and aggregate accounts. However, the SNA also notes that even

10 See Federico Sallusti, "Measuring profit shifting in Italy with propensity score matching and receiver operating characteristics analysis (PS-ROC) method" en *UNCTAD Research Paper* No. 64 (2021). See: https://unctad.org/system/files/official-document/ser-rp-2021d7_en.pdf.

11 HRMC, *op. cit.*

12 United Nations (UN) (in coordination with the European Commission, the Organisation for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF), and the World Bank), 'System of National Accounts 2008', UN (2016). Accessed at < https://unstats.un.org/unsd/nationalaccount/docs/sna2008.pdf >

when individual institutional accounts or records are available, concepts appropriate at the microeconomic level may not be suitable at the macroeconomic level.

Even when National Accounts do not rely on administrative data, tax revenue—and the revenue from each specific tax in a given period—constitutes a macroeconomic variable in its own right: real, recorded, verifiable, and often available earlier than National Accounts data for the same period. This characteristic makes tax revenue data a source that can at least be used to verify consistency with National Accounts and their evolution.

Interdependence between the explained variable and the recording of explanatory variables can generate interference in the estimation of the tax gap using indirect methods.

These weaknesses do not prevent the implementation of estimates using the methodologies described above; however, it is important to bear this interdependence in mind, as it allows for a more accurate assessment of estimation results.

2.1. The practice of Tax Gap Estimation by CIAT Countries

The International Survey on Revenue Administration (ISORA) provides comparative information on tax administrations in 179 countries, based on data collected in 2023 and referring to the situation in 2022, with expanded coverage compared to previous editions. The survey includes countries from all regions of the world and offers a systematic overview of the institutional structure, administered revenues, human resources, operational processes, and the level of digitalization of tax administrations. Participants include 38 member countries of the Inter-American Center of Tax Administrations (CIAT), as well as administrations linked to other multilateral organizations, such as the OECD, making ISORA a central source for comparative analysis and for the study of trends and stylized facts in tax administration.[13]

The survey includes questions regarding the practice of estimating and publishing estimates of tax evasion in VAT, CIT, PIT, and other taxes by tax administrations. Table 1 summarizes the results of the responses from countries in the region.

13 CIAT, Overview of Tax Administrations in CIAT countries (2025).

Table 1. Estimations and Publications of Tax Evasion Studies.

Countries	Periodic Tax Gap Estimations CIT	Periodic Tax Gap Estimations VAT	Tax Gap Publications (Tax not specified)
Argentina	No	Yes	No
Bolivia	No	Yes	No
Brazil	Yes	Yes	Yes
Chile	No	Yes	No
Colombia	Yes	Yes	Yes
Costa Rica	Yes	Yes	No
Dominican Republic	Yes	Yes	Yes
Ecuador	No	Yes	No
El Salvador	Yes	Yes	No
Guatemala	No	Yes	Yes
Honduras	No	Yes	Yes
Jamaica	Yes	Yes	Yes
Mexico	No	No	No
Nicaragua*	No	No	No
Panama	Yes	Yes	Yes
Paraguay	Yes	Yes	No
Peru	Yes	Yes	Yes
Uruguay	Yes	Yes	No
Estimations & Publications	10	16	8

Source: based on ISORA 2023, with the exception of Nicaragua ISORA 2020.

The table shows that, out of a total of 18 countries analyzed, 16 reports estimating VAT evasion. With respect to the CIT, 10 of the countries under analysis report estimating CIT evasion. Only 8 countries indicate that they publish such estimates. These results highlight that the practice of estimating tax evasion is not yet fully widespread, particularly in the case of CIT.

2.2. Tax Gap Approach based on Revenue Collection Efficiency

One way to approach the measurement of the tax gap using indirect methods is through indicators of revenue-raising efficiency.

These indicators are based on estimating the potential revenue of a tax and then comparing observed revenue with its theoretical potential.

In the following section of this study, we present our own estimates based on revenue efficiency indicators for VAT and CIT. Information on tax expenditures for the countries under analysis is used to decompose the efficiency gap into two components: the policy gap and the compliance gap. We then present the methodological framework for calculating this indicator for each tax.

2.3. VAT Revenue Collection Efficiency

In the case of VAT, the *C-efficiency* indicator or the VAT Revenue Ratio (*VRR*) is a widely used tool for analyzing the performance and evolution of VAT revenue, and it allows policymakers to assess whether the tax has the potential to increase its revenue-raising capacity. According to Keen,[14] this indicator has become a widely used instrument for evaluating VAT by comparing actual VAT revenue with the revenue that would be obtained if the tax were applied perfectly at a uniform rate equal to the standard rate on all consumption, without exceptions.

The Organisation for Economic Co-operation and Development (OECD),[15] states that the objective of the VRR is to provide comparative measures of countries' ability to effectively secure the potential VAT tax base and is the institution that proposes the *VRR* ratio. The resulting ratio lies between 0 and 1, since actual tax revenue is lower than potential revenue due to the existence of exemptions and evasion. The value of the indicator reflects the efficiency of VAT revenue collection: the closer the value is to 1, the higher the efficiency of the VAT under analysis (low tax expenditures and low levels of evasion). The key challenge is to accurately identify and quantify the tax base. The indicator is defined as follows:

$$VRR_{VAT} = \frac{VR_{VAT}}{B_{VAT} r_{VAT}}$$

Where:
VR = VAT Revenue
B = Potential Taxable Base
r = Standard VAT rate

The numerator corresponds to VAT revenue. Although revenue records for a given period (e.g., annual data) are usually available, for the purpose of estimating a specific fiscal year it is preferable to use accrued VAT revenue corresponding to the same period for which the potential tax base is observed.

The potential tax bases used in this analysis are expressed on a calendar-year basis. In practice, tax liabilities are paid after the taxable event occurs. This implies that revenue records are subject to a time lag relative to the tax base. Such lags may generate changes in revenue efficiency in one fiscal year that are recorded in the following year. To obtain a long-term perspective on revenue efficiency, potential revenue can be compared with effective cash-based revenue, prioritizing the evolution of the ratio rather than point estimates.

14 Michael Keen, *op. cit.*

15 OECD, "Consumption Tax Trends 2024: VAT/GST and Excise. Core, Design, Features and Trends". Published by OECD (2025).

The denominator includes two elements:

First, the standard VAT rate, which for the purposes of this indicator refers to the rate established in the VAT law of the country under analysis. The objective is to apply the standard rate to the entire tax base in order to calculate the potential revenue that would be obtained if the tax were applied perfectly at a uniform rate to all consumption, without exceptions. In practice, VAT systems apply a uniform rate to most goods and services, while certain exceptions exist for specific transactions depending on the nature of goods or services, the type of taxpayer, the territorial scope of transactions, and other factors. The standard rate is therefore derived from the legal provisions governing the tax.

Second, the tax base. For the indicator analyzed here, this variable is provided by the System of National Accounts (SNA).

Value-added taxes, or general taxes on the sale of goods and services—and in particular the VAT systems analyzed for this group of countries—generally take the form of taxes levied on the circulation of goods and services at all stages of production and commercialization, up to the final stage, with exports excluded. Although firms selling goods and services are formally designated as taxpayers, in practice the tax is shifted forward. VAT is an indirect tax whose ultimate economic incidence falls on the final consumer, or more generally on any purchaser without the right to claim input tax credits (final consumers, non-profit organizations, and central government).

Given the available statistical data for the countries analyzed,[16] we use selected components of the Use of Income Account in each country's System of National Accounts as an approximation of the final tax base. The Use of Income Account shows how households (HH), government units (GU), and non-profit institutions serving households (NPISH) allocate their disposable income between final consumption and saving.[17]

Household final consumption expenditure corresponds to spending by resident households on consumer goods and services. It includes, among other items, direct purchases of goods and services and goods and services produced and consumed within the same household.

The Use of Income Account also includes expenditure on goods and services, whether individual or collective, by government and NPISH.

As stated in the SNA Manual, the value of actual final consumption of general government is equal to the value of total final consumption expenditure minus expenditures on individual goods or services supplied to households as social transfers in kind. The value of actual final consumption of government units is therefore equal to the value of expenditures incurred in providing collective services or certain individual goods and services. A similar criterion should be applied to the consumption of NPISH. The value of actual final consumption of NPISH should be equal to the value of their total final consumption expenditure minus expenditure on individual goods or services supplied to households as social transfers in kind.

16 The macroeconomic statistics used for estimating potential tax revenue are sourced from the countries' Systems of National Accounts, or from statistics available through UNdata, a United Nations database service that provides official data and statistics from various countries. Statistics from DataBank, a World Bank analysis and visualization tool containing sets of data series on a variety of topics, may also be used as input.

17 ONU, *op. cit.*

This approximation of the theoretical tax base that we construct is determined by the sum of the three components mentioned above, from which we subtract actual VAT revenue, given that the valuation rules of these accounts indicate that expenditure is recorded at the total value of the consideration paid or imputed, which includes, among other items, sales taxes or VAT.

$$VRR_{VAT} = \frac{VR_{VAT}}{[HH + GU + NPISH - VR_{VAT}].r_{VAT}}$$

Based on this approximation, the denominator provides an estimate of theoretical VAT revenue collection (TC_{VAT}) obtained by applying the statutory standard rate of the tax to the aforementioned amount. As is well known, VAT applies to the general circulation of goods and services, with a statutory standard rate and a set of exceptions, such as exempt goods and services, goods taxed at reduced rates, and other special treatments. Theoretical revenue therefore aims to capture the revenue potential of a tax that would apply a single uniform rate to all goods and services without exceptions.

$$TC_{VAT} = [HH + GU + NPISH - VR_{VAT}].r_{VAT}$$

As noted above, the value of the ratio should lie between 0 and 1. The difference between unity and the estimated VRR is referred to as revenue collection *inefficiency*.[18] Revenue collection *inefficiency* represents the total gap between theoretical and effective tax revenue.

At this point, a key question arises: what are the components of the total gap? As discussed earlier, exceptions to the application of the statutory rate to the tax base exist, including exempt goods and services, reduced-rate goods, special credits or deductions for tax purposes, and other deviations from the benchmark tax structure.

The set of tax exceptions is identified and valued in countries' tax expenditure reports. CIAT monitors these reports and maintains a systematic record of tax expenditures by country,[19] tax, fiscal year, type of tax expenditure, and other variables. Using this information, we estimate what is referred to as the policy gap.

Regarding the policy gap, Keen[20] and other authors recognize this component and attribute it essentially to tax expenditures, calculated under the assumption of full compliance. The policy gap can be decomposed into gaps attributable to different characteristics of the exceptions embedded in the tax system. Díaz de Sarralde,[21] refers to this concept as "G-inefficiency."

18 Insofar as we correctly identify the tax base and the System of National Accounts captures the entirety of the base intended to be exposed. If the tax base is underestimated, for example, we could arrive at an efficiency indicator greater than 1. Conversely, if the variables are overestimated, we would determine an index lower than the actual one, leading to the perception that the tax is less efficient than it truly is.

19 This information is compiled in the Tax Expenditure Database for Latin America and the Caribbean (TEDLAC). For further information, please visit the CIAT website: Tax Expenditures | Inter-American Center of Tax Administrations.

20 Michael Keen, *op. cit*.

21 Santiago Díaz de Sarralde, "Value Added Tax: Revenue, Efficiency, Tax Expenditure and Inefficiencies in Latin America". Interamerican Center of Tax administrations (CIAT) https://biblioteca.ciat.org/opac/book/5556 >.

By subtracting from unity (equivalent to full revenue efficiency, given the theoretical base) both the revenue efficiency index and the portion of inefficiency attributable to the policy gap, we obtain a residual value. Barreix[22] refers to this residual as "X-inefficiency," by analogy with the concept used to denote explanatory components of internal efficiency losses in firms that are not explicitly defined.

Under the assumption that the selected variables accurately reflect the taxable base of the tax, and that the identification and estimation of tax expenditures are complete and consistent with these variables, this residual could be fully attributed to noncompliance. Keen refers to this component as the compliance *gap.*[23] In practice, however, even the best selection of macroeconomic variables will not perfectly explain the tax base of the tax under analysis.

Moreover, tax expenditure studies exhibit certain methodological weaknesses in their construction. In many cases, their estimation bases are not macroeconomic accounts but rather tax microdata. As a result, the final gap—the residual differential identified—will be attributable to multiple factors, including tax noncompliance.

2.4. CIT Revenue Collection Efficiency

As discussed earlier, in the case of VAT, *C-efficiency* or the VAT Revenue Ratio (VRR) is a widely used tool for analyzing the performance and evolution of VAT revenue, implicitly comparing the revenue actually collected by VAT with the revenue that would be obtained if the tax were applied perfectly at a uniform rate equal to the standard rate on all consumption, without exceptions.

By contrast, this approach to estimating the tax gap through revenue efficiency is far less developed in the case of the corporate income tax (CIT). Likewise, estimates (or the publication of estimates) of the tax gap in this tax are not widespread, whether through other variants of indirect methods or through methodologies based entirely on tax data, as noted in the summary table of the ISORA survey.

Rubin,[24] provides a detailed inventory and characterization of these estimates and argues that one of the reasons for their limited development is the degree of dependence of macroeconomic variables on tax administration data. According to this author, this endogeneity is more pronounced for macroeconomic variables related to income than for those related to consumption, making it one of the factors that explain the lower prevalence of estimates (or published estimates) for the CIT compared with VAT. Rubin also points to the difficulty of converting Gross Operating Surplus into the corporate tax base as another major obstacle.

In practice, corporate income taxes, business income taxes, or general taxes on corporate profits—here generically referred to as CIT—are usually levied by applying a proportional tax rate to firms' economic results (accounting profits), adjusted for tax purposes. Accounting results are subject to specific fiscal adjustments, thereby determining the tax base, that is, taxable income.

22 Alberto Barreix *et al.*, *op. cit.*, chapter 6.

23 Michael Keen, *op. cit.*

24 Marcus Rubin, *op. cit.*

Given the method used to determine the CIT tax base and the set of statistical data available for the countries under analysis, we draw on selected items from the Generation of Income Account, which reflect the share of value added distributed to capital. The Generation of Income Account is a sub-account of the Primary Distribution of Income Account.[25] In this account, value added is distributed among labor (compensation of employees), capital, and government (taxes less subsidies on production). The portion corresponding to capital is reflected in the balancing item of this account: the operating surplus and/or mixed income.

