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Tax Administration: Performance and Practices

Prepared by William Crandall, Elizabeth Gavin, Zhaoqing Liu, Andrew Masters, and Poorva Navalgundkar

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This departmental paper presents the results of the International Survey on Revenue Administration (ISORA) deployed during 2023 and covering fiscal year 2022. It is made possible by the participation of 166 tax administrations around the world that provided data. The data collection was a joint venture with the Asian Development Bank, the Inter-American Center of Tax Administrations, the Intra-European Organisation of Tax Administrations, and the Organisation for Economic Co-operation and Development. Staff in the revenue administration divisions of FAD and in the IMF's Regional Capacity Development Centers were most helpful in assisting with the conduct of the survey.

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Executive Summary

This paper presents a broad analysis of the International Survey on Revenue Administration (ISORA) 2023, which collected detailed data from 166 tax administrations worldwide for the fiscal year (FY) 2022.[1] It is the first survey since 2017 to cover tax administration practices and structural foundations extensively, providing valuable insights into global tax administration performance, resources, and governance frameworks. The paper also provides contextual information about the survey to aid interpretation and facilitate the use of the comparative database.

Overview of ISORA

ISORA is a collaborative project of the International Monetary Fund (IMF), the Asian Development Bank, the Inter-American Center of Tax Administrations, the Intra-European Organisation of Tax Administrations, and the Organisation for Economic Co-operation and Development, to develop a unified, standardized database on tax administration to support comparative analysis and capacity development. The comparative database contains data collected annually starting 2014 and includes data from over 180 tax administrations around the world that participated in at least one round of the survey.

ISORA 2023 and Participants

The 2023 round incorporated both annual quantitative data and periodic qualitative data on practices and structures, offering a richer data set than recent rounds. Data from all 166 tax administrations that contributed data for 2022 are used in the analysis presented in this paper.

The survey achieved broad participation from tax administrations across advanced economies (AEs), emerging market economies (EMEs), and low-income developing countries (LIDCs), as well as by IMF region, except for the Middle East and Central Asia Department (MCD) region, where participation remains limited (11 participants in ISORA 2023). Fragile and conflict-affected states (FCSs) and small developing states (SDSs) are also represented (22 and 31, respectively), although individual FCS completion of ISORA is less consistent year over year.

Participant tax administrations vary widely in size, measured by full-time equivalents (FTEs), ranging from fewer than 10 staff to almost 700,000, as well as in scale of operations, with numbers of taxpayers and tax returns processed that range by five orders of magnitude. This diversity among participating administrations supports nuanced comparative analysis by administration size and operational scale.

Information Available

Data Types

ISORA collects three main types of data: (1) quantitative (numerical), (2) categorical data (including yes/no questions), and (3) free-text fields. Quantitative data are primarily collected annually, and qualitative data periodically. The survey collection platform ensures responses to all applicable questions, with mechanisms to distinguish missing data from zero values or nonapplicable questions.

[1] Data collected in ISORA pertain to a fiscal year (FY). Throughout the document, the reference period denoted 20xx refers to FY 20xx.

Data Quality

There is broad consistency in the numerical data provided in ISORA with corresponding measures collected through assessments conducted using the Tax Administration Diagnostic Assessment Tool (TADAT)[2] framework, insofar as comparisons can be made between ISORA data and published anonymized distributions of TADAT scores.

Approximately one-third of quantitative indicators have over 90 percent data completeness for 2022, and nearly two-thirds exceed 80 percent. Data on revenue collections and staff demographics are the most complete, whereas data provided on payments, arrears, and audits show persistent gaps (roughly one-third of the data points requested are not provided), indicating areas where data management and transparency have improved less than other areas probed by ISORA.

Quantitative data availability varies by economic grouping, with AEs generally providing more complete data than EMEs and LIDCs, although EMEs provide more complete data on taxpayer registration and segmentation than AEs. Administrations with over 95 percent data availability span all economic groups and regions and include SDSs, demonstrating that good data management practices are achievable across diverse contexts.

Accessing ISORA Data

ISORA data and metadata are publicly accessible through the ISORA data portal (https://isoradata.org), offering multiple data formats and interactive tools for customized analysis. Questionnaires, guides, and publications related to ISORA are also available.

Tax Administration Characteristics

Institutional Arrangements and Scope

Approximately 40 percent of tax administrations operate jointly with customs. Semiautonomous bodies are more common in AEs (63 percent) than in EMEs (38 percent) or LIDCs (40 percent). Across all economic groups, joint tax and customs administrations are more likely to operate as semiautonomous institutions.

Most administrations collect the three main taxes: personal income tax (PIT), corporate income tax (CIT), and value-added tax (VAT), with 87 percent collecting all three. Almost all administrations also collect one or more other taxes, and 60 percent collect nontax revenues, whereas 28 percent are responsible for collecting social security contributions. Nontax roles are commonly held by administrations across all economic groups, with the incidence of roles largely unchanged from 2017.

Revenue Collection

Tax administrations in AEs collected revenue amounting to an average of 24 percent of GDP, compared with 17 percent in EMEs and 13 percent in LIDCs. Despite differences in revenue-to-GDP ratios, tax administrations typically collect around 60 percent of total government revenue across all economic groups, highlighting their critical tax capacity role.

[2] Tax Administration Diagnostic Assessment Tool (TADAT) provides a standardized methodology used to assess the health and performance of a country's system of tax administration against a set of international good practices. Assessments using the TADAT methodology are made by trained assessors (https://www.tadat.org).

Tailored Responses to Taxpayer Segments

About 90 percent of EMEs and LIDCs and 78 percent of AEs operate large taxpayer office/program (LTO/P). However, there are large variations in LTO/P functions, size, and resources that limit empirical identification of characteristics associated with the effectiveness of an LTO/P. High-net-wealth individual programs exist in 28 percent of tax administrations and are more common in AEs but are growing among EMEs and LIDCs. Simplified income tax regimes are more prevalent in LIDCs and fragile states, aiding small business inclusion.

Financial and Human Resources

Operational expenditure relative to GDP is about 30 percent higher in AEs than in LIDCs, with FCS generally allocating even less than LIDCs. The spending of EMEs is raised by a higher allocation by SDS, as expected given economies of scale. Salaries constitute about 66 percent to 74 percent of operational costs for all economic groups, whereas information and communications technology expenditure is higher among AEs.

Staff levels vary greatly, with AEs having roughly 10 times the FTEs per population compared with LIDCs. Most staff are allocated to taxpayer services for all groups, but AEs dedicate more staff to audit and verification than LIDCs.

Tax Administration Performance

Core Functions

- *Registration:* Active taxpayers as a percent of taxpayers on the register have increased among LIDCs for all taxes except PIT, although they still fall below those of AEs for PIT and CIT. Active PIT taxpayers as a percentage of the labor force vary widely, with the median for AEs a hundred times greater than the median for LIDCs. Across all taxes, except for VAT, active taxpayer growth over five years outstripped labor market growth.
- *On-time filing and payment:* On-time filing rates are highest for VAT and PIT and significantly better in AEs than in EMEs and LIDCs. Although PIT and CIT registrations have grown in LIDCs, on-time filing rates have declined. On-time payment rates also show similar patterns, that is, better performance among AEs, but with fewer administrations reporting data.
- *Electronic filing (e-filing) and payment (e-payment):* More than 60 percent of LIDC tax administrations have made e-filing and e-payment mandatory for most taxpayers, and average LIDC e-filing and e-payment rates have grown rapidly over the five-year period of 2018–23, approaching similar levels to EMEs in e-filing, and exceeding them in e-payment. However, e-filing and e-payment rates in LIDCs and EMEs still lag those of AEs, which increased more slowly by about 5 percentage points over the same period.
- *Prefilling PIT returns:* There are large differences in the practice of prefilling PIT returns in AEs, EMEs, and LIDCs. Prefilling of PIT returns using third-party data remains common in AEs (about 90 percent in both 2018 and 2023), showing steady growth in the range of data sources used. Among EMEs, prefilling has increased to be used by half of administrations, but prefilling by LIDCs remains limited, with just over one-seventh of LIDCs using any third-party data for prefilling.
- *Arrears:* Arrears constitute significant percentages of GDP and revenue, around 2 percent in AEs and LIDCs and 5 percent in EMEs. Arrears as reported in ISORA are highest for CIT and VAT as a percent of the respective collections for these tax types. Arrears reported for PIT and pay as you earn are significantly lower for AEs than in EMEs and LIDCs. Arrears associated with state-owned enterprises constituted 22 percent of the stock of tax arrears among LIDCs.
- *Audit and verification:* Over 80 percent of administrations undertake compliance interventions prior to audit, and almost all administrations reported undertaking one or more types of audits. There are distinct differences in the emphasis of audit and verification efforts between AEs on the one hand and EMEs and LIDCs on the other hand: Most AEs undertake verifications during return filing, whereas less than half of EMEs and LIDCs do so. Tax administrations in AEs are also more likely to use third-party data or

data analytics in verification actions before triggering an audit. Audit hit rates and assessments raised are also lowest in AEs, suggesting that verification efforts other than audits are sustaining compliance levels. CIT assessments raised through audit are larger than those raised for other tax types across all economic groups.

Efficiency

Three efficiency measures—(1) operational cost as a percentage of revenue collected (cost of collection), (2) active taxpayers per FTE, and (3) returns received per FTE—consistently show higher efficiency in AEs, followed by EMEs, with LIDCs as a group exhibiting the lowest efficiencies.