The balancing item of the Generation of Income Account—the share of value added distributed to capital—results from deducting compensation of employees and taxes less subsidies on production from Gross Value Added. This balance measures the surplus or deficit generated by production.

This balancing item is referred to as Operating Surplus, or Mixed Income in the case of unincorporated enterprises owned by households, in which the owner supplies labor whose remuneration cannot be distinguished from the return generated by the entrepreneurial activity carried out.

The balance of the income generation account conceptually differs from the consolidation of firms' accounting results insofar as the former are expressed in national accounts in gross terms, without considering the consumption of fixed capital or compensation for financial services received or provided.

Consumption of fixed capital is defined as the decline, during the accounting period, in the current value of the stock of fixed assets owned and used by a producer, resulting from physical deterioration and normal obsolescence. The equivalent term in accounting is depreciation or amortization of fixed assets.

Compensation for financial services, in turn, refers to income payable on financial assets or natural resources received on loan or lease by the firm, as well as any interest, rent, or similar income receivable from financial assets or natural resources owned by the firm.[26]

Most of the statistical information available for this estimation reports the balances of the income generation accounts in gross terms. In order to approximate firms' net accounting results, we deduct from this balance an estimate of consumption of fixed capital. This estimate is linked to the Gross Fixed Capital Formation account in the use of income account. Gross fixed capital formation comprises acquisitions of new and existing fixed assets through purchase, barter, or own-account capital formation, minus disposals of existing assets through sale or barter.[27]

The comparison between the theoretical revenue obtained by applying the statutory tax rate in each country and fiscal year to the theoretical tax base, and the effective revenue actually collected, yields the revenue efficiency of the corporate income tax (CIT). The difference between unity and the estimated revenue efficiency is defined as *revenue inefficiency*.

25 ONU, *op. cit.*

26 ONU, *op. cit.*

27 *Ibidem.*

Using information on tax expenditures for this tax, we can determine the portion of the gap associated with the policy gap, or *G-inefficiency*, while *X-inefficiency*—which includes tax evasion—corresponds to the difference between unity, revenue efficiency, and *G-inefficiency*, in the same manner as described for the VAT in the previous subsection.

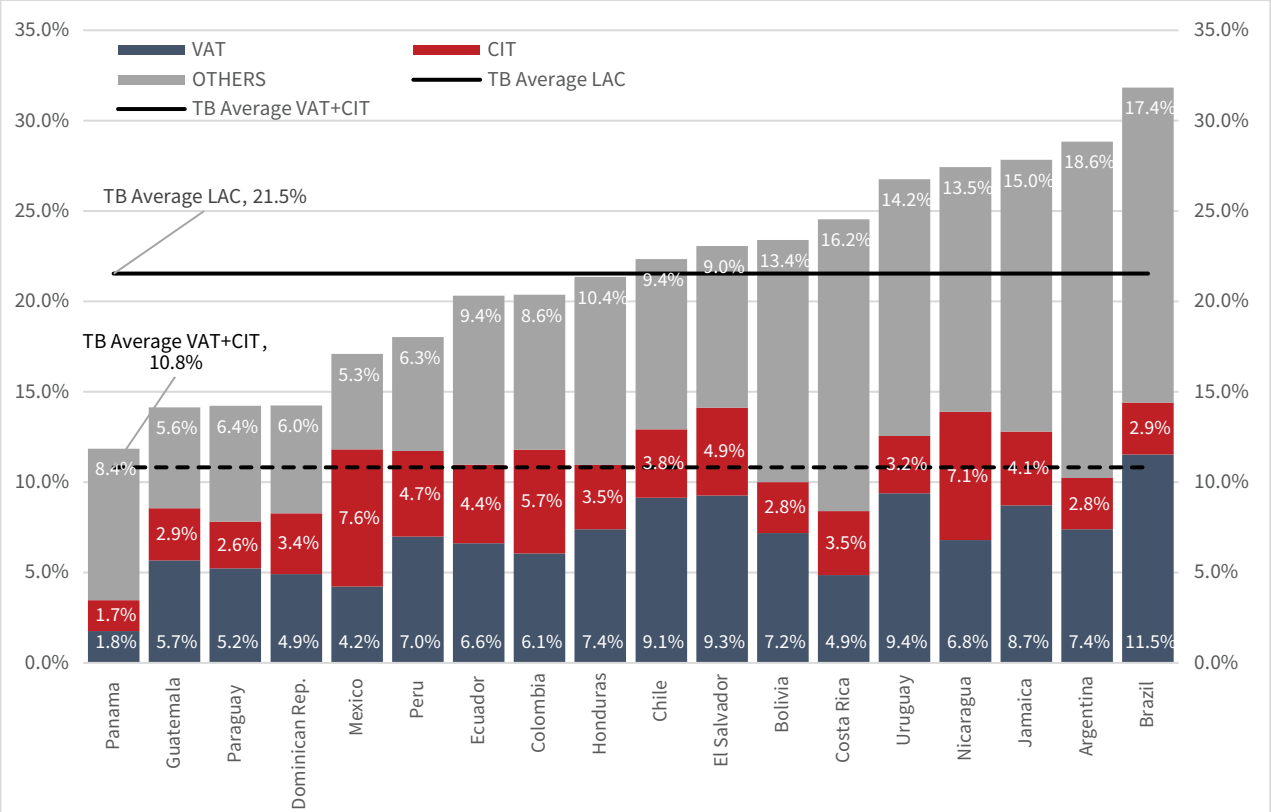
In what follows, we present relevant statistics for these two taxes for Latin American countries, followed by the methodology and results of the estimations of revenue efficiency and the components of the tax gap.

3. Presence in the Collection of VAT and CIT

The analysis developed in this study focuses on two tax instruments that occupy a central position in the structure of fiscal revenues, both in the countries of the region and internationally. First, broad-based consumption taxes, primarily represented by the value-added tax (VAT), and second, taxes on corporate profits, referred to here as corporate income taxes (CIT).

Using revenue[28] series and administrative tax records from the countries—particularly those related to value-added taxes, sales taxes, and corporate income taxes—together with countries' GDP series, we can estimate the overall tax burden, specifically that associated with VAT and CIT revenues, as well as the remaining components of tax revenue.

Figure 1. Tax Burden: Total, VAT and CIT. Latin America and the Caribbean. Average 2021 – 2023.



Source: Prepared by the authors based on IDB&CIAT statistics and national accounts series of the countries.

28 Dalmiro Morán and Marco Solera, "Equivalent Fiscal Pressure in Latin America and the Caribbean (1990–2021)". BID & CIAT (2023). See WP-02-2023: Equivalent Fiscal Pressure in Latin America... | OPAC – CIAT

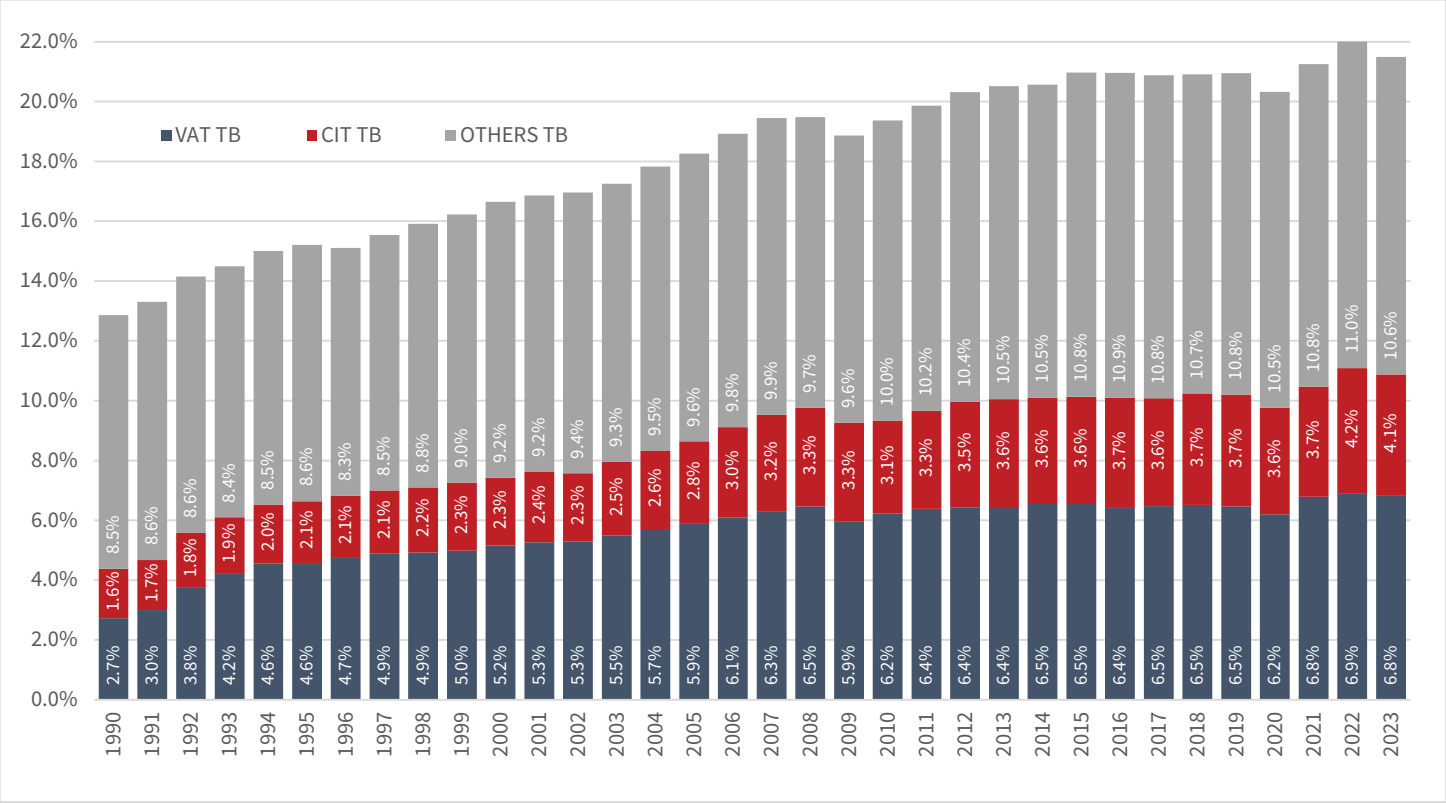
In the most recent period observed (2021–2023), the average tax pressure of the countries considered amounted to 21.5 percent of GDP. VAT and CIT revenues together account for nearly 50 percent of total tax pressure, although the relative weight of each tax varies across countries.

With respect to VAT-type taxes, the lowest levels of tax pressure in the period analyzed are observed in Panama (1.8 percent), Mexico (4.2 percent), and Costa Rica and the Dominican Republic (4.9 percent). At the other end of the spectrum, the highest levels of VAT tax pressure in the region are recorded in El Salvador (9.3 percent), Uruguay (9.4 percent), and Brazil (11.5 percent).

The figure shows that CIT has a smaller relative presence in tax pressure compared to VAT. Nevertheless, the weight of this tax remains significant, representing more than half of the VAT burden. As noted above, VAT and CIT together account for around 50 percent of the average tax pressure in Latin America and the Caribbean.

Nicaragua stands out as the country with the highest CIT tax pressure (7.1 percent of GDP on average in 2021–2023), followed by Peru (4.9 percent). Among countries with lower levels of CIT tax pressure are Panama (1.7 percent) and Paraguay (2.6 percent).

Figure 2. VAT Tax Burden, CIT Tax Burden, Others Tax Burden, long term. Average of Latin America and Caribbean countries. 1990 – 2023



Source: Prepared by the authors based on IDB&CIAT statistics and national accounts series of the countries.

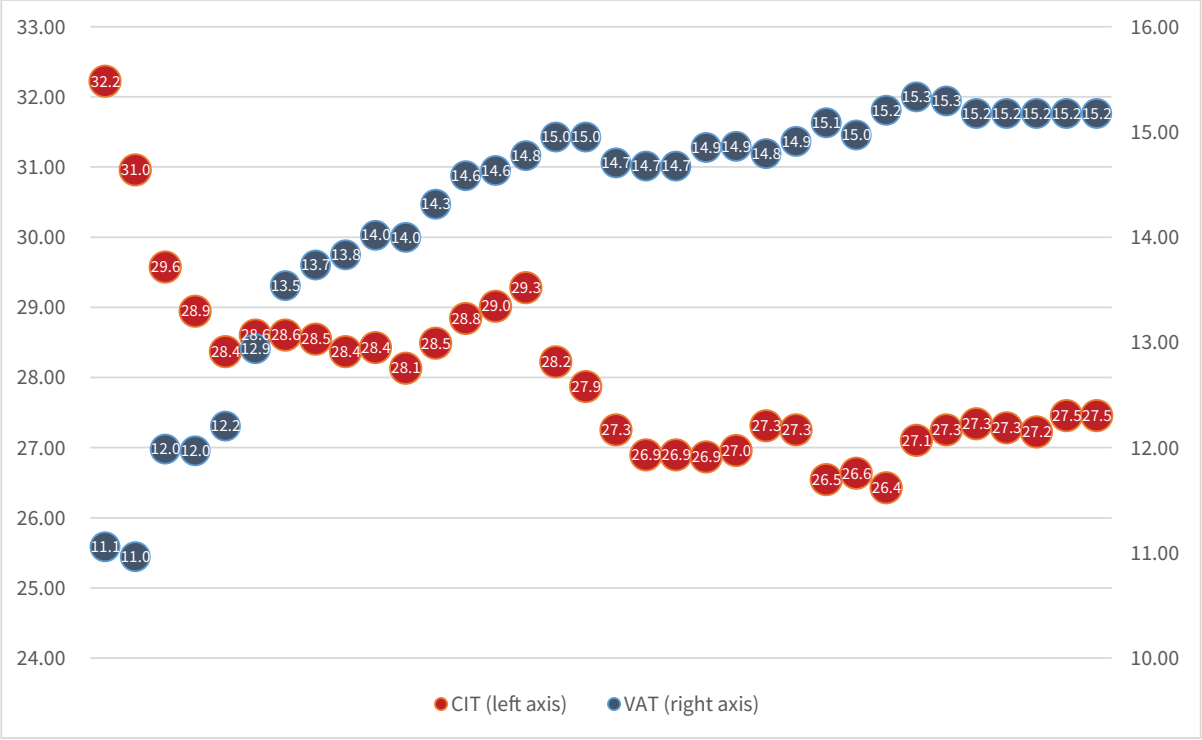
From a long-term perspective, average tax pressure in Latin America and the Caribbean has increased steadily over time, with the exception of 2008, 2009, 2020, and 2023. While tax revenue represented 12.9 percent of GDP in 1990, tax pressure reached 21.5 percent in 2023, reflecting a decline of 0.6 percentage points of GDP relative to the previous year.