In line with expected economies of scale, SDSs exhibit higher operational costs in relation to revenue collected than LIDCs, although they perform better than LIDCs against the other two measures. The low budget available to FCSs leads to a lower cost of collection than that of LIDCs; however, using the FTE-related measures, they exhibit lower efficiency.

By IMF region, African Department tax administrations, with a high concentration of LIDCs and FCS, exhibit the lowest efficiency. Administrations in European Department (EUR) exhibit the highest efficiencies using the two FTE-related measures, followed by Western Hemisphere Department. EUR's cost of collection is close to the smallest cost of collection seen in the MCD region.

All three measures point to efficiency gains across all economic groups between 2018 and 2022.

Tax Administration Practices and Structural Foundations

Analysis Using Indices

ISORA 2023 data enabled the construction of seven thematic indices reflecting tax administration practices and structural foundations: (1) compliance management (CM), (2) digitalization (DG), (3) governance (GV), (4) human resources management and development (HRMD), (5) management autonomy (MA), (6) public trust (PT), and (7) taxpayer services (TS).

These indices synthesize responses to over 200 survey questions, facilitating comparative analysis. The dispersion in index scores is widest for human resources management and development, management autonomy, and public trust. The lowest variation in scores for taxpayer services and compliance management indicates wide adoption of practices in these domains covered in ISORA. As expected, strong positive correlations exist among all the indices.

Group Comparisons of Practices and Structural Foundations

AEs outperform EMEs and LIDCs across all seven indices by significant margins, especially in digitalization, human resources management and development, and public trust. Key drivers of differences in index scores between AEs and LIDCs include the greater likelihood of administrations in AEs to use data in core tax administration processes, publish documents on plans and performance, offer flexible working arrangements, and monitor employee activity and engagement.

FCSs and SDSs score lower than LIDCs on all indices, reflecting challenges linked to scale and context. As observed for FY17, FCS scores fall significantly below other administrations in digitalization. They also report low levels of management autonomy. Within each economic grouping, index scores correlate positively with administration size.

Regional differences in index scores are less pronounced than economic group differences. EUR (dominated by AEs) scores highest, whereas African Department, Asia and Pacific Department, and Western Hemisphere Department cluster lower. MCD scores are intermediate but may not be representative of the region as a whole, given limited participation by MCD countries.

Associations with Performance, Resources, and Efficiency Measures

The indices correlate positively with performance and operational metrics such as PIT taxpayers as a percent of population; TADAT on-time filing measures for PIT, CIT, VAT, and employer withholding; and e-filing and e-payment rates and correlate negatively with arrears measures, indicating that good practices and stronger foundations are associated with higher taxpayer compliance levels. These correlations are generally strongest for digitalization, taxpayer service, governance, and public trust.

With respect to human resources, the indices all correlate positively with the percentage of staff with over 10 or 20 years of experience and staff with a degree, exhibiting the strongest associations with digitalization and taxpayer services, respectively. The proportion of staff allocated to audit and verification functions also has a positive correlation with all seven indices and correlates most strongly with digitalization. The efficiency measure, cost of collection, is negatively correlated with all indices and exhibits a stronger correlation than that between the indices and operating cost as a percent of GDP. The efficiency measures—active taxpayers per FTE and returns per FTE—correlate positively with all the indices and also most strongly with digitalization.

The ratios of revenue collection to GDP and to government revenue also correlate positively with all indices and most strongly with digitalization, taxpayer services, and public trust. All indices also correlate positively with tax effort from a stochastic frontier model and negatively with the VAT compliance gap determined using the IMF's RA-GAP[3] methodology.

Conclusion

The ISORA 2023 survey provides a rich, globally representative data set on tax administration performance, practices, and structural foundations. It highlights disparities across economic groups; persistent challenges in data availability for critical functions such as audit and arrears management; and the positive role of digitalization, taxpayer services, public trust, and governance in tax administration outcomes.

Findings presented in this paper suggest the value of more in-depth analysis of topics such as high levels of VAT noncompliance (and arrears), the sustaining of taxpayer compliance through measures other than audit, the relationship between resources and tax administration effectiveness, particularly among FCSs, and practices that promote the effectiveness of small tax administrations. The thematic indices developed offer valuable tools for benchmarking and guiding capacity development efforts worldwide.

[3] The IMF's Revenue Administration Gap Analysis Program (RA-GAP) provides a standardized, top-down methodology to estimate tax gaps—the difference between potential and actual tax collections – separately estimating the contributions of the compliance and policy gaps.

Acronyms and Abbreviations

AE	advanced economy
ADB	Asian Development Bank
AFR	African Department
APD	Asia and Pacific Department
CIAT	Inter-American Center of Tax Administrations
CIT	corporate income tax
CM	compliance management (index)
DG	digitalization (index)
EME	emerging market economy
EUR	European Department
FCS	fragile and conflict-affected state
FTE	full-time equivalent
FY	fiscal year
GV	governance (index)
HNWI	high-net-wealth individual
HR	human resources
HRM	human resources management
HRMD	human resources management and development (index)
IT	income tax
ICT	information and communications technology
IMF	International Monetary Fund
IOTA	Intra-European Organisation of Tax Administrations
ISORA	International Survey on Revenue Administration
LIDC	low-income developing country
LTO/P	large taxpayer office/program
MA	management autonomy (index)
MCD	Middle East and Central Asia Department
OECD	Organisation for Economic Co-operation and Development
PAYE	pay as you earn
PIT	personal income tax
PT	public trust (index)

RCDC	regional capacity development center
SDS	small developing state
SOE	state-owned enterprise
SSC	social security contribution
TADAT	Tax Administration Diagnostic Assessment Tool
TS	taxpayer services (index)
VAT	value-added tax
WEO	World Economic Outlook
WHD	Western Hemisphere Department

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1. Introduction

A. Objectives and Nature of International Survey on Revenue Administration (ISORA)

ISORA provides a worldwide comparative database on revenue administration performance, profile, structure, and practice. Data by fiscal year (FY)[4] are collected from tax administrations through a questionnaire developed and administered through the collaborative efforts of five international organizations: the Asian Development Bank (ADB), the Inter-American Center of Tax Administrations (CIAT), the International Monetary Fund (IMF), the Intra-European Organisation of Tax Administrations (IOTA), and the Organisation for Economic Co-operation and Development (OECD).

The Fiscal Affairs Department of the IMF began developing surveys of tax and customs administration practices and performance prior to 2010, motivated both by the recognition of the importance of enhancing country capacity to monitor the performance of their revenue administrations and internal needs for consistent, comparative data to support capacity development (CD) delivery. Performance measurement and monitoring in many low-income developing countries (LIDCs) and small developing states (SDSs) was limited by poor data management practices, coupled with poor-quality data.

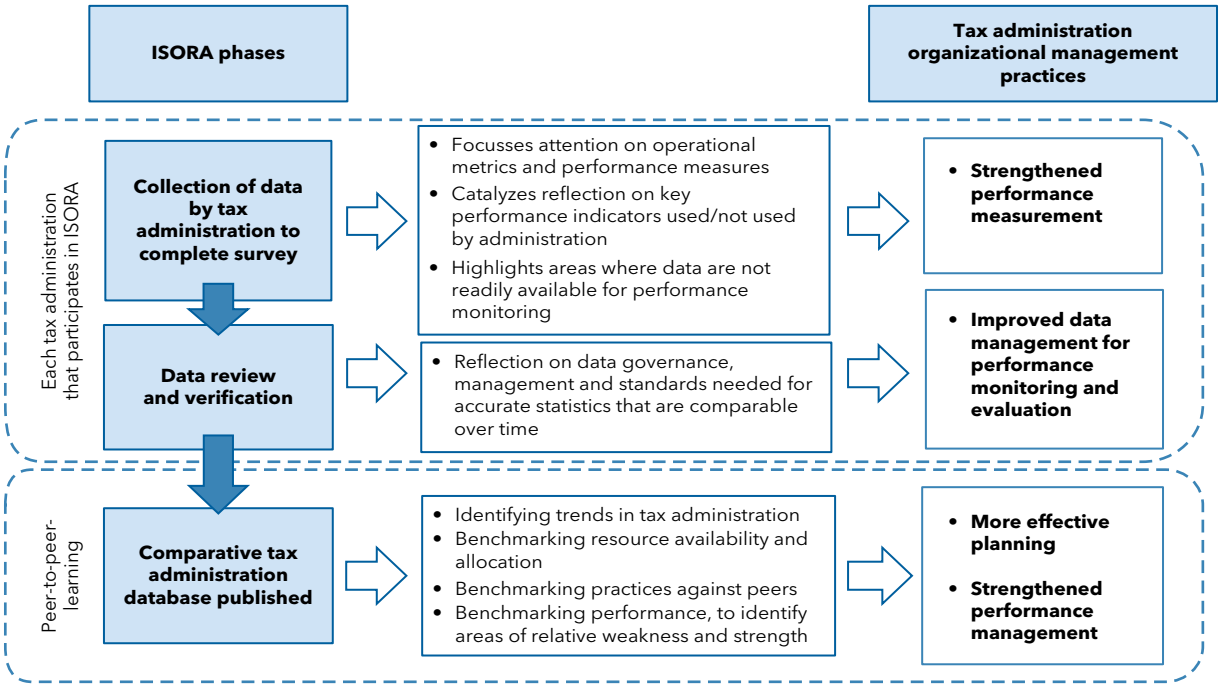
Other international organizations such as CIAT and the OECD were also undertaking surveys of tax administrations at this time. The Fiscal Affairs Department initiated discussions with partner organizations to ensure a collaborative approach to data collection from tax administrations. This led to the establishment of the ISORA partnership, which eliminated duplication of effort, reduced the compliance burden for tax administrations participating in multiple surveys, and led to a single, standardized database on tax administration, with wider coverage.