The figure indicates that the two components analyzed here—VAT and CIT—explain most of this growth, as the "Other" component fluctuated between 8.5 and 10.6 percent of GDP over the period.[29] At the same time, both taxes appear highly sensitive to the economic context, accounting for most of the declines observed in 2008 and 2020.

Currently, VAT and CIT together account for nearly 50 percent of average tax pressure in Latin America and the Caribbean, whereas at the beginning of the period they represented only 30 percent. This increased share is explained by successive reforms implemented by countries in the region, focused on broadening tax bases, reducing exemptions, and strengthening the role of tax administrations in the management of these taxes.

Within the remaining components of countries' tax pressure, a wide range of tax instruments is included, among which social security contributions, excise taxes, and personal income taxes are particularly significant.

Figure 3. VAT and CIT Legal Rates. Average of LAC. 1990 – 2023



Source: Prepared by the authors, based on Tax rate CIAT series and country legislation.

29 Within the 'Other' category, although the series has remained stable over time, its components do not exhibit homogeneous behavior. Certain items, such as Personal Income Tax (PIT), have shown an increased share of the tax burden following structural reforms implemented by several countries in the region. Conversely, others—such as excise taxes or taxes on international trade—have seen a reduction in their overall contribution to the tax burden.

With regard to statutory tax rates and considering that these taxes generally apply proportional rates to the tax base, a gradual increase in VAT rates across countries was observed, albeit with persistent heterogeneity, alongside a decline and greater convergence in corporate income tax (CIT) rates.

At the beginning of the period, the VAT exhibited an average statutory rate of 11.1%,[30] which increased steadily—albeit with some exceptions over time—reaching a current average of 15.2 percent. Although reforms in this parameter of the tax have generally been biased upward, no clear trend toward convergence in VAT rates across countries[31] can be identified.

In the case of the CIT, the evolution of the average statutory rate shows a downward trend, from an average value of 34.8 percent in 1990 to a current average of 27.8 percent. At the same time as the average rate declined, the data suggest that reforms in this tax took the regional context into account, resulting in greater convergence in statutory rates[32] across countries.

It is important to note that the border adjustment mechanism embedded in virtually all VAT designs minimizes the distortions that the tax may generate in competition between domestic and imported products. As a result, jurisdictions in the region have greater flexibility in setting VAT rates without needing to closely consider the immediate geographic context or the origin and destination of traded goods. By contrast, the CIT can act either as an incentive or a deterrent to investment, and therefore this parameter of the tax—among others—is typically determined with reference to its potential impact on investment decisions, taking into account the direct regional context.

Finally, it is worth noting that although the analysis focuses on a group of countries within the same geographical region, the data reveal substantial differences in their revenue-raising capacity (Figure 1).

The tax burden of the three countries with the highest levels of revenue collection is 2.2 times greater than that of the three countries with the lowest levels. With respect to the taxes analyzed here, the data show that countries with lower levels of tax pressure tend to rely more heavily on VAT and CIT revenues. With the exception of Panama, in the ten countries with the lowest tax pressure (the bottom half of the distribution), VAT and CIT jointly account for nearly 60 percent of total tax pressure, whereas in the seven countries with the highest tax pressure, these two taxes represent, on average, 43 percent of total revenue. These differences in composition, associated with varying revenue-raising capacities, suggest that countries with higher tax pressure have more diversified revenue bases, while countries with lower levels of revenue collection are particularly dependent on VAT and CIT.

30 We are referring to the average general VAT rates applied in each country for each year. This visualization does not include specific rates, reduced rates, or increased rates, among others.

31 This statement is supported by an analysis of the interquartile range of the countries' tax rate series. While in 1990 the central 50% of the distribution of rates was 6 percentage points (7.0:13.0), in 2018 the central 50% of the distribution was 5 percentage points (13.0:18.0).

32 In the case of CIT, the 1990 interquartile range (32.0:40.0) spanned 8 percentage points, whereas this range narrowed to 4.5 percentage points in 2020 (25.0:29.5).

4. The Gap between Theoretical Collections and Effective Collections

As discussed in the previous sections (Figure 1 and Figure 2), the revenue-raising capacity of the countries analyzed—measured through the evolution of tax pressure—has increased over time, driven to a significant extent by the two taxes under consideration: VAT and CIT.

In this section, we focus on estimating the theoretical revenue of each of these taxes on the basis of selected macroeconomic aggregates. We then measure the weight of actual revenue relative to theoretical revenue, that is, revenue efficiency. We define the economic tax gap as the difference between theoretical and actual revenue and subsequently seek to disentangle the portion of the gap attributable to existing exemptions and preferential treatments in the tax system, using as an input the CIAT Tax Expenditure Database for Latin America and the Caribbean (TEDLAC).

Finally, as a residual, we estimate the share of potential revenue attributable, among other components, to tax non-compliance. Knowledge of actual revenue and tax expenditures allows us to estimate the portion of potential revenue that remains unexplained and that can therefore be attributed to the compliance gap.

This exercise consists of estimating potential revenue through an adaptation of macroeconomic aggregates that best approximate the tax base of each tax under analysis, while acknowledging the limitations of this indicator, as discussed in the previous section.

4.1. Estimation of the Theoretical VAT Collection, the Collection Gap and disaggregation of its components

Value-added taxes (VAT), or general taxes on the sale of goods and services—and in particular the tax instruments analyzed for this group of countries—generally take the form of taxes levied on the circulation of goods and services at all stages of production and commercialization up to the final stage, while exports of goods and services are typically zero-rated. Although firms that sell goods and services are formally designated as taxpayers, in practice the tax is shifted forward. VAT is an indirect tax whose ultimate incidence falls on the final consumer, or more broadly on any purchaser without the right to input tax credits (final consumers, non-profit institutions, and central government).

Given these characteristics and the set of statistical data available for the countries,[33] we rely on selected items from the Use of Income Account of each country's System of National Accounts as an approximation of the final tax base. The Use

33 The macroeconomic statistics used for estimating potential tax revenue are sourced from countries' Systems of National Accounts, or from statistics available through UNdata—a United Nations database service that provides official data and statistics from various countries. Statistics available from DataBank, a World Bank analysis and visualization tool that contains revenue collections of time series data on a variety of topics, may also be used.

of Income Account shows how households, government units, and non-profit institutions serving households (NPISH) allocate their disposable income between final consumption and saving.[34]

Household final consumption expenditure refers to spending by resident households on consumer goods and services. It includes, among other items, the direct purchase of goods and services and goods and services produced and consumed within the same household.

The Use of Income Account also includes expenditure on individual and collective goods and services by government and NPISH.

As stated in the System of National Accounts (SNA) Manual, the value of actual final consumption of general government is equal to its total final consumption expenditure minus expenditure on individual goods and services provided to households as social transfers in kind. The value of actual final consumption of government units is therefore equal to the value of expenditure incurred in providing collective services or certain individual goods and services. A similar criterion applies to NPISH. The value of actual final consumption of NPISH equals their total final consumption expenditure minus expenditure on individual goods and services provided to households as social transfers in kind.

The approximation to the theoretical tax base constructed in this study is determined by the sum of the three components mentioned above, from which we subtract actual VAT revenue, since the valuation rules of these accounts indicate that expenditure is recorded at the total amount paid or valued, which includes, among other elements, the sales tax or VAT.

Based on this approximation, we estimate theoretical VAT revenue by applying the statutory standard VAT rate to the calculated base. As is well known, VAT is a tax that applies broadly to the circulation of goods and services, with a statutory standard rate and a set of exceptions, including exempt goods and services and goods taxed at reduced rates. The theoretical revenue thus aims to capture the revenue potential of a tax that would apply a single uniform rate to all goods and services, without exceptions.

34 ONU, *op. cit.*

Table 2. Estimation of Potential Collection, Tax Gap and Components. VAT

Ord	Variable	Source
(a)	(+) Household Final Consumption	System of National Accounts of the Country & The World Bank Data (https://data.worldbank.org/indicator/) & UNdata (https://data.un.org/)
(b)	(+) Government consumption and NPISH	System of National Accounts of the Country & The World Bank Data (https://data.worldbank.org/indicator/) & UNdata (https://data.un.org/)
(c)	(-) Effective VAT collection	IDB-CIAT Collection Database (https://www.ciat.org/base-de-datos-de-recaudacion-bid-ciat/) & Collection Reports countries
(d)	(=) Final Consumption excluding VAT	Estimation
(e)	(*) Legal Tax Rate	Tax Rates History – CIAT (https://www.ciat.org/alicuotas-en-america-latina/) & Country Legislation
(f)	{(d)*(e)} (=) Potential VAT Collection	Estimation
(g)	(-) Effective VAT collection	IDB-CIAT Collection Database (https://www.ciat.org/base-de-datos-de-recaudacion-bid-ciat/) & Collection Reports countries.
(h)	{(f) – (g)} (=) VAT Tax Gap	Estimation
(i)	{(g)/(f)} (=) VAT Revenue Collection Efficiency	Estimation
(j)	{1-(i) (=) (h)/(f)} (=) VAT Revenue Collection Inefficiency	Estimation
(k)	(+)VAT Tax Expenditures	Tax Expenditure Data Basedel CIAT (https://www.ciat.org/gastos-tributarios/) & Tax Expenditures Reports countries.
(l)	{(k)/(f)} (=) Inefficiency_gt	Estimation
(m)	{1 – (i) – (l)} (=) Inefficiency_x	Estimation

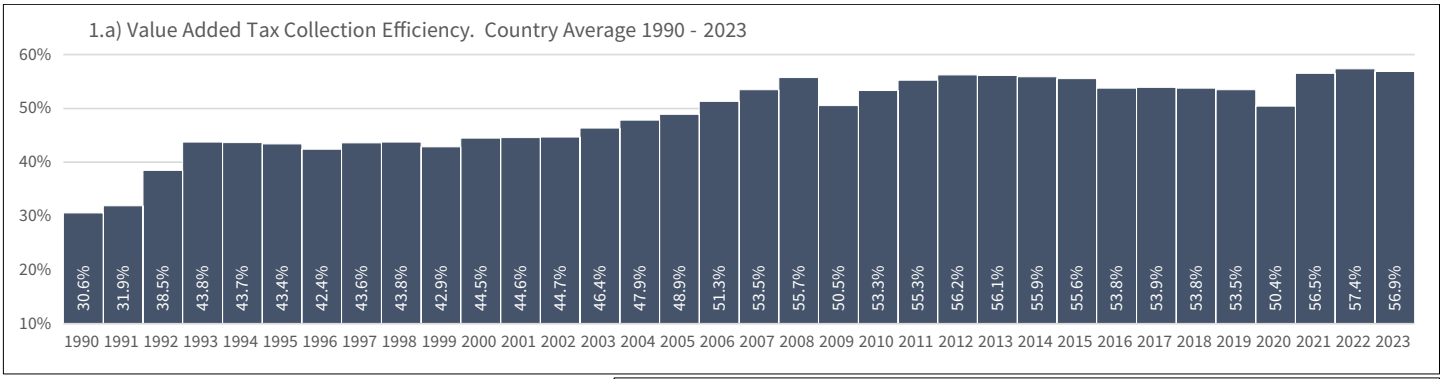
The existing exceptions under this tax are quantified in tax expenditure studies; therefore, a portion of the estimated tax gap can be attributed to the presence of such exceptions.

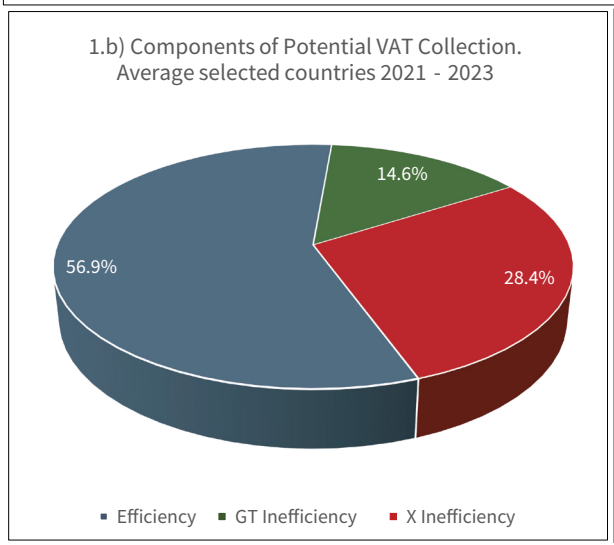
Once theoretical revenue has been obtained, the comparison between actual and theoretical revenue provides a measure of the tax's revenue efficiency. With the available data, it is possible to construct a long time series of revenue efficiency and to infer whether the observed improvement in VAT revenue is attributable solely to nominal increases in statutory rates (as shown in the figure) or also to improvements in revenue efficiency. As noted above, while the calculation of this indicator is independent of the statutory rate level, its underlying determinants are not necessarily so.

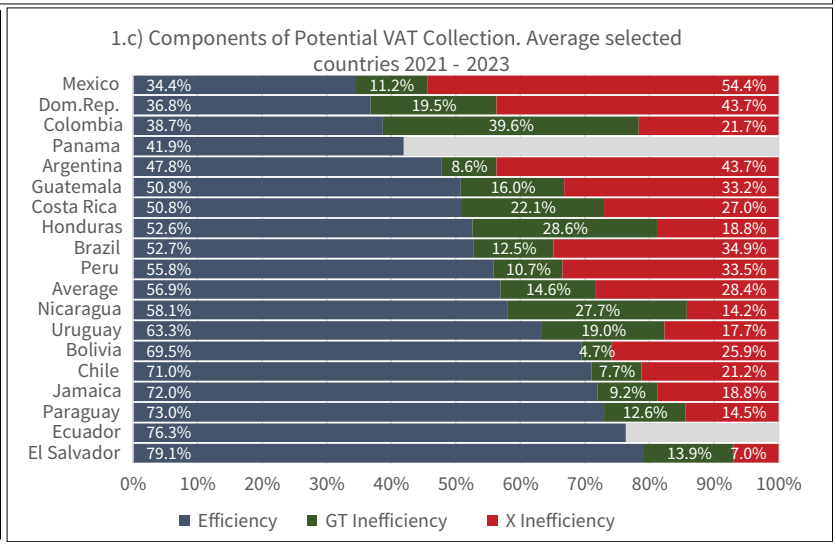
If actual revenue were to reach the same magnitude as theoretical revenue, the tax would be collecting its full potential. This would represent a purely theoretical case in which neither a policy gap (tax expenditures) nor a compliance gap (evasion) would exist. Empirical evidence, however, shows that revenue efficiency is below one, since actual revenue is lower than potential revenue. We define the overall gap as the difference between one and the ratio of actual revenue to theoretical revenue.

Given the estimated gap and the amounts of VAT tax expenditures reported by countries, it is possible to estimate the portion of the economic discrepancy attributable to this factor, corresponding to the so-called policy gap.

Figure 4. VAT Revenue Collection Efficiency 1990 – 2023 (1.a)
Components of Potential Collection 2021 – 2023 (1.b; 1.c)







Finally, based on the residual between unity, revenue efficiency, and the portion of inefficiency attributable to tax expenditures, we estimate the share of inefficiency not attributable to policy, which is partly explained by tax non-compliance. It should be borne in mind that, from the initial stage of estimation—when selecting the variables that best represent the tax base—we are approximating potential revenue. Both revenue efficiency and the difference attributed to non-compliance are therefore estimates, and the final result does not necessarily represent the true VAT evasion rate. Nevertheless, insofar as the macroeconomic variables considered are compiled according to systematically applied accounting criteria and a long time series is available, it is possible to identify trends in the indicator, providing a more robust basis for assessing whether VAT revenue efficiency has increased and how the other components of the tax gap have evolved over time.

First, Figure 1.a presents the average VAT revenue efficiency over the period 1990–2023. This indicator was calculated as the annual average of the revenue efficiency observed in each country. The analysis of a long time series allows us to identify the sustained improvement experienced by this indicator over time. From values below 0.4 at the beginning of the period, the ratio between actual and theoretical VAT revenue increased steadily, reaching a first peak in 2008.

From 2008 onward, the indicator shows an immediate decline, followed by a period of relative stability with a downward bias. It then experienced a new and pronounced drop in 2020, followed immediately by the best three-year period in the entire series (2021–2023). The decline observed in 2020 is consistent with the sharp fall in tax pressure discussed above and analyzed in detail in the Equivalent Fiscal Pressure report.[35] Various mechanisms involving deferrals and tax relief measures introduced by countries in response to the pandemic had a rapid impact on VAT revenue, which, given the nature of its determination, reacts immediately to changes in its parameters.

This result helps explain why VAT plays such a central role in tax revenue and sheds light on the sustained growth of tax pressure over the period analyzed. In addition to the increase in the revenue-generating capacity of the tax—captured in this indicator through rising statutory rates (see Figure 3)—revenue efficiency did not offset this effect but rather reinforced it. Even improvements in revenue efficiency in a context of expanding revenue capacity will translate into higher levels of tax revenue.

Figure 1.b presents a static decomposition of theoretical VAT revenue, calculated as the average composition of theoretical revenue across the countries included in the analysis. The period considered corresponds to the most recent available three-year average. The figure shows that the estimated revenue efficiency is 0.569, while the tax gap is divided into a share of 0.146 attributable to the policy gap and a share of 0.284 attributable to the compliance gap.

Figure 1.c presents a static decomposition of theoretical VAT revenue at the country level.

As discussed in this document, revenue *inefficiency* can be decomposed into two broad components. On the one hand, there is the revenue loss associated with exceptions to the general taxation rule, and on the other, the revenue loss attributable, among other factors, to non-compliance. The former component is estimated using tax expenditure reports, while the latter is derived residually as the difference between the theoretical level of efficiency (1) and the sum of the two previously identified components.

Although the average inefficiency attributable to each factor amounts to 0.146 and 0.284 for tax expenditures and non-compliance, respectively, the data reveal greater dispersion in country-level results for these components than for the efficiency[36] indicator itself. This pattern can be partially explained by differences in the level of tax expenditures across countries, but also by variations in the methodological criteria applied to identify and estimate them. With respect to inefficiency due to non-compliance, since it is a residual estimate, its magnitude depends on the levels of revenue efficiency and tax expenditures.

Appendix IV of this document compares the estimated revenue efficiency with the ratios calculated for OECD countries over the same period.[37] This comparison shows that, from the perspective of this indicator, both groups of countries achieve broadly similar levels of revenue efficiency using the same instrument.

35 Dalmiro Morán and Marco Solera, *op. cit.*

36 The total efficiency range is 0.40; the inefficiency attributable to tax expenditures (TE) is 0.43; and the inefficiency attributable to non-compliance is 0.58.

37 Consumption Tax Trends 2024: VAT/GST and Excise Core, Design, Features and Trends (2024).

Table 3. Components of Potential VAT Collection. Selected countries 2021 – 2023

Country	Efficiency	GT Inefficiency	X Inefficiency
Argentina	0.478	0.086	0.437
Bolivia	0.695	0.047	0.259
Brazil	0.527	0.125	0.349
Chile	0.710	0.077	0.212
Colombia	0.387	0.396	0.217
Costa Rica	0.508	0.221	0.270
Dom. Rep	0.368	0.195	0.437
Ecuador*	0.763		
El Salvador	0.791	0.139	0.070
Guatemala	0.508	0.160	0.332
Honduras	0.526	0.286	0.188
Jamaica	0.720	0.092	0.188
Mexico	0.344	0.112	0.544
Nicaragua	0.581	0.277	0.142
Panama**	0.419		
Paraguay	0.730	0.126	0.145
Peru	0.558	0.107	0.335
Uruguay	0.633	0.190	0.177
Average	**0.569**	**0.146**	**0.284**

Note: In the cases of Panama and Ecuador, given the methodology used to calculate tax expenditures (which would result in a tax-expenditure inefficiency higher than total inefficiency), it is not possible to disaggregate between tax-expenditure inefficiency and X-inefficiency.

Note: The revenue efficiency ratio at the country level ranges between 0.344 and 0.791, with an average of 0.569.

It is important to note that the estimation of the theoretical tax base through the selected combination of macroeconomic variables does not fully capture the actual tax base of the tax, but rather constitutes an approximation. Consequently, the Inefficiency-X component, obtained as a residual after deducting actual revenue and tax expenditures from potential revenue, reflects both discrepancies between the estimated and the true tax base and genuine inefficiency. The latter is, to some extent, attributable to tax non-compliance or evasion. To the extent that the compilation of national accounts relies on systematic and consistent methodologies that are periodically updated, changes in the value of this indicator, or its trend over time, may be interpreted as signals of variations in the level of non-compliance.

4.2. Estimation of the Theoretical CIT Collection, the Collection Gap and disaggregation of its components

Corporate income taxes, business income taxes, or taxes on corporate profits—here generically referred to as Corporate Income Taxes (CIT)—are generally levied by applying a proportional tax rate to firms' economic results (accounting profits). These accounting results are subject to fiscal adjustments, thereby determining the tax base, also referred to in this

context as taxable income. In parallel, simplified regimes often coexist with the standard CIT. Given the greater complexity involved in determining the tax base, which requires comprehensive accounting records, these regimes rely on a limited set of activity variables or tax proxies to determine *taxable profits*.

Given this structure, the nature of the tax base, and the set of statistical data available across countries, we draw on selected items from the Income Generation Account, which reflect the share of value added allocated to capital. The Income Generation Account is a sub-account of the Primary Distribution of Income Account.[38] In this account, value added is distributed among labor (compensation of employees), capital, and government (taxes less subsidies). The portion corresponding to capital is reflected in the balance of this account, known as the operating surplus or mixed income.

The accounting balance of the Income Generation Account—the share of value added allocated to capital—results from deducting compensation of employees and taxes less subsidies on production from gross value added. This balance measures the surplus or deficit generated by production.

This balance is referred to as operating surplus, or mixed income in the case of unincorporated enterprises owned by households, where the owner supplies labor whose remuneration cannot be distinguished from the return obtained as an entrepreneur. Conceptually, the balance of the Income Generation Account differs from the consolidated accounting results of firms, insofar as the former are expressed in national accounts in gross terms, without taking into account the consumption of fixed capital or the compensation for financial services received or provided.

Consumption of fixed capital refers to the decline, during the accounting period, in the current value of the stock of fixed assets owned and used by a producer, resulting from physical deterioration and normal obsolescence. The equivalent concept in accounting terms is depreciation or amortization of fixed assets. Compensation for financial services, in turn, refers to income payable on financial assets or natural resources borrowed or leased by firms, as well as any interest, rents, or similar income receivable from financial assets or natural resources owned by firms.[39]

Most of the statistics available for this estimation report the balances of the Income Generation Account in gross terms. As an approximation to firms' net accounting results, we deduct from this balance an estimate of the consumption of fixed capital. This estimate is linked to the Gross Fixed Capital Formation account in the Use of Income Account. Gross fixed capital formation comprises acquisitions of new and existing fixed assets through purchase, barter, or own-account capital formation, minus disposals of existing assets through sale or barter.[40]

38 UN, *op. cit.*

39 *Ibidem.*

40 *Ibidem.*

Table 4. Estimation of Potential Collection, Tax Gap, and Components. CIT

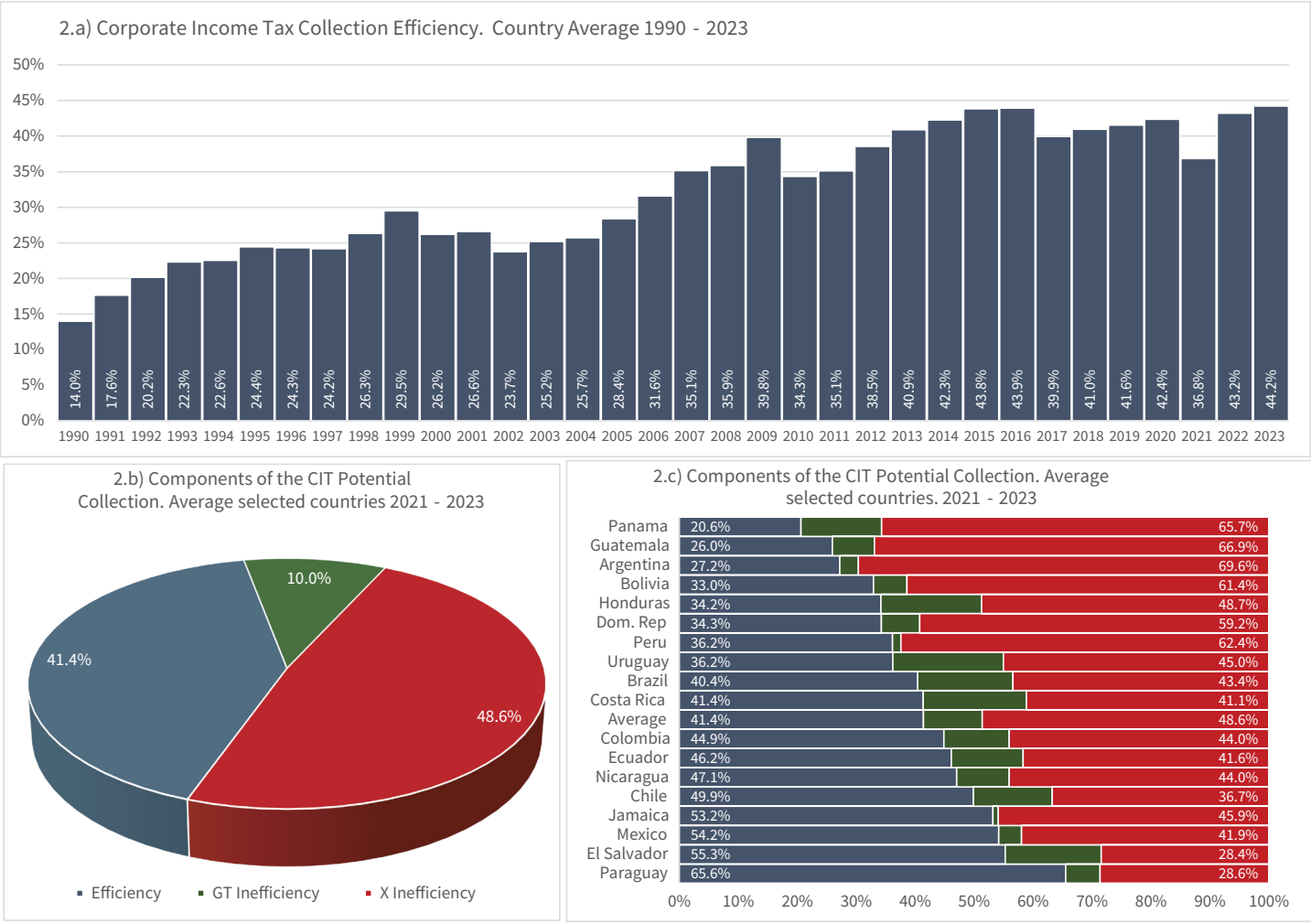
Ord	Variable	Source
(a)	(+) Gross Operating Surplus	System of National Accounts of the Country & The World Bank Data (https://data.worldbank.org/indicator/) & UNdata (https://data.un.org/)
(b)	(+) Gross Mixed Income	System of National Accounts of the Country & The World Bank Data (https://data.worldbank.org/indicator/) & UNdata (https://data.un.org/)
(c)	(-) Consumption of Fixed Capital	System of National Accounts of the Country & The World Bank Data (https://data.worldbank.org/indicator/) & UNdata (https://data.un.org/). Cuenta de Referencia, CKF (t-1)
(d)	(=) Net income of companies	Estimation
(e)	(*) Legal tax rate	Tax Rates History – CIAT (https://www.ciat.org/alicuotas-en-america-latina/) & Country Legislation
(f)	(=) Potential CIT Collection	Estimation
(g)	(-) Effective CIT collection	IDB-CIAT Collection Database (https://www.ciat.org/base-de-datos-de-recaudacion-bid-ciat/) & Collection Reports countries
(h)	(=) CIT Tax Gap	Estimation
(i)	{(g)/(f)} (=) CIT Revenue Collection Efficiency	Estimation
(j)	{1-(i) (=) (h)/(f)} (=) CIT Revenue Collection Inefficiency	Estimation
(k)	(+) CIT Tax Expenditures	Tax Expenditure Data Based – CIAT (https://www.ciat.org/gastos-tributarios/) & Tax Expenditures Reports – Countries.
(l)	{(k)/(f)} (=) Inefficiency_gt CIT	Estimation
(m)	{1 – (i) – (l)} (=) Inefficiency_x CIT	Estimation

The macroeconomic statistics used to estimate theoretical tax revenue are drawn from countries' Systems of National Accounts as well as from international statistical sources. These include UNdata, the United Nations database service that compiles official information reported by countries, and DataBank, the World Bank's platform that provides analytical and visualization tools together with extensive datasets covering a wide range of topics.