A unified tax administration database enables comparison between and among individual tax administrations as well as groups of tax administrations based on economic characteristics, region, and scale. The collection of data for each FY supports the identification of trends in practices and performance. Data have been collected for 10 FYs (2014 to 2023). As the survey database grows over time, its value to CD partners, tax administrations, and researchers increases.

Tax administrations are engaged directly in the survey, through all its phases, as shown in Figure 1. Administrations participate voluntarily. Staff of the tax administrations access an online data collection platform developed and administered by the IMF, with built-in consistency and completeness checks. Tax administrations participating in the survey are offered training on concepts and definitions used in ISORA and on how to use the published ISORA database. The administrations are also engaged in the review of data they have provided, prior to finalizing the data for publication. The process of data collection is linked to key organizational management practices—planning, performance monitoring and evaluation, and the management of data to facilitate its internal availability for evidence-based decisions.

[4] The reference period of the survey is the tax administration's fiscal year (FY). The FY may differ from the calendar year. Of 159 participants in International Survey on Revenue Administration (ISORA) 2018, the FY coincided with the calendar year for 119 participants, that is, the FY differed from the calendar year for a quarter of tax administrations completing ISORA.

Figure 1. ISORA's Interaction with Key Organizational Management Practices of Tax Administration



Source: Authors' compilation.
Note: ISORA = International Survey on Revenue Administration.

B. The 2023 ISORA Round

Data collected from tax administrations in the 2023 survey round for 2022 were more extensive than the data collected for 2018 to 2021. A set of questions covering tax administration practices and structures was included in the questionnaire, alongside the annual questions pertaining to measures expected to change year over year (for example, resources, tax returns filed, and audits undertaken). ISORA 2023 thus provides an update on some tax administration characteristics previously probed in 2017 and, in addition, offers data associated with questions on tax administration practices that emerged in the past five years.

Initially, ISORA surveys took place biennially, collecting data for two FYs in each of the first two rounds conducted in 2016 and 2018. However, this meant that tax administrations were burdened with providing a large number of data points, for each of the two years, to complete the survey. To improve data quality and reduce response burden, a decision was made to shift to annual collection of a more streamlined set of data, supplemented by four- or five-yearly collection of "periodic" data points. The progression to annual data collection aligns better with the annual planning and reporting cycles of tax administrations. Data points designated as "periodic" are generally not expected to change each year (for example, institutional arrangements, human resources management [HRM] approaches). Data collections for FY 2018 to 2021 focused on the annual data points only.

The topics covered by ISORA 2023 are shown in Table 1.[5] The periodic data points complement the largely numerical annual time-series data. For instance, staff demographics and dynamics (collected annually) may be examined along with HRM approaches (collected periodically). The questionnaires and associated guides for all rounds of ISORA are available through the ISORA data portal.[6]

[5] The types of questions are discussed in more detail in Chapter 2.

[6] The ISORA data portal is hosted by the International Monetary Fund (IMF) on https://data.imf.org. The link https://isoradata.org takes the user directly to links to ISORA data, questionnaires, guides, and questionnaires.

Table 1. High-Level Picture of Tax Administration Data Collected through ISORA 2023

Annually Collected Data		Periodically Collected Data	
Roughly 90 percent numerical questions		*Roughly 95 percent categorical or yes/no questions*	
A	Revenue roles and segmentation features		
B	Revenue collected		
C	Resources: expenditure and people (full-time equivalents)	C-P	Institutional arrangements, governance and management practices
D	Staff demographics	D-P	Human resources management
E	Taxpayer segments	E-P	Segmentation and compliance management
F	Operational metrics	F-P	Tax operations
G	Taxpayer and other stakeholder interactions	G-P	Engagement with stakeholders: taxpayers, information providers, and others

Source: Authors' compilation.
Note: ISORA = International Survey on Revenue Administration.

C. Purpose and Structure of This Paper

The IMF periodically publishes analytical papers highlighting findings from ISORA data.[7] This paper focuses on the extensive data collected through ISORA 2023, provided by all 166 participants in the survey for FY 2022. The purpose of this paper is to (1) provide information on survey participants and data collected, which facilitates interpretation and analysis of ISORA 2023 data; (2) share selected findings from the survey; and (3) present exploratory analysis of relationships between tax administrations' practices, structures and resources, operations, and performance. The underlying aim is to encourage the use and further analysis of the ISORA comparative database.

The IMF generally uses the entire ISORA database for its analyses, as the vast majority of ISORA participants are the IMF members or members of the IMF's regional capacity development centers. ISORA partner organizations generally use data pertaining to their members in their analyses. Publications by the OECD cover participants of the OECD's Forum on Tax Administration, whereas the ADB, CIAT, and IOTA undertake and publish analyses focused on their membership.[8]

Previous IMF publications focused on ISORA results have included broad discussion of many matters of interest in three areas: performance-related data; profile data (institutional arrangements, scope, powers, and so on); and data on practices and structural foundations (including the use of various indices developed for analytical purposes). This paper continues with many of these themes, including a focus on performance data and analysis of administration practices and structural foundations using indices.

The paper is structured as follows:

- Chapter 1 provides an overview of the survey and this paper.
- Chapter 2 provides information on ISORA participants by economic grouping, the IMF region, fragile and conflict-affected states (FCSs), SDSs, and size and scale of operations.

[7] Previous papers that focused on ISORA 2016 and ISORA 2018 are available at https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2019/03/07/ISORA-2016-Understanding-Revenue-Administration-46337 and https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2021/11/03/Understanding-Revenue-Administration-464865.

[8] The Asian Development Bank, Inter-American Center of Tax Administrations (CIAT), and Organisation for Economic Co-operation and Development (OECD) have produced publications based on ISORA 2023 data.

- Chapter 3 discusses information available in the survey, including a novel analysis of the availability of quantitative measures.
- Chapter 4 covers highlights drawn from analysis of the most recent survey and trends observed in key performance areas and tax administration characteristics.
- Chapter 5 presents findings on tax administration practices and structural foundations, using indices constructed from data collected through ISORA 2023.

Throughout the publication, the source of data is ISORA, as published in July 2024, except where otherwise indicated. All charts are the work of the authors, based on their analysis.

2. ISORA 2023 Participants

This chapter provides an overview of tax administrations represented in the ISORA comparative database in general, with a special focus on ISORA 2023 participants, by various groupings of interest. Comparisons within and among groupings of tax administrations are more meaningful when there is adequate representation of tax administrations with the characteristics or features of interest.

A. Participation by Economic Grouping and Region

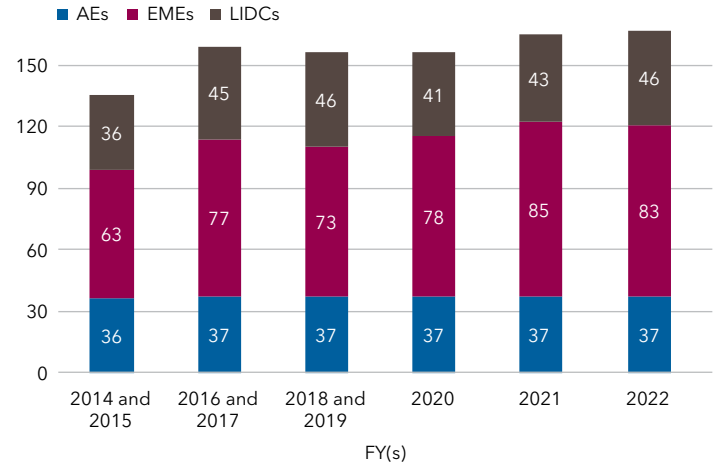
The ISORA 2023 survey was completed by 166 tax administrations. The number of tax administrations completing ISORA has generally grown over time, starting from the 135 administrations that completed the first survey round covering 2014 and 2015. The list of ISORA 2023 participants is provided in Annex 1.

Economic Grouping

Tax administrations in advanced economies (AEs), emerging market economies (EMEs), and LIDCs participate in ISORA. Figure 2 shows the number of participants in each of the seven rounds of ISORA by economic grouping. Despite intermittency in survey participation by some LIDCs, ISORA covers a good number of LIDC tax administrations.

Figure 2. Participation in ISORA by Economic Group (2014 to 2022)

(Number of tax administrations)



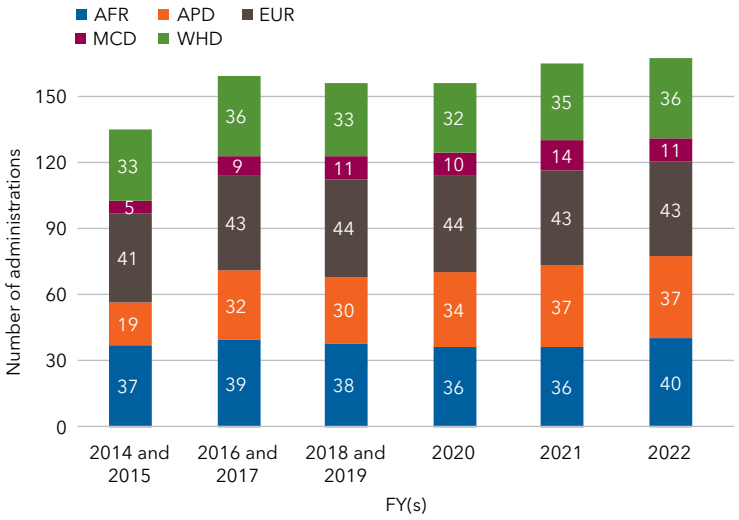
Source: Authors' compilation.