The estimation of the theoretical tax base is therefore constructed as the sum of the balances of the Income Generation Account, minus an estimate of the consumption of fixed capital. Potential tax revenue is estimated for each country and each fiscal year by applying the statutory tax rate in force to the tax base thus obtained.

Exceptions within the CIT framework are valued in tax expenditure studies; therefore, part of the observed tax gap can be attributed to the existence of such exceptions. Once theoretical revenue has been estimated, the comparison between actual and theoretical revenue provides a measure of the tax's *revenue efficiency*. With the available information, it is possible to construct a long time series of revenue efficiency and to infer whether the observed improvement in tax revenue is attributable to gains in efficiency.

Figure 5. Revenue Collection Efficiency of CIT 1990 – 2023 (2.a)
Components of Potential Collection 2021 – 2023 (2.b; 2.c)



The previous figure summarizes the results obtained. First, Figure 2.a presents the average revenue efficiency of the CIT over the period 1990–2023. This indicator was calculated as the annual average of the revenue efficiency observed in each country in each year.

The analysis of a long time series allows us to identify an overall improvement in this indicator over time, albeit with fluctuations. From values around 0.2 at the beginning of the period, the ratio between actual and theoretical revenue shows sustained improvement (with the exception of 2000, 2010, and 2021), reaching a peak in 2019 (below 0.5).

The results for the most recent periods are consistent with the tax pressure series presented above, as well as with the detailed analysis included in Equivalent Fiscal Pressure in Latin America.[41] Given the nature of this tax, which is linked to the results of the previous fiscal year, changes introduced in response to the pandemic context (particularly in 2021)

41 Dalmiro Morán and Marco Solera, *op. cit.*

may not have had as immediate an impact as that observed for the VAT. The tax pressure series shows that, although this tax experienced a recovery in 2021 following the decline in 2020, the rebound was weaker than the recovery of total tax pressure or of VAT itself, which explains the divergent trends between the two indicators.

Although the level of this efficiency indicator throughout the series is lower than that of the VAT efficiency indicator (Figure 1.a), the CIT efficiency indicator exhibits a higher growth rate, more than doubling its value from the beginning to the end of the period. The following section analyzes in greater detail the relationship between both indicators.

The evolution of the revenue efficiency of this tax helps explain its increasing contribution to long-term tax pressure (Figure 2).

Figure 2.b presents a static decomposition of theoretical CIT revenue, calculated as the average composition of theoretical revenue across the countries included in the analysis. The period considered corresponds to the most recent available three-year average. The figure shows that the estimated revenue efficiency is 0.414, while the tax gap consists of a share of 0.100 attributable to the policy gap and a share of 0.486 attributable to Inefficiency-X, which includes the compliance gap.

Figure 3.a presents a static decomposition of the estimated theoretical CIT revenue at the country level, corresponding to the average result for the most recent three-year period in the dataset.

Table 5. Components of Potential Collection CIT. Selected countries 2021 – 2023

Country	Efficiency	GT Inefficiency	X Inefficiency
Argentina	0.272	0.032	0.696
Bolivia	0.330	0.057	0.614
Brazil	0.404	0.162	0.434
Chile	0.499	0.134	0.367
Colombia	0.449	0.111	0.440
Costa Rica	0.414	0.175	0.411
Ecuador	0.462	0.122	0.416
El Salvador	0.553	0.163	0.284
Guatemala	0.260	0.071	0.669
Honduras	0.342	0.171	0.487
Jamaica	0.532	0.009	0.459
Mexico	0.542	0.039	0.419
Nicaragua	0.471	0.089	0.440
Panama	0.206	0.137	0.657
Paraguay	0.656	0.058	0.286
Peru	0.362	0.014	0.624
Dominican Republic	0.343	0.065	0.592
Uruguay	0.362	0.188	0.450
Overall Total	**0.414**	**0.100**	**0.486**

The country-level revenue collection efficiency ratio ranges between 0.206 and 0.656, with a mean value of 0.41. As discussed in this document, revenue *inefficiency* can be decomposed into two broad components: first, forgone revenue resulting from exceptions to the general taxation rule; and second, forgone revenue attributable, among other factors, to noncompliance. The first component is estimated using tax expenditure reports, while the second is derived as the residual between the theoretical level of efficiency (equal to 1) and the sum of the two previously identified components.

Although the average inefficiency attributable to additional factors amounts to 0.100 and 0.414 for tax expenditures and noncompliance, respectively, the data reveal greater cross-country dispersion in these components than in the efficiency[42] indicator itself. This variation is partly explained by differences in the magnitude of tax expenditures across countries, but also by methodological heterogeneity in the criteria used to identify and estimate them. With respect to inefficiency due to noncompliance, because it is estimated as a residual, its magnitude depends on the levels of revenue efficiency and tax expenditures previously estimated.

It should be emphasized that the estimation of the theoretical tax base through a combination of selected macroeconomic variables does not fully capture the actual tax base, but rather constitutes an approximation. Consequently, the residual inefficiency_x—obtained after deducting actual revenue and tax expenditures from potential revenue—includes both a discrepancy component between the estimated and the true tax base and a component of effective inefficiency, the latter being attributable, to some extent, to tax noncompliance or evasion.

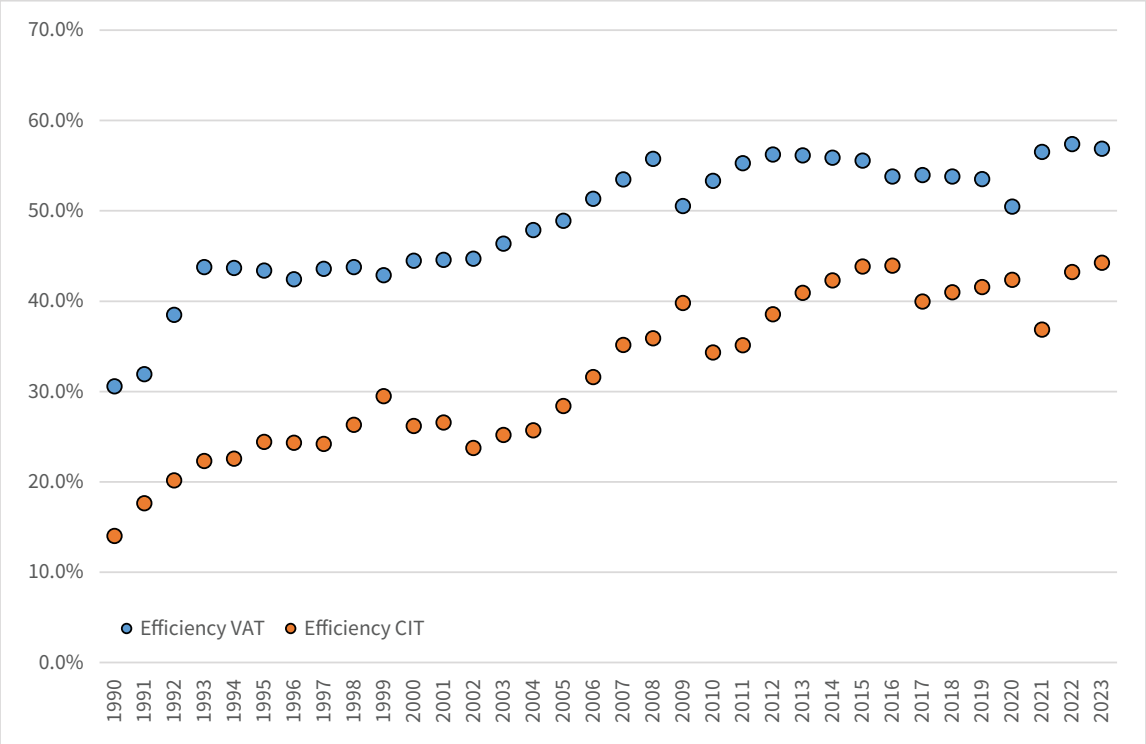
At the same time, corporate income tax (CIT) systems typically incorporate certain fiscal adjustments that generate differences between accounting and tax results for a given fiscal year, which are not necessarily reflected in tax expenditure estimates. Some actual expenses are not deductible for tax purposes, while certain legal deductions—such as the carryforward of losses from previous fiscal years—are not classified as tax expenditures. To the extent that National Accounts are developed and updated using a systematic and consistent methodology, changes in the value of the indicator or in its trend over time may be interpreted as signals of variations in the level of noncompliance.

42 The coefficient of variation (CV = standard deviation / mean) is 0.25 for the efficiency ratio; 0.61 for the inefficiency attributable to tax expenditures; and 0.32 for the residual inefficiency attributable to non-compliance.

5. Revenue Collection Efficiency and Tax Burden

A comparison of VAT and CIT revenue efficiency over the period under analysis reveals evidence of parallel trends in both series. Beyond the harmonization and coordination of the National Accounts—which constitute the basis for estimating theoretical revenue—the efficiency of each tax was estimated independently and using different sets of variables. Therefore, the similarity in the evolution of the series can be attributed to the endogeneity of the tax bases of both taxes. For instance, improvements in income reporting, as well as reductions in income underreporting, translate into higher revenue efficiency for both VAT and CIT.

Figure 6. VAT & CIT revenue collection efficiency 1990 – 2023



Throughout the period considered, VAT revenue efficiency remains higher than that of CIT, although the gap narrows toward the end of the series, with the exception of the final observation, in which the VAT indicator increases while the CIT indicator declines.

As noted at the outset of this study, a common factor underlying both indicators is related to the tax base, or more precisely, to the manner in which it is determined. Both taxes partially share the same tax base. While the VAT tax base is determined as the difference between inputs and outputs subject to the tax, subject to specific determination rules, the CIT tax base is determined as the difference between inputs and total outputs, also subject to specific rules.

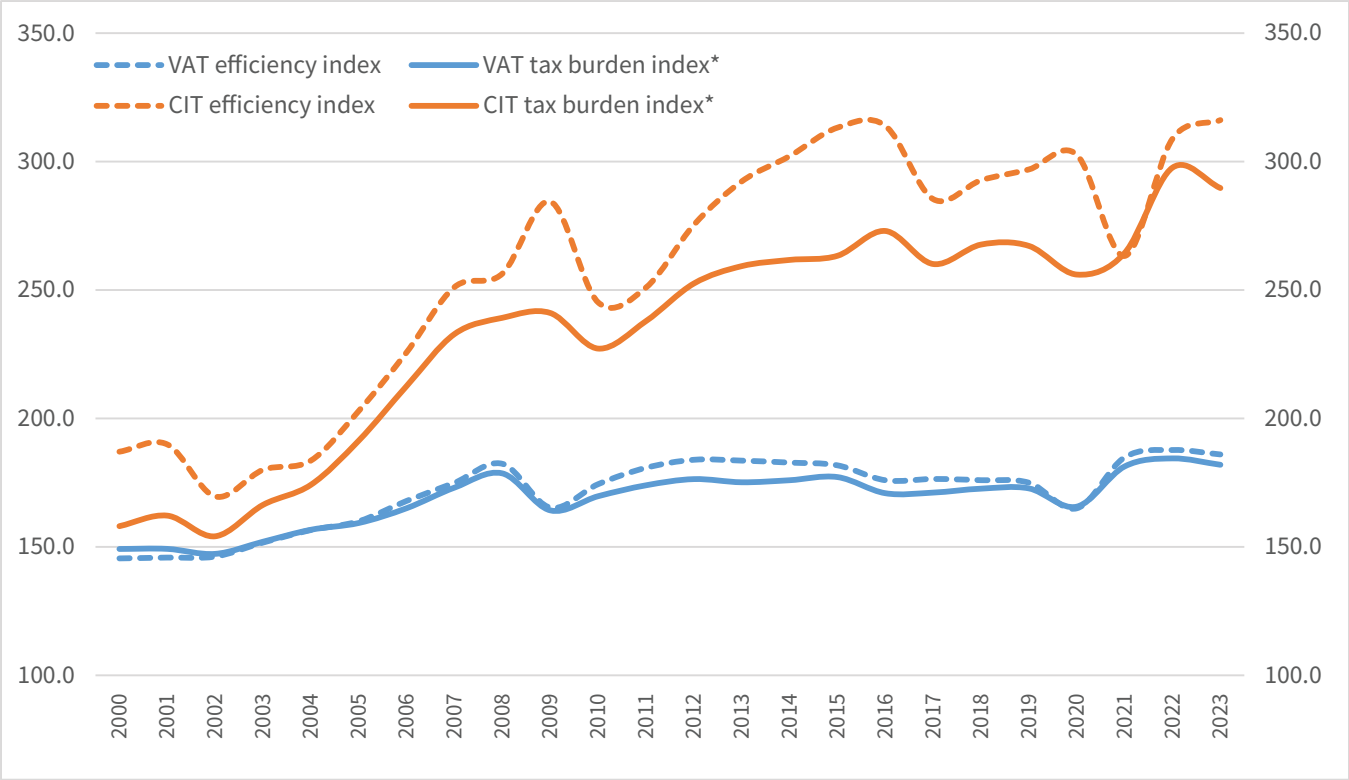
This strong linkage in the structure and calculation of the tax base for both taxes implies that changes in inputs or outputs generate simultaneous effects on both tax bases. For example, a decline in invoicing in a given fiscal year reduces the tax base of both VAT and CIT. Similarly, an increase in invoicing, even when accompanied by an increase in outputs, is likely to raise the nominal tax base of both taxes, thereby increasing revenue.

The VAT tax base is larger, relative to income or turnover, than the CIT tax base; consequently, the latter is more sensitive to changes in invoicing, such as those associated with under- or over-invoicing. Indeed, although efficiency levels converge toward the end of the series (with the exception of the final observation), the inefficiency_x component of CIT exceeds that of VAT (Subfigures 1(a) and 2(a)).

As shown earlier, the tax burden in the countries included in this analysis has increased over the period considered. At the same time, the evolution of revenue from the taxes under study explains, to a significant extent, the performance of this aggregate indicator. Furthermore, tax reforms implemented in these countries resulted in an increase in the standard VAT rate, whereas in the case of CIT, changes tended toward a convergence of statutory rates, which led to a reduction in the average statutory tax rate across countries.