Note: The IMF's *World Economic Outlook* (2023) classifications are used where available. Small economies not classified by the *World Economic Outlook* are included as emerging market economies. FYs = fiscal years; ISORA = International Survey on Revenue Administration.

Regional Participation

ISORA participation by the IMF region is shown for ISORA rounds covering 2014 to 2022 in Figure 3. Where participation rates are low, the participants may not be representative of the region, as is the case for the Middle East and Central Asia Department (MCD), where most participation is from countries in Central Asia. Historically, participation by MCD countries has been the lowest of all regions.

Figure 3. Participation in ISORA by the IMF Region (2014 to 2022)



Source: Authors' compilation.

Note: AFR = African Department; APD = Asia and Pacific Department; EUR = European Department; FYs = fiscal years; IMF = International Monetary Fund; MCD = Middle East and Central Asia Department; WHD = Western Hemisphere Department.

Numbers of ISORA 2023 participants and participation rates by economic grouping and area department are shown in Table 2. As ISORA focuses on national-level tax administrations, the number of participants for several combinations of economic group and region is small, and caution should be taken in interpreting statistics for these small groupings.

Table 2. Participation in ISORA by the IMF Economic Grouping and the IMF Region (2022)

	AFR	APD	EUR	MCD	WHD	IMF Member Participation Rate
AE	0	7	28	0	2	35 of 37
EME	10	20	14	7	32	76 of 95
LIDC	30	10	1	4	1	45 of 58
Total	**40**	**37**	**43**	**11**	**35**	**156 of 190**

Source: Authors analysis, using ISORA data and IMF classifications.

Note: The IMF member total as of 2023. *World Economic Outlook* classifications (2023) used where available. Small economies not classified by the *World Economic Outlook* are included as emerging market economies. Some participants in ISORA are not IMF members; hence, the sum of participants by row can exceed the number of participating IMF members. AE = advanced economy; AFR = African Department; APD = Asia and Pacific Department; EME = emerging market economy; EUR = European Department; FY = fiscal year; IMF = International Monetary Fund; LIDC = low-income developing country; MCD = Middle East and Central Asia Department; WHD = Western Hemisphere Department.

B. Participation by Other Commonly Used Grouping

Fragile and Conflict-Affected States

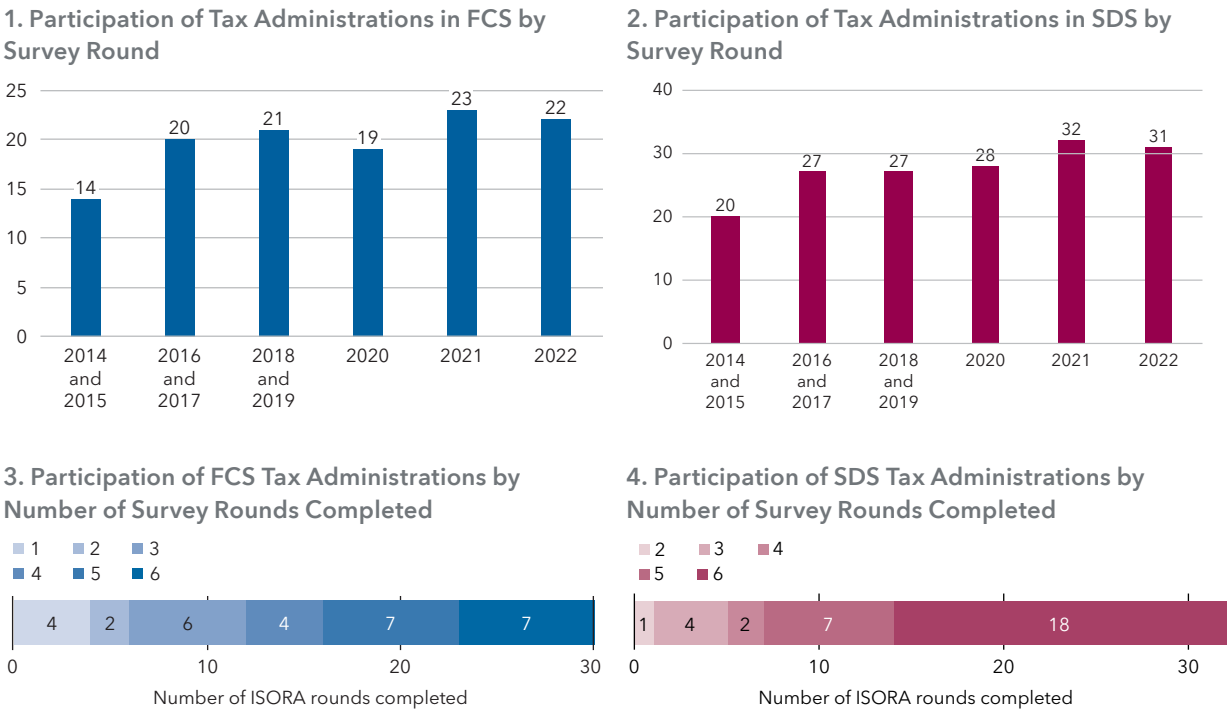
FCSs are represented in ISORA data, although few (seven) have participated in ISORA every year. Administrations in FCSs in the conflict category are less likely to complete ISORA. The ISORA 2023 data set includes 14 of 20 FCSs in the institutional and social fragility category, but only 8 of the 19 in the conflict category.[9] Panel 1 in Figure 4 gives the number of FCSs that have completed ISORA each year, whereas

[9] This is based on the 2024 IMF fragile and conflict-affected states list, as of July 20, 2023.

panel 3 gives the number of FCS tax administrations by number of rounds completed. Although 30 FCS tax administrations have participated in at least one round of ISORA, only 7 have completed every round.

Figure 4. ISORA Participation of Tax Administrations in FCS and SDS

(Number of participating tax administrations)



Source: Authors' calculations.

Note: FCS = fragile and conflict-affected state; ISORA = International Survey on Revenue Administration; SDS = small developing state.

Small Developing States

SDSs are well represented among ISORA participants. Of the 34 IMF member countries defined as SDS, 31 completed ISORA 2023. Panel 2 of Figure 4 shows how participation of SDS tax administrations has strengthened over time. Over half of the SDS tax administrations that have participated in ISORA have completed every survey round (18 of 32; see Figure 4, panel 4).

C. ISORA Participants by Size and Scale of Operations

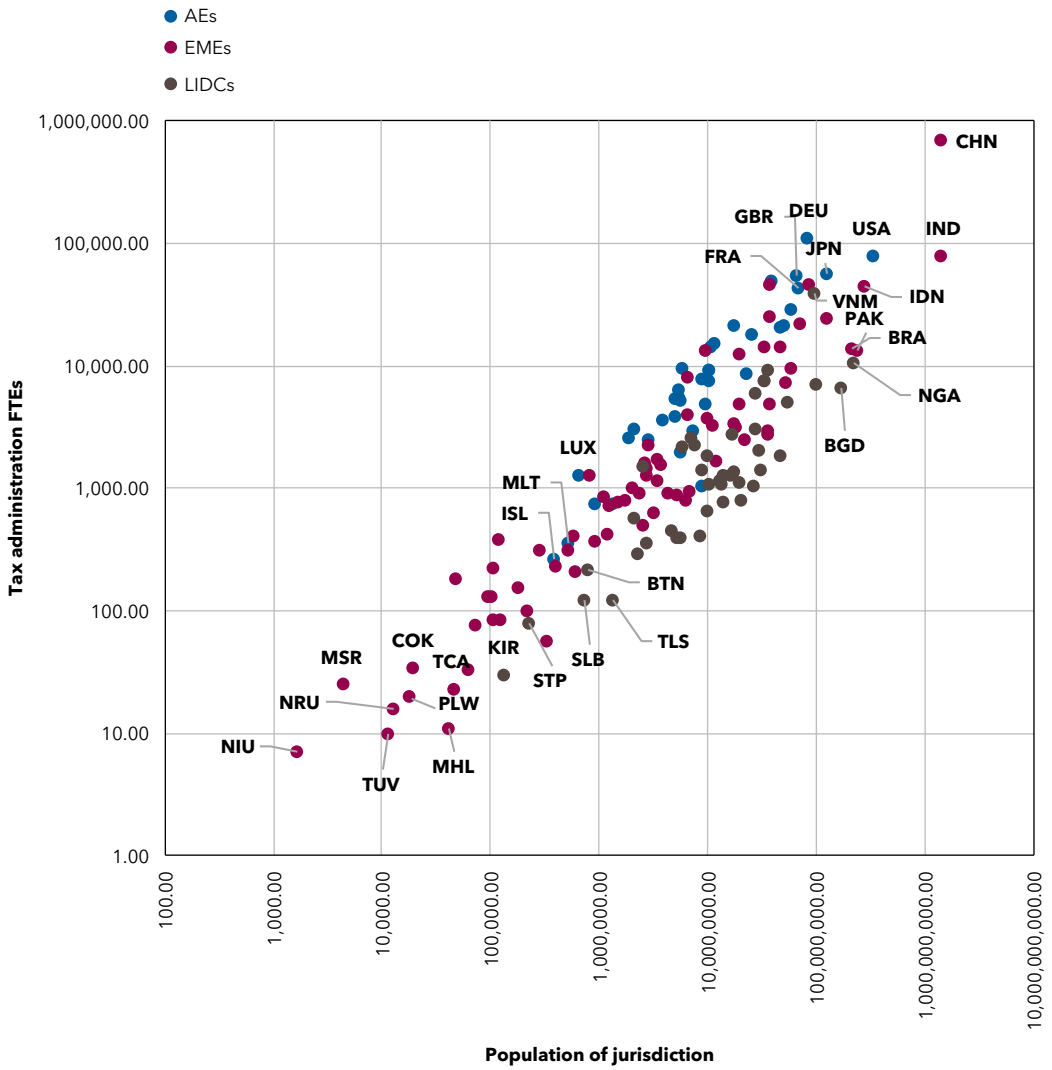
Administration Size

Scale can affect the effectiveness, efficiency, and accountability of a public administration entity. The scale of an administration may shape organizational structure (flatter hierarchies for smaller organizations), communication channels needed, the degree of staff specialization, the division of labor, and allocation of resources, among other characteristics.