To assess the contribution of revenue efficiency to the evolution of the tax burden of each tax, we constructed index series with base year 1990 = 100 for both efficiency indicators and tax burden indicators.

Figure 7. VAT and CIT revenue collection efficiency index & Tax burden index 2000 – 2023 (base 1990 = 100)[43]



43 In Appendix VI, the specific values for each of the series of indices shown in the chart can be found.

The figure above allows for pairwise comparison of variables. First, it shows the VAT efficiency index (dotted blue line) and the VAT tax burden index (solid blue line). At the same time, it presents the CIT efficiency index (dotted orange line) and the CIT tax burden index (solid orange line).

It is reasonable to expect each pair of indices to follow broadly similar[44] trajectories; however, the relative position of each indicator within the pairs is revealing.

While the VAT tax burden index and the VAT efficiency index exhibit an almost overlapping trajectory, the differences are more pronounced in the case of the CIT. For this tax, revenue efficiency outperformed the evolution of the tax burden (except in a few specific years). This pattern can be partly attributed to the tax reforms implemented over the period, particularly with respect to statutory tax rates. In the case of the VAT, rate changes tended to strengthen its revenue-raising capacity, while efficiency remained relatively stable. By contrast, in the CIT, where rate reductions predominated, the tax exhibited improvements in revenue efficiency, likely generating additional revenue gains beyond those that would have been observed had efficiency remained at pre-reform levels.

44 As the tax burden is defined as effective collection over GDP, and the collection efficiency as the ratio of effective collection over theoretical collection, both indicators share the same numerator.

6. Final Considerations and Study Limitations

In the previous sections, we presented the results of an approximation to the measurement of the tax gap in VAT and CIT across countries in the region, based on estimates of the theoretical revenue of each tax and of revenue collection efficiency. These estimates were constructed using information from national accounts systems; national accounts statistics produced by international organizations; tax revenue series; key tax parameters; and the results of available tax expenditure studies.

The results indicate that revenue collection efficiency for both taxes increased over the period under analysis, driven primarily by reductions in tax noncompliance. Although CIT efficiency remains lower than VAT efficiency, the reduction of the gap was more pronounced for the former than for the latter. In the case of the VAT, the gap remained broadly stable in the most recent period.

Nevertheless, significant room for improvement persists, with inefficiency levels estimated at 0.431 for the VAT and 0.586 for the CIT. As noted earlier, in the case of the CIT there are exemptions and deviations in the tax base that move it away from the actual base (corporate profits) and are not classified as tax expenditures, which affects the estimation of the compliance gap.

We highlight below some of the limitations of this approach to measuring the tax gap:

This methodology is subject to several limitations that must be considered when interpreting the results. First, as an indirect method, the estimation of the tax gap relies on an approximation of each tax base constructed from the set of available macroeconomic statistics deemed most appropriate.

However, these statistics do not always accurately or comprehensively reflect the effective tax base defined by tax legislation, which may introduce discrepancies between the estimated magnitude and the underlying fiscal reality.

Regarding data sources, part of the statistical information was obtained directly from reports and presentations prepared by the countries themselves. In other cases, databases maintained by international organizations that compile and disseminate official information were used. For observations with missing data, linear interpolation procedures were applied, preserving the historical technical relationships observed in the series.

In addition, macroeconomic statistics are reported on an accrual basis, whereas tax revenue series display timing lags relative to accrual recording. These lags may vary depending on the tax considered, such as the VAT or the CIT. This misalignment can generate delays in the evolution of the estimated index, a phenomenon that is particularly evident in fiscal years 2020 and 2021, when many countries implemented mitigating tax measures—such as temporary exemptions and tax deferrals—in response to the crisis triggered by the COVID-19 pandemic.

Finally, the availability of long time series on tax expenditures is limited, particularly for earlier years covered by the estimation. In the absence of complete information, linear interpolation was again applied while preserving historical technical relationships. Consequently, the analysis of revenue efficiency is restricted to the group of countries that maintain recorded tax expenditure data. Additional estimates are progressively incorporated as countries publish new information, with the aim of expanding the temporal coverage of the series.

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Appendix I. Sources of information for each country

Argentina	Sources of information
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Collection Series	Agencia de Recaudación y Control Aduanero: https://www.afip.gob.ar/institucional/estudios/serie%2Danual/
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
Tax Expenditures Reports	Dirección Nacional de Investigaciones y Análisis Fiscal
National Accounts Series	INDEC, Dirección Nacional de Cuentas Nacionales.
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Bolivia	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Estadísticas Económicas – Instituto Nacional de Estadística.
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Brazil	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	https://www.confaz.fazenda.gov.br/boletim-de-arrecadacao-dos-tributos-estaduais.
Collection Series	https://receita.economia.gov.br/dados/receitadata/arrecadacao/relatorios-do-resultado-da-arrecadacao
Collection Series	Global Revenue Statistics Database – OCDE
Collection Series	https://www.gov.br/receitafederal/pt-br/acesso-a-informacao/dados-abertos/receitadata/arrecadacao/serie-historica/arrecadacao-das-receitas-federais-1994-a-2023.xlsx/view
Collection Series	https://dados.gov.br/dados/conjuntos-dados/boletim-de-arrecadacao-dos-tributos-estaduais
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023

National Accounts Series	Instituto Brasileiro de Geografia e Estatística. https://sidra.ibge.gov.br/tabela/2072#/n1/all/v/all/p/all/l/,v,t+p/resultado
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Chile	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central Chile – Cuentas Nacionales de Chile 2013–2020
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	Banco Central Chile – Cuentas Nacionales de Chile 2018–2021
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Colombia	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
Tax Expenditures Reports	DIAN. Coordinación de Estudios Económicos – Gasto Tributario en el IVA e Impuesto sobre la Renta 2017 – 2018.
National Accounts Series	DANE – Departamento Administrativo Nacional de Estadística
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Costa Rica	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central de Costa Rica – Cuentas Nacionales Base 2017

National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Ecuador	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central del Ecuador – Cuentas Nacionales
National Accounts Series	UN/ DATA + DATABANK
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	Instituto Nacional de Estadística y Censos
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
El Salvador	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central de Reserva – Sistema de Cuentas Nacionales
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Guatemala	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco de Guatemala – Cuentas Nacionales
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America

Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Honduras	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	Informe de Gasto Tributario – Secretaría de Finanzas
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Departamento de Estadísticas Macroeconómicas, BCH
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Jamaica	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Statistical Institute of Jamaica
National Accounts Series	World Economic Outlook database: April 2025. IMF
Tax rate series	CIAT – DATA. Tax Rates in Latin America
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Mexico	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Collection Series	http://omawww.sat.gob.mx/cifras_sat/Paginas/DatosAbiertos/recaudacion.html
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Instituto Nacional de Estadística y Geografía **** Incomplete data; quarterly only.
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited

Nicaragua	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central de Nicaragua – Series de CCNN 2006
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Panama	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
Tax Expenditures Reports	Estimación del Gasto Tributario del ITBMS de la República de Panamá. Marvín Cardoza
Tax Expenditures Reports	Estimación del Gasto Tributario del ISR de la República de Panamá. Marvín Cardoza
National Accounts Series	Instituto Nacional de Estadística y Censo Panamá – Princip serie 1996–2006 – SCN Panamá
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Paraguay	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central del Paraguay – Sistema_de_Cuentas_Nacionales_Paraguay_Serie_2008_2018
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited

Peru	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Instituto Nacional de Estadística e Informática – Cuentas Nacionales
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Dominican Republic	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central República Dominicana
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited
Uruguay	
Collection Series	Equivalent Fiscal Pressure (EFP) in Latin America and the Caribbean – 1990–2021 – IDB/CIAT
Collection Series	Global Revenue Statistics Database – OCDE
Collection Series	Informes anuales de recaudación de la Dirección General Impositiva
Collection Series	https://www.gub.uy/direccion-general-impositiva/datos-y-estadisticas/estadisticas/recaudacion-anual-mensual-impuesto
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2018
Tax Expenditures Series	TEDLAC – Tax Expenditure Database CIAT 2023
National Accounts Series	Banco Central del Uruguay & Instituto Nacional de Estadística
National Accounts Series	World Economic Outlook database: April 2025. IMF
National Accounts Series	UN/ DATA + DATABANK
Tax rate series	CIAT – DATA. Tax Rates in Latin America
Tax rate series	Statutory Corporate Income Tax Rates Database – OCDE
Tax rate series	Worldwide Corporate Tax Guide – 2022 EY – EYGM Limited
Tax rate series	Worldwide VAT, GST and Sales Tax Guide – 2023 EY – EYGM Limited

Appendix II. VAT efficiency series 1990 – 2023 by country. CIAT

Country	ARG	BOL	BRA	CHI	COL	CRI	ECU	ELS	GUA	HON	JAM	MEX	NIC	PAN	PAR	PER	RDO	URU	AVERAGE
1990	0.22	0.29	0.56	0.54	0.33	0.54	0.27	sd	0.35	0.33	0.06	0.29	sd	0.35	sd	0.15	0.25	0.36	0.31
1991	0.26	0.31	0.45	0.60	0.31	0.48	0.28	sd	0.34	0.33	0.17	0.40	0.28	0.36	sd	0.24	0.23	0.37	0.32
1992	0.40	0.34	0.46	0.65	0.36	0.42	0.29	1.00	0.42	0.33	0.31	0.31	0.30	0.43	sd	0.27	0.24	0.40	0.38
1993	0.48	0.41	0.42	0.70	0.31	0.42	0.33	0.42	0.44	0.35	0.57	0.27	0.33	0.45	0.92	0.36	0.29	0.40	0.44
1994	0.48	0.49	0.51	0.68	0.38	0.46	0.34	0.46	0.41	0.35	0.52	0.29	0.33	0.47	0.54	0.45	0.29	0.40	0.44
1995	0.45	0.50	0.51	0.65	0.37	0.50	0.35	0.53	0.46	0.40	0.57	0.22	0.22	0.27	0.64	0.47	0.29	0.41	0.43
1996	0.44	0.49	0.50	0.70	0.37	0.57	0.35	0.49	0.41	0.43	0.49	0.22	0.24	0.18	0.57	0.46	0.30	0.42	0.42
1997	0.45	0.55	0.48	0.68	0.37	0.42	0.37	0.51	0.42	0.49	0.48	0.24	0.30	0.18	0.61	0.50	0.35	0.44	0.44
1998	0.44	0.58	0.47	0.67	0.34	0.49	0.41	0.53	0.42	0.43	0.47	0.23	0.38	0.17	0.62	0.43	0.37	0.44	0.44
1999	0.42	0.51	0.48	0.65	0.33	0.48	0.36	0.51	0.47	0.48	0.45	0.25	0.40	0.17	0.54	0.40	0.40	0.43	0.43
2000	0.41	0.51	0.50	0.67	0.38	0.49	0.58	0.51	0.49	0.51	0.42	0.26	0.39	0.16	0.53	0.39	0.40	0.42	0.44
2001	0.36	0.55	0.52	0.65	0.39	0.52	0.73	0.54	0.48	0.45	0.40	0.26	0.37	0.15	0.50	0.35	0.36	0.43	0.45
2002	0.38	0.58	0.52	0.67	0.38	0.50	0.72	0.54	0.49	0.46	0.44	0.26	0.39	0.14	0.49	0.38	0.38	0.36	0.45
2003	0.43	0.60	0.52	0.67	0.41	0.47	0.65	0.56	0.49	0.50	0.50	0.28	0.42	0.20	0.54	0.40	0.32	0.39	0.46
2004	0.48	0.64	0.55	0.67	0.42	0.49	0.62	0.55	0.51	0.51	0.50	0.29	0.44	0.22	0.55	0.42	0.33	0.44	0.48
2005	0.47	0.70	0.55	0.67	0.42	0.50	0.63	0.62	0.47	0.51	0.46	0.29	0.47	0.24	0.57	0.45	0.31	0.48	0.49
2006	0.49	0.75	0.54	0.64	0.47	0.54	0.62	0.67	0.50	0.54	0.51	0.32	0.44	0.27	0.58	0.50	0.35	0.51	0.51
2007	0.52	0.80	0.53	0.68	0.45	0.58	0.65	0.64	0.54	0.57	0.50	0.32	0.45	0.28	0.58	0.52	0.38	0.64	0.53
2008	0.52	0.88	0.56	0.71	0.48	0.57	0.62	0.63	0.50	0.58	0.43	0.31	0.43	0.63	0.59	0.58	0.35	0.67	0.56
2009	0.49	0.77	0.51	0.60	0.43	0.47	0.62	0.56	0.45	0.47	0.43	0.28	0.41	0.62	0.55	0.50	0.31	0.63	0.51
2010	0.48	0.83	0.53	0.63	0.45	0.46	0.63	0.63	0.47	0.49	0.45	0.29	0.44	0.64	0.68	0.56	0.32	0.62	0.53
2011	0.48	0.99	0.52	0.64	0.49	0.46	0.64	0.62	0.48	0.54	0.43	0.28	0.48	0.67	0.71	0.59	0.31	0.61	0.55
2012	0.47	1.04	0.51	0.65	0.47	0.46	0.76	0.64	0.49	0.52	0.46	0.28	0.51	0.69	0.67	0.58	0.30	0.63	0.56
2013	0.48	1.06	0.51	0.64	0.41	0.45	0.79	0.63	0.48	0.49	0.57	0.26	0.51	0.66	0.68	0.57	0.30	0.61	0.56
2014	0.47	1.01	0.49	0.64	0.43	0.44	0.78	0.62	0.47	0.50	0.51	0.29	0.53	0.63	0.74	0.58	0.32	0.61	0.56

Country	ARG	BOL	BRA	CHI	COL	CRI	ECU	ELS	GUA	HON	JAM	MEX	NIC	PAN	PAR	PER	RDO	URU	AVERAGE
2015	0.46	0.91	0.48	0.64	0.42	0.44	0.78	0.62	0.45	0.55	0.57	0.30	0.52	0.60	0.74	0.55	0.37	0.60	0.56
2016	0.45	0.84	0.47	0.63	0.39	0.44	0.63	0.62	0.45	0.59	0.60	0.31	0.53	0.62	0.75	0.47	0.33	0.57	0.54
2017	0.46	0.78	0.48	0.64	0.37	0.42	0.71	0.64	0.46	0.58	0.65	0.30	0.55	0.59	0.74	0.46	0.33	0.57	0.54
2018	0.47	0.75	0.49	0.66	0.38	0.41	0.71	0.66	0.46	0.55	0.66	0.32	0.46	0.54	0.73	0.53	0.34	0.55	0.54
2019	0.46	0.70	0.49	0.64	0.39	0.43	0.69	0.67	0.46	0.53	0.78	0.31	0.49	0.49	0.69	0.50	0.35	0.55	0.53
2020	0.45	0.55	0.50	0.63	0.34	0.45	0.62	0.68	0.44	0.46	0.74	0.35	0.48	0.35	0.69	0.45	0.31	0.58	0.50
2021	0.47	0.67	0.56	0.75	0.37	0.52	0.71	0.80	0.50	0.52	0.69	0.35	0.56	0.38	0.73	0.59	0.36	0.63	0.57
2022	0.46	0.71	0.51	0.71	0.40	0.50	0.80	0.79	0.52	0.52	0.74	0.33	0.58	0.45	0.72	0.58	0.37	0.65	0.57
2023	0.50	0.71	0.51	0.67	0.39	0.50	0.78	0.78	0.50	0.54	0.72	0.35	0.60	0.43	0.75	0.51	0.37	0.62	0.57

Appendix III. CIT efficiency series 1990 – 2023 by country. CIAT

Country	ARG	BOL	BRA	CHI	COL	CRI	ECU	ELS	GUA	HON	JAM	MEX	NIC	PAN	PAR	PER	RDO	URU	AVERAGE
1990	0.12	sd	sd	0.39	0.16	0.16	0.07	0.10	0.07	0.12	0.50	0.15	sd	0.05	0.05	0.03	0.08	0.05	0.14
1991	0.17	sd	sd	0.58	0.31	0.16	0.13	0.18	0.12	0.14	0.33	0.21	sd	0.07	0.05	0.05	0.10	0.06	0.18
1992	0.22	sd	sd	0.57	0.33	0.17	0.13	0.21	0.10	0.17	0.38	0.24	sd	0.10	0.07	0.09	0.17	0.09	0.20
1993	0.39	sd	sd	0.54	0.33	0.23	0.13	0.25	0.15	0.16	0.34	0.23	sd	0.11	0.07	0.09	0.19	0.11	0.22
1994	0.33	sd	0.21	0.58	0.29	0.29	0.11	0.30	0.08	0.16	0.36	0.23	sd	0.14	0.11	0.12	0.19	0.11	0.23
1995	0.33	sd	0.22	0.61	0.28	0.26	0.16	0.42	0.10	0.22	0.34	0.17	sd	0.17	0.12	0.16	0.22	0.12	0.24
1996	0.23	sd	0.30	0.64	0.27	0.26	0.16	0.40	0.10	0.21	0.33	0.16	sd	0.11	0.12	0.25	0.22	0.14	0.24
1997	0.25	sd	0.24	0.67	0.29	0.23	0.16	0.40	0.08	0.19	0.30	0.18	sd	0.19	0.11	0.23	0.22	0.13	0.24
1998	0.30	sd	0.25	0.75	0.29	0.27	0.21	0.41	0.16	0.24	0.30	0.19	sd	0.11	0.10	0.23	0.23	0.16	0.26
1999	0.42	sd	0.26	0.78	0.29	0.42	0.12	0.43	0.20	0.25	0.44	0.20	sd	0.19	0.10	0.16	0.26	0.17	0.29
2000	0.37	0.19	0.19	0.74	0.23	0.37	0.21	0.45	0.22	0.19	0.49	0.21	0.10	0.16	0.11	0.14	0.17	0.17	0.26
2001	0.38	0.22	0.18	0.68	0.31	0.41	0.27	0.42	0.18	0.24	0.38	0.23	0.10	0.13	0.09	0.15	0.26	0.15	0.27
2002	0.16	0.19	0.31	0.60	0.29	0.41	0.29	0.17	0.23	0.23	0.36	0.24	0.13	0.09	0.09	0.15	0.22	0.12	0.24
2003	0.25	0.19	0.25	0.60	0.26	0.41	0.30	0.21	0.23	0.23	0.50	0.25	0.18	0.09	0.08	0.20	0.21	0.10	0.25
2004	0.38	0.20	0.25	0.59	0.30	0.37	0.32	0.20	0.16	0.23	0.47	0.23	0.17	0.12	0.11	0.20	0.17	0.15	0.26
2005	0.45	0.27	0.32	0.59	0.29	0.37	0.37	0.26	0.15	0.26	0.39	0.27	0.19	0.13	0.16	0.24	0.20	0.22	0.28
2006	0.49	0.31	0.32	0.59	0.32	0.31	0.40	0.29	0.16	0.30	0.46	0.28	0.19	0.18	0.30	0.37	0.19	0.24	0.32
2007	0.53	0.32	0.36	0.59	0.38	0.34	0.43	0.37	0.18	0.34	0.52	0.32	0.20	0.22	0.32	0.44	0.28	0.19	0.35
2008	0.39	0.37	0.41	0.60	0.35	0.46	0.42	0.31	0.18	0.37	0.52	0.34	0.20	0.25	0.30	0.43	0.27	0.29	0.36
2009	0.39	0.56	0.43	0.67	0.42	0.43	0.50	0.35	0.16	0.36	0.55	0.36	0.23	0.34	0.46	0.37	0.27	0.30	0.40
2010	0.34	0.43	0.35	0.63	0.33	0.36	0.50	0.22	0.15	0.29	0.52	0.31	0.23	0.35	0.34	0.35	0.18	0.30	0.34
2011	0.35	0.44	0.40	0.53	0.35	0.36	0.49	0.25	0.17	0.33	0.43	0.31	0.27	0.30	0.44	0.43	0.19	0.27	0.35
2012	0.36	0.52	0.40	0.56	0.48	0.33	0.53	0.26	0.17	0.31	0.43	0.31	0.28	0.46	0.53	0.48	0.26	0.26	0.39
2013	0.33	0.60	0.40	0.62	0.47	0.38	0.63	0.33	0.21	0.35	0.40	0.38	0.30	0.51	0.43	0.44	0.27	0.32	0.41

Country	ARG	BOL	BRA	CHI	COL	CRI	ECU	ELS	GUA	HON	JAM	MEX	NIC	PAN	PAR	PER	RDO	URU	AVERAGE
2014	0.32	0.67	0.38	0.69	0.63	0.35	0.67	0.33	0.23	0.35	0.35	0.38	0.32	0.47	0.46	0.49	0.27	0.27	0.42
2015	0.33	0.76	0.36	0.63	0.69	0.39	0.87	0.29	0.21	0.36	0.40	0.45	0.32	0.46	0.49	0.35	0.23	0.29	0.44
2016	0.41	0.62	0.38	0.56	0.63	0.40	0.69	0.34	0.26	0.40	0.44	0.49	0.34	0.51	0.49	0.36	0.25	0.33	0.44
2017	0.36	0.49	0.28	0.53	0.46	0.39	0.57	0.38	0.24	0.39	0.46	0.49	0.35	0.40	0.49	0.29	0.26	0.35	0.40
2018	0.36	0.49	0.30	0.53	0.47	0.41	0.64	0.39	0.23	0.41	0.50	0.48	0.35	0.41	0.50	0.30	0.26	0.35	0.41
2019	0.29	0.52	0.33	0.54	0.45	0.39	0.55	0.41	0.22	0.36	0.53	0.48	0.41	0.44	0.61	0.32	0.28	0.33	0.42
2020	0.35	0.39	0.32	0.57	0.52	0.37	0.65	0.50	0.21	0.22	0.55	0.56	0.39	0.49	0.59	0.30	0.30	0.35	0.42
2021	0.27	0.29	0.35	0.50	0.41	0.39	0.42	0.43	0.24	0.26	0.50	0.49	0.44	0.14	0.56	0.31	0.33	0.31	0.37
2022	0.31	0.38	0.46	0.50	0.36	0.41	0.46	0.61	0.27	0.40	0.52	0.54	0.49	0.22	0.72	0.43	0.32	0.38	0.43
2023	0.24	0.32	0.41	0.50	0.58	0.44	0.50	0.61	0.27	0.37	0.58	0.60	0.49	0.26	0.69	0.34	0.39	0.39	0.44

Appendix IV. C- Efficiency VAT Latin America and Caribbean VRR OECD Countries

OCDE (2024),[45] in the 2024 update of its publication on consumption tax trends, recalculates and updates the VAT Revenue Ratio (VRR) for the group of countries included in its analysis. According to this publication, the objective of the VRR is to provide comparative measures of countries' capacity to effectively secure the potential VAT tax base.

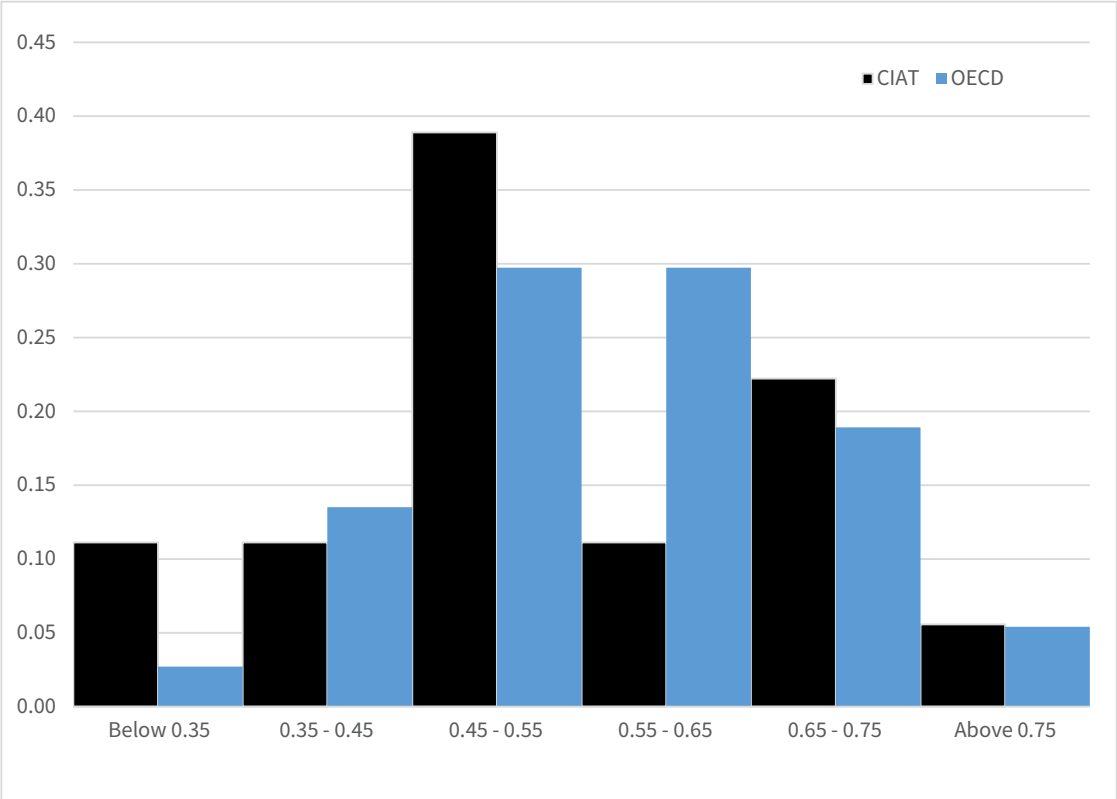
As discussed in previous sections, the VRR and the Efficiency_C indicator are directly comparable, insofar as they are based on the same set of statistical sources, which occupy equivalent positions in the computation of the ratio.

The recent OECD publication estimates the VRR for a set of 37 member countries over the period 2005–2022. Our indicator, by contrast, was calculated for the period 1990–2023, which fully encompasses the time span considered in the reference study, for a sample of 18 countries. The OECD publication and the selected Latin American and Caribbean countries in our sample share several countries in common—Chile, Mexico, Colombia, and Costa Rica. For these countries, the estimates are consistent across both studies.[46]

45 Consumption Tax Trends 2024: VAT/GST ANDEXCISE, CORE DESIGN FEATURES AND TRENDS. 2024.

46 Except for the case of Costa Rica, where VRR is calculated only for the 2019–2022 period. This country introduced VAT as such in 2019; however, until then, the General Sales Tax was in force. Although it had a more limited scope, it could be considered equivalent for the purposes of the VRR estimation. For the purposes of this comparative analysis, the missing VRR values for Costa Rica are substituted with the C-Efficiency values calculated by the CIAT.

Figure 8. Relative Frequency Distribution Histograms. $OECD_{VRR}$ & $LAC\_C_{EF\_C}$ Average 2020 – 2022.



Clear similarities can be observed in the distribution of results for both indicators. The previous figure presents the average values of the country-level index for the most recent available three-year period in each study (2020–2022), that is, the latest results. In none of the 54 countries analyzed (37 OECD countries, 18 Latin American and Caribbean countries, with 4 countries in common) does Efficiency_C (or the VRR) fall below 0.3. In fact, the lowest value corresponds to the same country in both studies.