ISORA uses full-time equivalents (FTEs) as a measure of the size of the tax administration. The survey recognizes that around 40 percent of tax administrations are joint with the customs administration (see Annex Table 3.1), and measures are taken to ensure that the estimates of FTEs for tax administration are obtained from the full staff complement of joint tax and customs administrations. Figure 5, using logarithmic scales for both axes, shows the range in FTEs reported by tax administrations in ISORA for 2022, together with the population size of the administration's jurisdiction.

The range in size of administrations completing ISORA supports comparative analysis of administrations of similar size. ISORA participants for FY 2022 spanned both 15 administrations with fewer than 100 FTEs and 19 with over 20,000 FTEs. Also apparent from the scatterplot is the range in size of administration for jurisdictions with similar populations (this is discussed further in Chapter 4).

Figure 5. Tax Administration FTEs and the Population Served (2022)



Sources: ISORA data for tax administration data; and population data that are sourced from the World Bank and country statistical offices where not available from the World Bank.

Note: FTE data provided by 37 AEs, 76 EMEs, and 42 LIDCs. The three-letter codes in the chart are ISO country codes. AEs = advanced economies; EMEs = emerging economic markets; FTE = full-time equivalent; FY = fiscal year; ISO = International Organization for Standardization; LIDCs = low-income developing countries.

Scale of Tax Administration Operations

The scale of operations of an administration may impact many of its features. There may be economies of scale, stronger imperatives to automate operations on a larger scale, and the need for more complex management and accountability mechanisms for larger-scale operations. ISORA captures information on taxpayer numbers and the number of tax returns received by the administration in a year, which may be used as proxies for the scale of operation.

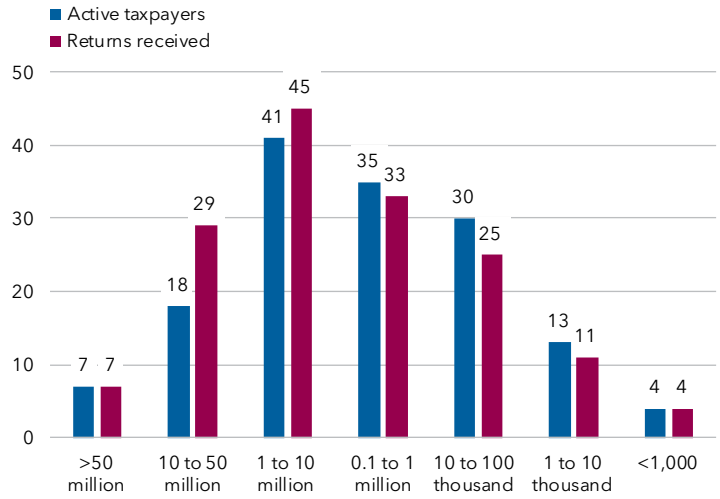
Taxpayers

ISORA collects data annually on taxpayer numbers.[10] The number of taxpayers depends on a range of factors besides the population size or labor force of a tax administration's jurisdiction, including tax policy and administrative requirements and their interaction with income distributions and the concentration of business activity. Figure 6 shows the range in active taxpayers reported by ISORA participants in 2022.

Seven administrations reported more than 50 million active taxpayers (the United States, China, Mexico, India, Vietnam, Germany, and France). On the other hand, 17 small island states served fewer than 10,000 active taxpayers.

Figure 6. Total Active Taxpayers and Returns Received (2022)

(Number of tax administrations reporting active taxpayers and returns received in the ranges shown)



Source: Authors' compilation.

Note: Taxpayer totals shown for 34 AEs, 76 EMEs, and 38 LIDCs, after dropping administrations that did not provide data for two or more taxes they administer. Taxpayer figures summed across available data for five tax types. Return totals shown for 37 AEs, 80 EMEs, and 37 LIDCs, after dropping administrations that did not provide data for two or more taxes they administer. Return figures summed across available data for four tax types. AEs = advanced economies; EMEs = emerging market economies; FY = fiscal year; LIDCs = low-income developing countries.

Tax Returns Received in 2022

ISORA collects the number of returns received by tax type.[11] Figure 6 also shows the number of returns received by administrations in FY 2022. Unsurprisingly, the number of returns received also ranges widely, and administrations receive a larger number of returns for processing than the number of active taxpayers.

[10] The survey covers taxpayers on register and active taxpayers in the FY for the most widely administered taxes: personal income tax (PIT), corporate income tax, value-added tax (VAT), and domestic excise. In addition, the number of employers who make returns on taxes withheld on PIT is also asked. Not all administrations provide a response for all the tax types they administer, and so the total of all taxpayers across the tax types is understated for some administrations.

[11] The 2023 ISORA survey obtained more accurate and complete figures for returns received than in previous rounds, because of a change in the way the question was asked and validated. The survey covers the returns for four tax types: PIT, corporate income tax, VAT, and employer withholding. Not all administrations provide a response for all the tax types they administer, and so the total of all returns across the tax types is understated for some administrations.

3. Information Available for Comparative Analysis

This chapter summarizes the types of information and question formats in ISORA and how these data may be compared across FYs. It compares ISORA's quantitative indicators with measures used in the Tax Administration Diagnostic Assessment Tool (TADAT) and shows the availability of measures by topic and economic group. Guidance on using the ISORA portal and annexes on accessing data and comparative aggregate statistics are also included.

A. Information Collected and Its Use in Comparative Analysis

Types of Information Collected

Information collected through the survey falls into three broad categories: characteristics of the administration, data on practices and structural foundations, and performance-related data. Data points collected across these categories may be of several different types:

- *Quantitative*—numbers (for example, number of audits completed, number of staff with less than five years of experience); responses in thousands of local currency units (for example, revenue collected, assessments raised through audits); percentages (for example, percentage of total revenue managed through large taxpayer office/program [LTO/P]).
- *Yes/No*—implemented in the survey either as a choice between "yes" and "no" (for example, has LTO/P), or a checkbox selection of applicable statements where a blank will mean "no" (for example, which factors are considered in including a taxpayer under a high-net-wealth individual (HNWI) program or unit).
- *Categorical*—implemented in the survey as a choice between two or more options (for example, how value-added tax [VAT] refunds are managed, whether various innovative technologies are in use, being implemented, or not used).
- *Free-text fields*—used infrequently and generally not placed in the public domain (for example, comments at the end of each form, which may be used to formulate footnotes to data points as needed).

Most quantitative data points are collected annually, whereas most data on practices and structural foundations are categorical or yes/no in nature and are collected periodically, as shown in Table 1.

The questionnaire is administered in such a way that all administrations are required to answer all survey questions that are applicable to their scope and practices. Where an administration is unable to provide a response to a numerical question, a symbol is used to indicate that no data are available, to distinguish it from a question that has been missed. Only fully completed surveys are included in the published ISORA data set. This facilitates comparative analysis. Data for FY 2022 span both annually and periodically collected data, providing an exceptionally rich snapshot of tax administration for the period.

Quantitative data points reflect measures that are expected to change year over year, supporting the development of annual time series for trend analysis. Examples of quantities expected to change annually include staff levels, revenue collections, registered taxpayers, and audits completed.

Comparative analysis of the large number of yes/no-type data points on practices and structural foundations may be facilitated by constructing thematic indices. For example, many data points are collected on the digitalization of core operations and services. To understand how a particular administration compares with its peers in respect of digitalization, it may be easier to consider an index comprising responses to questions on whether various e-services are offered and digital operations. This is the approach used in Chapter 5.

Using Quantitative Indicators in Comparative Analysis

ISORA collects quantitative indicators (most annually) covering thematic areas such as revenue collections, resources available to the tax administration, resource allocation, staff demographics, large taxpayer offices or programs, and operational metrics. These data may be used to study trends in tax administration, as well as in comparisons between administrations or groupings of administrations.

For comparisons between administrations or groupings thereof, the difference in the size of administrations and their operations needs to be considered. As shown in Figures 5 and 6, the staffing levels of tax administrations that contributed to the ISORA FY 2022 database ranged over five orders of magnitude, as do taxpayers managed by the administration. It is thus generally useful to construct dimensionless ratios for comparative analysis. For example, the number of taxpayers may be expressed as a percentage of population or labor force for more meaningful comparisons. Similarly, measures expressed in currency, such as the stock of arrears, may be expressed as a percentage of revenue collections or GDP.

Annex 2 presents examples of quantitative indicators available from ISORA data for FY 2022. The examples set out are often used to develop sets of quantitative performance measures and benchmarks for tax administration.

Some of these indicators correspond to those used in the TADAT. Each TADAT assessment applies to a single administration, whereas ISORA collects information from a range of administrations annually. Quantitative measures reported in ISORA by participating administrations can be mapped to the equivalent TADAT scores that are based on these quantitative measures to create a distribution of scores that an administration can use for benchmarking its performance. Box 1 provides examples of distributions of TADAT scores using ISORA data, also demonstrating the broad consistency in the picture of tax administration that emerges from the body of TADAT assessments and analysis of ISORA data.

Box 1. Consistency between International Survey on Revenue Administration (ISORA) and Tax Administration Diagnostic Assessment Tool (TADAT) Quantitative Measures

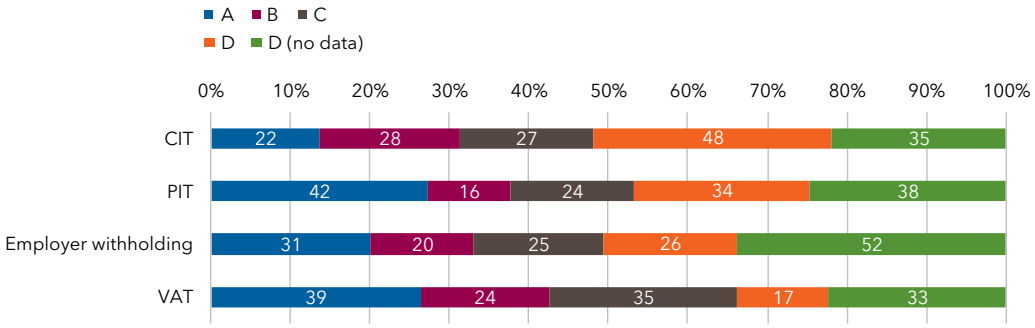
ISORA data are publicly available. Although many TADAT reports are not in the public domain, a publication reviewing a decade of TADAT assessments (Acedo and others 2024) provides aggregate statistics on TADAT indicator scores and the distribution of dimensional scores for 105 national-level TADAT assessments. For measures common to ISORA and TADAT, ISORA data values can be translated to TADAT scores. The resulting distribution of the ISORA-derived scores can be compared with the published TADAT distributions.

Examples of dimensional distribution scores using self-reported data in ISORA that can be compared in this way with TADAT assessments are presented in this box. The TADAT scores corresponding to the ISORA data are determined using the 2019 TADAT Field Guide (TADAT 2019).

On-Time Filing *(TADAT Indicator P4–12)*:

On-time filing rates are determined in ISORA for corporate income tax (CIT), personal income tax (PIT), employer withholding, and value-added tax (VAT) using administrations' responses on the number of returns expected and the number of returns received on time. The distributions of corresponding TADAT dimensional scores for fiscal year (FY) 2022 are as follows:

Box Figure 1.1. Distribution of TADAT Indicator P4-12 Dimensional Scores Derived from ISORA Data (FY 2022).



Source: Authors' calculations.

Note: ISORA collects on-time filing rates for the whole taxpayer population, but not large taxpayers separately. The score distribution shown assumes that large taxpayers' on-time filing rates will not reduce the TADAT scores. TADAT does not distinguish between a D-score associated with an on-time filing rate below 50 percent or a D because of missing or unreliable data. The distinction between Ds arising from a low on-time filing rate versus those associated with missing data points from ISORA data is presented to show the contribution that missing data make to D-scores. CIT = corporate income tax; ISORA = International Survey on Revenue Administration; PIT = personal income tax; TADAT = Tax Administration Diagnostic Assessment Tool; VAT = value-added tax.

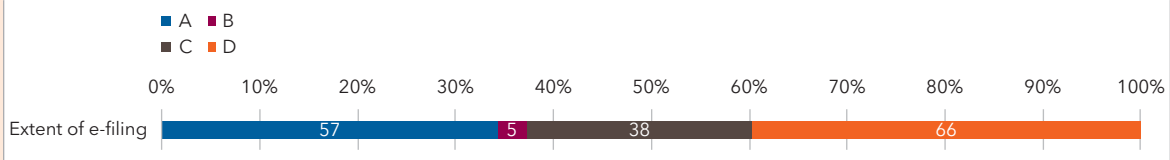
Key Points:

- On-time filing rates are generally better for PIT and VAT than for CIT and employer withholding, for both ISORA-based TADAT scores and the scores directly obtained in TADAT assessments.
- The slightly higher proportion of A- and B-scores in the ISORA-derived score distributions for all taxes is consistent with a higher proportion of AEs in ISORA data than in the TADAT assessment population.

E-Filing *(TADAT Indicator P4–14)*:

E-filing rates for CIT, PIT, employer withholding, and VAT are calculated using FY 2022 ISORA data reported by administrations on the number of returns received and return channel. These rates have been used to determine the corresponding TADAT score for the level of use of electronic filing. Following is the distribution of TADAT scores:

Box Figure 1.2. Distribution of TADAT Indicator P4-14 Scores Derived from ISORA Data (FY 2022).



Source: Authors' calculations.

Note: ISORA collects return information for the whole taxpayer population, but not large taxpayers separately. The score distribution shown assumes that large taxpayer e-filing will not reduce the TADAT scores. TADAT = Tax Administration Diagnostic Assessment Tool.

Key Points:

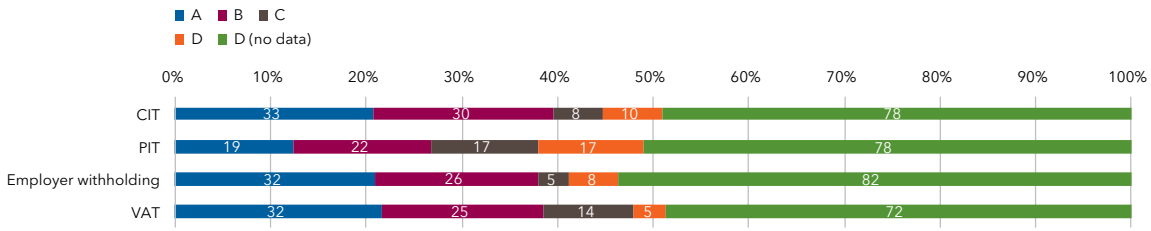
- The distribution based on ISORA data for FY 2022 is close to the published TADAT distribution.
- The higher proportion of scores above D in the ISORA-derived score distributions is again consistent with a higher proportion of AEs in ISORA data than in the TADAT assessment population.

- A second factor expected to shift the ISORA-based distribution toward higher scores is the reference period of the data used. All ISORA data points are for FY 2022, whereas the TADAT distribution includes assessments completed before 2019. Growth in the extent of e-filing is observed in ISORA time-series data and in the differences between first and repeat TADAT assessments.

On-Time Payment by Value *(TADAT Indicator P5–17)*:

On-time payment rates by value for FY 2022 are determined in ISORA for CIT, PIT, employer withholding, and VAT from administrations' responses on the value of payments due in the FY and the value of payments received on time. TADAT uses payment data for VAT as a proxy measure for on-time payment for all core taxes. The distributions of corresponding TADAT dimensional scores for FY 2022 are derived for all core taxes from ISORA data using the equivalent of the TADAT scoring criteria that are applied to VAT. Although TADAT does not make this distinction, Ds arising from low on-time payment rates by value are shown separately from Ds that arise because of missing data points.

Box Figure 1.3. Distribution of TADAT Indicator P5-17 Dimensional Scores Derived from ISORA Data (FY 2022).



Source: Authors' calculations.

Note: ISORA collects on-time payment rates for the full taxpayer population, but not large taxpayers separately. The score distribution shown assumes that large taxpayers' on-time payment rates do not reduce the TADAT scores. TADAT does not distinguish between a D-score associated with an on-time filing rate below 50 percent or a D because of missing or unreliable data. The distinction between Ds arising from a low on-time filing rate versus those associated with missing data points from ISORA data is presented to show the contribution missing data points make to D-scores. CIT = corporate income tax; ISORA = International Survey on Revenue Administration; PIT = personal income tax; TADAT = Tax Administration Diagnostic Assessment Tool; VAT = value-added tax.

Key Points:

- The distribution for VAT based on ISORA data for 2022 resembles the published TADAT distribution, with over 50 percent D-values.
- The higher proportion of A- and B-scores in the ISORA-derived score distribution for VAT is consistent with a higher proportion of AEs in ISORA data than in the TADAT assessment population.
- As observed in TADAT, on-time payment rates (for non-D-scores) tend to be higher than on-time filing rates in ISORA.

B. Availability of Quantitative Data

The Importance of Quantitative Data

Performance management requires performance measurement at regular intervals, and performance measurement in turn relies on the management of tax administration records and the ability to extract relevant statistics. ISORA collects quantitative data points that support the calculation of performance measures used widely by tax administrations, as described in the previous section.

To complete ISORA, administrations must provide a response to all questions that are applicable to their scope and practices. In the case of numerical inputs, administrations may indicate that the data are unavailable using a symbol that distinguishes their response from a zero value or a question that is not applicable. Examples of questions that may not be applicable are questions about particular tax types and approaches to particular taxpayer segments: If the administration collects fewer tax types or does not have a large taxpayer office, there are fewer responses to provide.[12]

It is thus possible to examine the degree of completeness of responses to numerical questions (for example, expected returns for the main taxes, number of on-time returns for each tax type) by question and by administration. The ability to construct comparative numerical indicators such as those in Annex 2 or Box 1 (for example, on-time filing rate for each of the main taxes) depends on the availability of the relevant numerical inputs. The analysis in Box 1 demonstrates that not all administrations provide the data needed to determine useful performance measures.