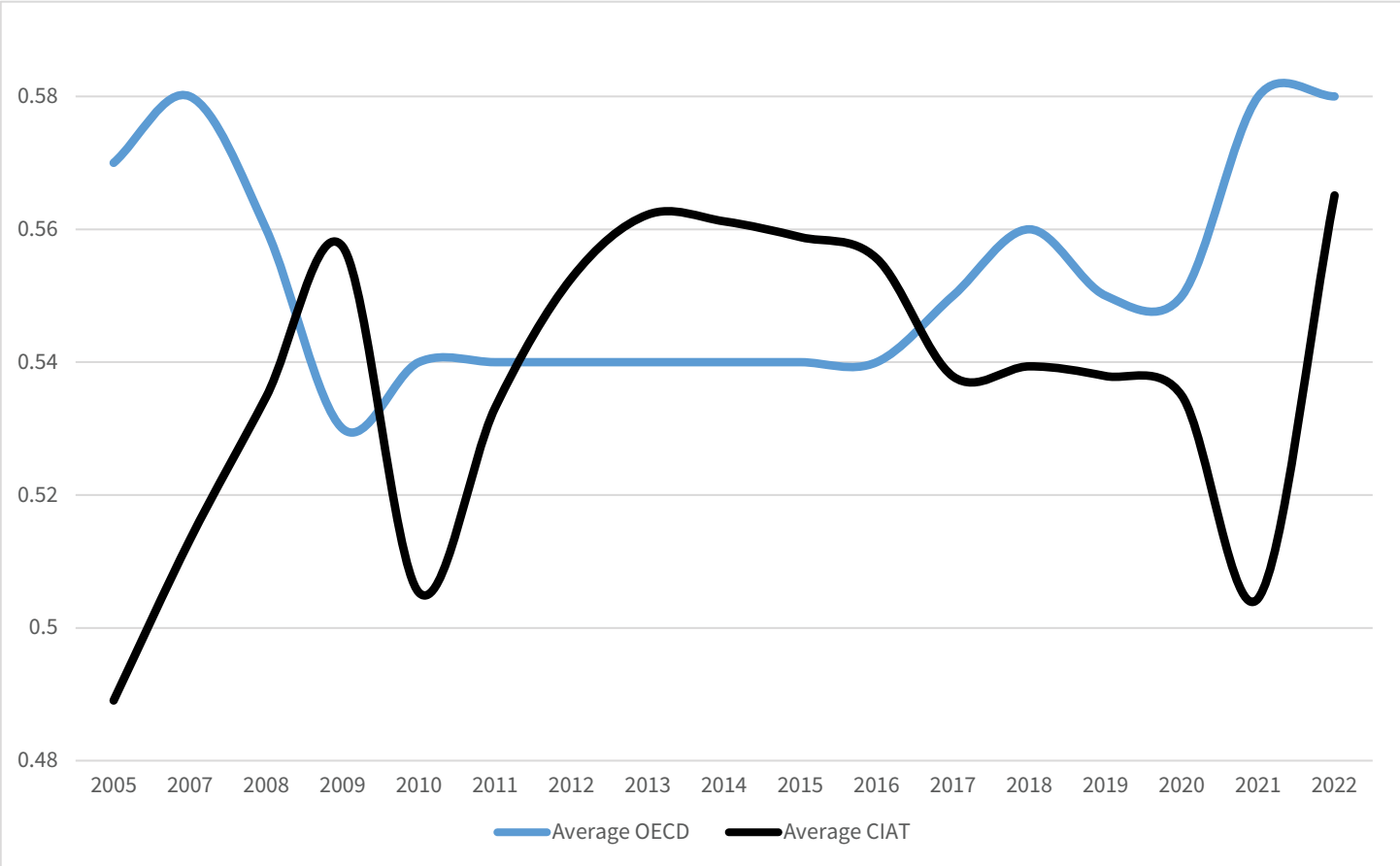
On the right-hand side of the distribution, both datasets show a low frequency of countries with ratios above 0.75. In particular, two OECD observations exceed 0.8, one of which lies in the 0.9–1.0 range. By contrast, the highest values of Efficiency_C in Latin America and the Caribbean are located in the 0.76 range.

We also observe that the OECD distribution exhibits a mode in the two adjacent intervals 0.45–0.55 and 0.55–0.65, whereas the mode for Latin America and the Caribbean is concentrated in the 0.45-0.[47] Interval.

From the perspective of this indicator, both groups of countries appear to be achieving broadly comparable levels of VAT collection efficiency using the same instrument. Given that both studies analyze these indicators over an extended period, it is possible to compare the historical average values for both groups of countries. The figure below illustrates these trajectories.

47 Average ((OECD = 0.568, LAC = 0.5478), Median (OECD = 0.566, LAC = 0.531), Standard Deviation (OECD = 0.126, LAC = 0.137)

Figure 9. Evolution of revenue collection efficiency indicators. Annual averages $OECD_{VRR}$ & $LAC\_C_{EF\_C}$ 1992 – 2018.



The figure shows the evolution of VAT efficiency indices over the period 2005–2022. In both cases, the indicator fluctuates within a relatively narrow range, remaining in intermediate values of the theoretical interval between 0 and 1. This feature reveals a marked rigidity of the index over time, with limited variations and no persistent abrupt shifts.

For the OECD countries, the average VAT efficiency index displays a particularly stable pattern. After reaching higher values in the early years of the period, the indicator declines around 2009, consistent with the impact of the global financial crisis. Thereafter, the index remains virtually constant for several years, forming a plateau that extends until approximately 2016. From that point onward, a gradual recovery is observed, bringing the index back to levels close to the maxima recorded toward the end of the series.

In the case of CIAT countries, the evolution of the index exhibits greater relative variability, albeit still within a similarly bounded range. Following a growth phase up to 2009, a pronounced decline is observed in 2010, followed by a recovery that peaks around 2013–2014. Subsequently, the indicator shows a moderately downward trajectory, with a significant contraction in 2021 and a marked rebound in 2022. Nevertheless, these fluctuations do not alter the overall pattern of long-term stability of the index.

A comparison between both groups of countries reveals that the average level of VAT efficiency is higher in OECD countries than in CIAT countries throughout most of the period analyzed. However, the gap between the two groups remains

relatively stable, with no clear evidence of convergence or divergence. This behavior suggests that VAT efficiency is strongly conditioned by structural factors, such as tax design, the magnitude of tax expenditures, and administrative and enforcement capacity, which tend to evolve only gradually.

Taken together, the evidence confirms that VAT efficiency exhibits a high degree of inertia in both groups of countries over the period 2005–2022. The observed variations appear to respond mainly to cyclical episodes, while the overall performance of the tax remains relatively stable. This reinforces the idea that substantial improvements in this indicator require sustained structural reforms over time.

VAT constitutes a fundamental pillar of revenue mobilization in both Latin American and Caribbean countries and OECD members. The slowdown in the improvement of collection efficiency observed up to 2007–2008 can be explained by the components of the tax gap. Countries in the region have achieved progress in reducing noncompliance, as suggested by various empirical studies on VAT evasion, whereas the policy component—tax expenditures—appears to be more rigid and less prone to decline. Consequently, there remains significant scope for enhancing the revenue-raising capacity of this tax.

VAT represents a central pillar of tax revenue in both Latin American and Caribbean countries and OECD member states. The stagnation in improvements in collection efficiency can be interpreted in light of the composition of the tax gap. In particular, although countries in the region have made progress in reducing noncompliance, as evidenced by empirical studies on VAT evasion, the component associated with tax policy—especially tax expenditures arising from exemptions and preferential treatments—shows greater rigidity and a weaker downward trend. In this context, a substantial margin remains for increasing the revenue potential of this tax, primarily contingent on structural reforms in its design and scope.

Appendix V. VRR Ratio Series. OECD Countries

Country	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	0.55	0.53	0.48	0.49	0.48	0.46	0.45	0.48	0.48	0.49	0.49	0.48	0.47	0.46	0.51	0.48	0.5
Austria	0.58	0.58	0.59	0.58	0.58	0.58	0.59	0.58	0.58	0.59	0.59	0.6	0.6	0.6	0.59	0.6	0.63
Belgium	0.51	0.52	0.5	0.49	0.49	0.49	0.49	0.48	0.48	0.47	0.48	0.48	0.48	0.47	0.45	0.5	0.46
Canada	0.49	0.5	0.49	0.48	0.48	0.47	0.47	0.46	0.47	0.48	0.48	0.49	0.49	0.48	0.48	0.5	0.5
Chile	0.68	0.7	0.73	0.62	0.65	0.66	0.66	0.66	0.65	0.66	0.64	0.65	0.66	0.64	0.63	0.74	0.71
Colombia	0.42	0.45	0.48	0.43	0.44	0.49	0.46	0.41	0.42	0.41	0.38	0.37	0.38	0.39	0.34	0.37	0.4
Costa Rica	sd	sd	sd	sd	sd	sd	sd	sd	sd	sd	sd	sd	sd	0.43	0.45	0.52	0.5
Czechia	0.56	0.53	0.56	0.55	0.51	0.54	0.55	0.55	0.57	0.57	0.58	0.6	0.58	0.58	0.56	0.58	0.6
Denmark	0.62	0.65	0.61	0.58	0.57	0.58	0.59	0.58	0.59	0.59	0.6	0.61	0.62	0.62	0.65	0.65	0.66
Estonia	0.7	0.81	0.67	0.74	0.67	0.67	0.68	0.65	0.68	0.71	0.71	0.72	0.72	0.71	0.7	0.75	0.73
Finland	0.61	0.6	0.58	0.56	0.55	0.56	0.57	0.56	0.55	0.54	0.55	0.57	0.58	0.59	0.59	0.6	0.6
France	0.52	0.52	0.5	0.47	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.5	0.5	0.51	0.49	0.53	0.53
Germany*	0.54	0.53	0.54	0.54	0.53	0.54	0.54	0.54	0.54	0.55	0.55	0.55	0.55	0.55	0.55	0.57	0.57
Greece	0.47	0.48	0.46	0.39	0.45	0.38	0.37	0.36	0.38	0.39	0.44	0.43	0.44	0.43	0.38	0.43	0.47
Hungary	0.48	0.58	0.56	0.61	0.52	0.51	0.52	0.52	0.56	0.59	0.55	0.56	0.59	0.59	0.59	0.62	0.62
Iceland	0.61	0.59	0.51	0.44	0.42	0.42	0.43	0.43	0.44	0.51	0.53	0.57	0.54	0.5	0.46	0.5	0.51
Ireland*	0.66	0.63	0.55	0.46	0.48	0.45	0.44	0.45	0.48	0.48	0.48	0.48	0.49	0.5	0.44	0.52	0.51
Israel	0.62	0.66	0.66	0.66	0.66	0.66	0.65	0.65	0.64	0.64	0.65	0.64	0.64	0.63	0.64	0.7	0.7
Italy	0.39	0.41	0.39	0.36	0.4	0.4	0.37	0.37	0.37	0.37	0.37	0.39	0.38	0.39	0.38	0.43	0.45
Japan	0.7	0.68	0.67	0.66	0.68	0.68	0.69	0.7	0.69	0.73	0.72	0.72	0.72	0.59	0.7	0.72	0.72
Korea	0.59	0.58	0.58	0.6	0.62	0.61	0.63	0.61	0.62	0.57	0.62	0.64	0.64	0.65	0.65	0.67	0.73
Latvia	0.57	0.6	0.49	0.38	0.42	0.43	0.46	0.49	0.5	0.52	0.54	0.54	0.58	0.59	0.58	0.59	0.64
Lithuania	0.52	0.61	0.58	0.47	0.49	0.51	0.5	0.5	0.51	0.51	0.51	0.53	0.53	0.54	0.56	0.59	0.6
Luxembourg	0.82	0.92	0.91	0.92	0.93	0.98	1.03	1.08	1.15	0.74	0.76	0.77	0.76	0.76	0.79	0.79	0.84
Mexico	0.27	0.3	0.31	0.28	0.29	0.28	0.28	0.26	0.29	0.3	0.31	0.3	0.32	0.31	0.35	0.35	0.33
Netherlands	0.55	0.58	0.56	0.52	0.54	0.51	0.51	0.47	0.46	0.48	0.5	0.51	0.51	0.54	0.56	0.58	0.55
New Zealand	1.01	0.95	0.96	0.96	1.09	0.92	0.93	0.93	0.95	0.95	0.94	0.96	0.95	0.95	1.02	0.98	0.96
Norway	0.57	0.63	0.57	0.55	0.56	0.56	0.57	0.57	0.56	0.56	0.57	0.57	0.58	0.57	0.59	0.6	0.6
Poland	0.47	0.53	0.5	0.45	0.47	0.48	0.43	0.43	0.44	0.44	0.45	0.49	0.51	0.51	0.51	0.56	0.46
Portugal	0.56	0.51	0.49	0.43	0.48	0.45	0.47	0.46	0.49	0.5	0.49	0.51	0.52	0.53	0.49	0.53	0.56
Slovak Republic	0.61	0.53	0.53	0.47	0.46	0.49	0.43	0.47	0.49	0.52	0.5	0.52	0.52	0.53	0.51	0.53	0.52
Slovenia	0.67	0.7	0.69	0.59	0.59	0.59	0.57	0.59	0.58	0.58	0.58	0.59	0.6	0.59	0.54	0.58	0.57

Country	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Spain	0.56	0.52	0.41	0.29	0.44	0.38	0.4	0.39	0.41	0.43	0.43	0.44	0.45	0.44	0.42	0.46	0.47
Sweden	0.53	0.56	0.57	0.55	0.57	0.56	0.55	0.54	0.55	0.56	0.58	0.58	0.58	0.59	0.59	0.6	0.61
Switzerland	0.72	0.73	0.73	0.7	0.71	0.7	0.7	0.7	0.7	0.69	0.68	0.68	0.68	0.67	0.68	0.7	0.69
Türkiye*	0.4	0.38	0.37	0.36	0.41	0.44	0.4	0.44	0.4	0.42	0.4	0.41	0.4	0.34	0.38	0.47	0.44
United Kingdom	0.44	0.45	0.43	0.43	0.44	0.44	0.43	0.44	0.44	0.45	0.45	0.45	0.45	0.46	0.44	0.46	0.49
OECD average	0.57	0.58	0.56	0.53	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.55	0.56	0.55	0.55	0.58	0.58

Source: Consumption Tax Trends 2024: VAT/GST and Excise Rates, Trends and Policy Issues. 2024.

Appendix VI. Efficiency Ratios and Tax Burden Index for VAT and CIT 2000 – 2023

Year	VAT efficiency index	CIT efficiency index	VAT tax burden index	CIT tax burden index
2000	145.5	187.1	188.9	138.0
2001	145.8	189.9	193.2	143.3
2002	146.2	169.6	194.3	137.9
2003	151.7	180.0	201.2	149.8
2004	156.5	183.6	209.3	158.2
2005	160.0	202.9	215.4	167.6
2006	167.9	225.7	223.2	183.9
2007	174.9	251.1	230.2	196.9
2008	182.3	256.3	237.1	199.6
2009	165.3	284.4	218.0	201.2
2010	174.4	245.2	228.0	189.4
2011	180.8	250.9	233.8	199.0
2012	183.9	275.3	236.0	214.0
2013	183.6	292.2	236.2	219.2
2014	182.8	302.1	240.1	215.6
2015	181.7	313.2	239.9	217.6
2016	175.9	313.9	235.0	223.8
2017	176.4	285.3	237.3	218.8
2018	175.9	292.7	238.8	226.3
2019	175.0	296.9	237.1	226.6
2020	165.0	302.6	227.4	216.7
2021	184.8	263.2	248.9	223.3
2022	187.7	308.8	253.2	253.6
2023	186.0	316.1	249.8	246.8

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