There are many factors that play a role in the availability of numerical data, and, in general, it is not possible to tell from ISORA alone why an administration does not provide certain data. In some cases, administrations provide feedback that they do not use a particular measure (for example, the categories used in the survey for the allocation of staff by function) or are unable to provide a particular measure (for example, VAT refunds, because of their internal systems). There are many other possible reasons for the nonavailability of numerical data. Highly decentralized administrations (for example, China and Germany) may find it challenging to provide organization-wide statistics requested in ISORA, as data are managed regionally. Some administrations are not permitted to provide data unless it has already been published elsewhere.

A recent review of tax administration performance based on TADAT assessments points to weaknesses in performance monitoring and that, where numeric indicators in TADAT are used, many administrations have received poor ratings because of lack of data (Acedo and others 2024). If administrations do not use data requested in ISORA for internal planning or management purposes, they may find it more difficult to provide these data. Conversely, the provision of numerical data points that show consistency over time suggests data management practices that support effective performance management.

It is useful to examine data availability by indicator for at least two reasons: First, the information is valuable for users of comparative statistics from ISORA, and second, topics for which relatively few administrations provide data highlight tax administration functional areas where measurement can be improved.

Examining data availability by topic for individual administrations shows their areas of relative strength and weakness in respect of their data management systems. Tracking data availability over time can contribute to identifying areas in which progress is being made and where improvement is still needed.

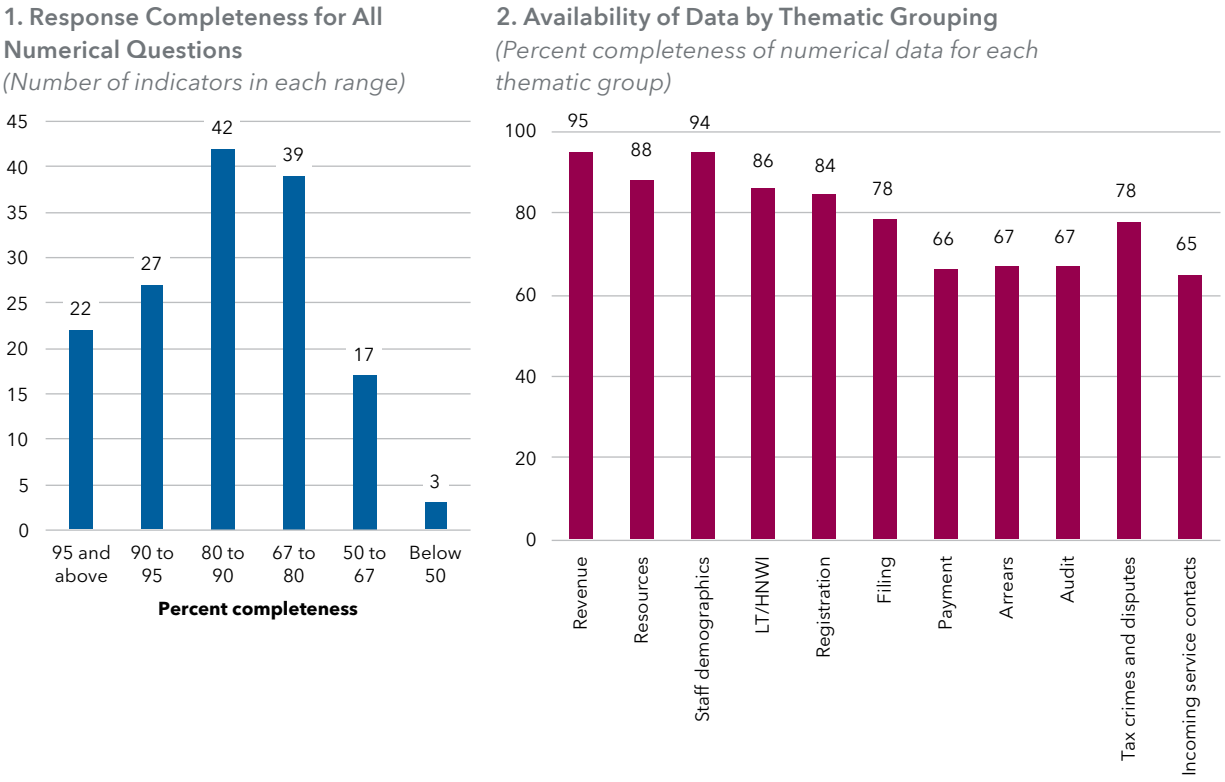
Data Availability by Indicator

The level of numerical responses to each of the 150 questions in ISORA 2023 requiring numerical responses may be expressed as a percentage of the total of numerical responses and "no-data" responses. Although there is the facility to indicate missing or unavailable data, administrations may instead mistakenly use a zero. For most numerical questions asked in ISORA, it is clear that a zero response is incorrect (for example, administrations cannot have a zero operational budget), and in these cases, it would be counted as a missing value. However, in other cases, a zero may be possible (for example, the number of paper-based tax returns). The analysis of the completeness of numerical indicators presented here takes "mistaken zeros"

[12] This generally makes the completion of ISORA less burdensome for tax administrations in smaller states, as they may not collect all (or any) core tax types, or have dedicated units or programs for managing large taxpayers or high net wealth individuals.

into account, as well as whether the indicator is applicable to an administration.[13] Figure 7 shows the distribution of completeness of responses to numerical questions and the completeness by thematic grouping.

Figure 7. Completeness of Numerical Inputs by Thematic Grouping of Indicators



Source: Authors' calculations using ISORA data.
Note: HNWI = high-net-wealth individual. LT = large taxpayers.

Key Points:

- There is a wide range in data availability by indicator, ranging from 100 percent to less than 50 percent for 3 of 150 numerical indicators.
- One-third of the quantitative indicators are 90 percent or more complete, whereas almost two-thirds are over 80 percent complete. Caution may be needed in interpreting the results for indicators for which many administrations have not provided a numerical response. These indicators are discussed in Annex 3.
- Questions on *revenue collections* and *staff demographics* are generally the most complete. FY 2022 data availability levels in these areas are 22 and 9 percentage points higher, respectively, than for the equivalent sets of indicators collected for 2014 in the first round of ISORA.
- Concerningly, the highest proportion of missing data is seen for questions on *payments*, *arrears*, and *audit*, all critical areas for effective tax administration. Improvement in these areas has been more limited; for example, for arrears, 63 percent of the equivalent arrears data points for 2014 were available, compared with 67 percent for 2022. Data input required in the survey on arrears and audit since the first two rounds has been streamlined and clarified, so the limited improvement suggests that this is an area worth deeper investigation. Audit and the management of arrears may be contentious in some jurisdictions, so the lack

[13] Zeros are assumed to be valid responses for the following indicators: all staff demographics apart from staff levels at beginning and end of year, individual taxpayers managed under a large taxpayer office/program, filing channels, electronic payments, arrears associated with state-owned enterprises, criminal cases, disputes, and incoming service channels.

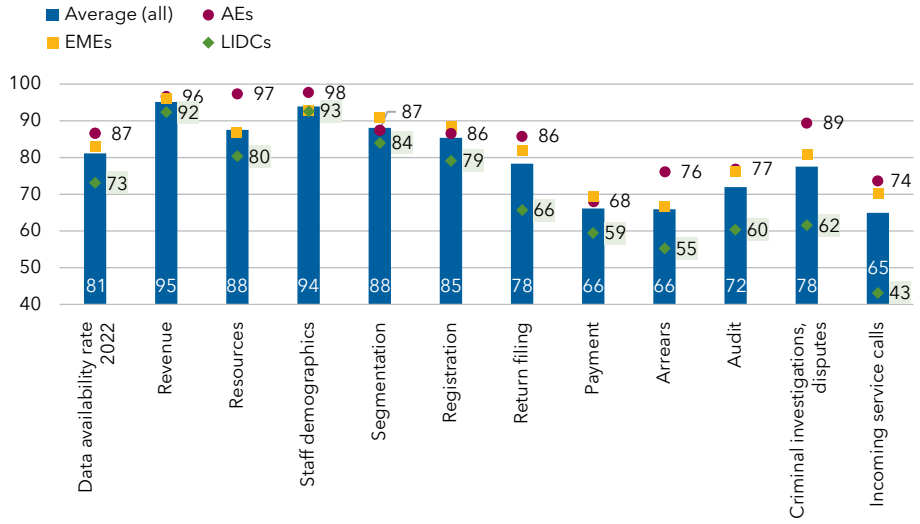
of data may be associated with a reluctance to be transparent about these metrics, or it could stem from a general lack of availability of these data within the administration.[14]

Data Availability by Tax Administration

Overall data availability rates have been compiled for each participating tax administration by topic. Figure 8 shows quantitative data availability for tax administrations by economic group for 2022.

Figure 8. Data Availability Rate by Economic Grouping

(Average data availability rate in percent)



Source: Authors' analysis.

Note: AEs = advanced economies; EMEs = emerging market economies; LIDCs = low-income developing countries.

Key Points:

- Administrations within AEs generally exhibit higher data availability rates than those in EMEs, and, in turn, EMEs provide more numerical data than LIDCs.
- However, for registration and segmentation, EMEs are more likely to provide numerical inputs than AEs. In the case of registration, this may be because of differences in tax registration approaches, where AEs are able to rely on existing administrative records compiled by other public entities.
- For all groups, the availability of data for revenue collections and staff demographics is high. These are also the areas where the smallest differences are seen between economic groupings in the completeness of data.
- The largest spread in the averages for economic groups is seen in measures associated with core tax administrative functions—return filing, arrears, audit, cases, and service channel usage.
- LIDCs show the greatest relative weakness in the provision of data on filing, arrears, audit, disputes, and incoming service channels used by taxpayers. They are also weaker in providing information on resources, which need to be monitored for effective and efficient management of the organization.

The averages for groups disguise the large variation in data availability rates of administrations within each group. Table 3 lists the administrations with the highest data availability rates in ISORA 2023. These administrations span all economic groups and regions and include SDS administrations.

[14] The analysis of 10 years of TADAT assessments identified the management of payments, arrears, and audit as domains for improvement.

Table 3. Administrations with Data Availability Rates of over 95 Percent for FY 2022

AEs	EMEs		LIDCs
Hong Kong	Albania	Argentina	Nigeria
Greece	Armenia	Aruba	Sierra Leone
Ireland	Barbados	Belize	Uganda
Lithuania	Bulgaria	Dominican Republic	
Malta	Eswatini	Georgia	
The Netherlands	Kosovo	Malaysia	
Portugal	Maldives	Mongolia	
Slovak Republic	Peru	St. Lucia	
Slovenia	St. Vincent and the Grenadines	Trinidad and Tobago	
	Ukraine		

Source: Authors' analysis.
Note: AEs = advanced economies; EMEs = emerging market economies; FY = fiscal year; LIDCs = low-income developing countries.

Comparisons between and among Data for Different FYs

ISORA intentionally collects time-series data, and a key use of the data set is to compare the characteristics, practices, or performance of a tax administration or a group of tax administrations for different periods. Many users of ISORA data develop statistics, often averages or medians, to make comparisons between specific FYs, or to discern trends over time.

In this context, it is important to note that changes observed in averages or medians of numerical measures for groups of tax administrations for different periods may be driven by several factors. The main aim in undertaking comparisons over time is generally to identify (aggregate) changes because of movement in the values of the same survey participants, using their provided data for all the time periods under consideration.

However, other factors also contribute to changes observed in the statistics for groupings of tax administrations over time. Examples of factors that may affect group statistics for different reference periods include the following:

- ISORA is a voluntary survey, and whereas most participants complete the survey every year, the participants in each round of the survey differ.
- Some administrations that participated in all the survey rounds being studied may not have provided data for the specific numerical question(s) of interest for every study period.
- When comparing statistics over time between survey rounds using groupings with membership defined by the characteristics of the administration or their jurisdiction, there is an additional factor at play: The profile of the ISORA participant could have changed between rounds. For example, a participant's characteristics could have led to classification in a group (say, LIDC) in one survey period, but it may meet the definition for another group (say, EME) in the next reference period being used.

Further, in each successive survey, changes may be made to questions to improve the consistency or accuracy of the responses. In most cases, these changes are minor and will not materially affect comparisons of fixed sets of administrations between years. However, in some cases, even small changes to the phrasing of the question, the way a question is asked (for example, changes to opening questions or subquestions

that follow), or the sequencing of questions, can impact individual participant responses and render results less comparable over time periods than would have been the case had the question remained identical.

Changes in the environment in which tax administrations operate also necessitate some changes to questions in each round of ISORA or the way they are asked. These factors mean that some caution needs to be exercised in comparing statistics for aggregate groups—and even individual tax administrations—over time.

Comparative analysis of the periodic ISORA data thus presents some challenges: Many questions asked about FY 2022 were last asked about FY 2017, when the full set of ISORA questions (annual and periodic) was administered. Although periodic questions are largely related to tax administration practice and structure and responses tend to change less frequently than quantitative measures, there are many possible reasons for a change in response to a periodic question over five years.

In preparing for ISORA 2023 (FY2022), the ISORA partners' technical working group reviewed all periodic questions previously asked about FY 2017. Some questions were discarded and new ones were added. Many were changed in some fashion, for example, wording changes to eliminate ambiguities and inconsistencies; movement of questions to a different part of the survey, resulting in association with different issues and completion by different people in the tax administration; and changes to the structure of questions (for example, from yes/no to checkbox, or from single-topic questions to multiple-topic), altering the context for the response. ISORA was still relatively when data were collected for FY 2017, and many improvements made to regular questions over that time were transferable to the periodic questions.

Finally, much training and assistance have been provided to participants over the past five years, resulting in higher quality responses in ISORA 2023.

C. Accessing and Using ISORA Data

ISORA data are publicly available on the ISORA portal, https://isoradata.org.[15] Annex 4 provides guidance on how to access data for individual tax administrations, ISORA questionnaires and guidance to respondents, and publications in which ISORA data have been used and analyzed.

As discussed (and illustrated) in this chapter, comparative analyses by groupings of administrations are also useful. Annex 5 presents a selection of comparative aggregate statistics for various groupings of tax administrations, calculated from the published data for individual tax administrations.

[15] The original ISORA portal, https://data.rafit.org, was decommissioned in the course of 2025.

4. High-Level Findings on Tax Administration in 2022

This chapter provides high-level findings from examining ISORA 2023 data, largely focused on comparisons among groupings of the 166 tax administrations that completed the survey. Most analysis is by the economic groupings used by the IMF—AEs, EMEs, and LIDCs. As in previous analysis, the most striking differences observed in performance are generally between the tax administrations of AEs and others.

A. Broad Characteristics of Tax Administrations

Broad characteristics of tax administrations, such as their institutional arrangements, scope in respect of revenues collected and nonrevenue roles, resource levels, and resource allocation, are important to consider when undertaking benchmarking or tailoring reforms to enhance an administration's effectiveness. This section provides a picture of these tax administration features in 2022, together with comparisons drawing on data from earlier years. Data tables in Annex 5 support analysis by other groupings than those covered in comparisons presented here.

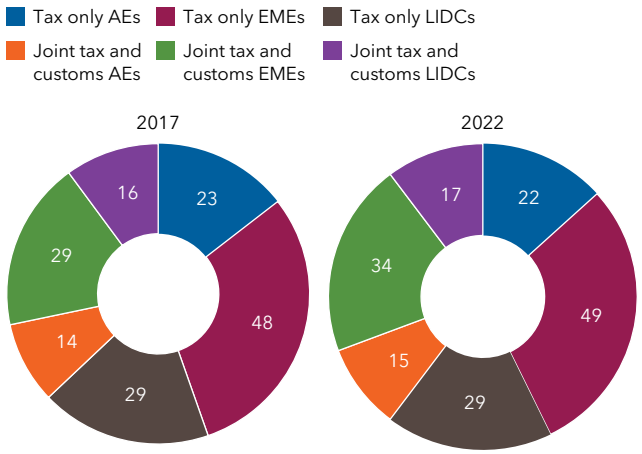
Institutional Arrangements

ISORA probes aspects of the institutional arrangements for tax administration. Two key aspects are examined: whether tax is administered in the same organization as customs and whether the administration operates as a unified semiautonomous body.[16] Figure 9 compares the distributions of tax only and joint tax and customs organizations by economic group for 2017 with FY2022, and the frequency of the combinations of tax only/joint tax and customs and within-ministry/semiautonomous structures.[17]

Figure 9. High-Level Comparison of Institutional Arrangements (2017 and 2022)

1. Number of Tax Administrations That Are Joint with Customs Administrations

(Number of tax administrations in each category)



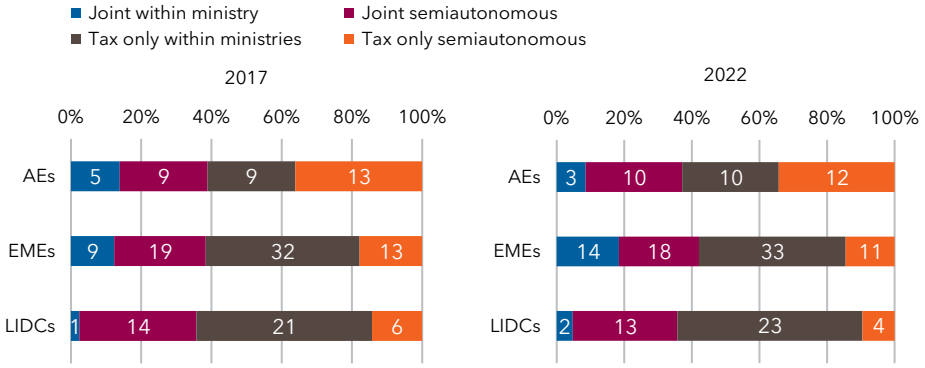
[16] The issue of whether tax and customs are administered jointly is straightforward and accurately reported in ISORA. Concerning whether or not the tax administration operates as a unified semiautonomous body (with or without a board), the ISORA question allows for a broad interpretation of semiautonomy limited only by a requirement for the head to report to a minister. For FY 2022, approximately 40 percent of ISORA participants indicate semiautonomous operation. Using a more specific definition of management autonomy based on the existence of a decision-making management board, an IMF study (Crandall and others 2024) suggests that approximately 20 percent of tax administrations have significant management authority based on an empowered board. For a more detailed analysis of semiautonomous bodies and revenue authorities, see Crandall and others (2024).

[17] Administrations may also elect in answering ISORA to describe their institutional framework as "other," that is, neither within a ministry (or ministries) nor within a semiautonomous body. The administrations that choose this option do so for a variety of reasons and are not included in the analysis in panel 2 of Figure 9, as they do not form a homogenous group.

Figure 9. High-Level Comparison of Institutional Arrangements (2017 and 2022) (Continued)

2. Number of Tax Administrations by Institutional Arrangements

(Number of tax administrations in each category)



Source: Authors' calculations.

Note: All participants in the survey are included in panel 1 (159 for FY 2017 and 166 for FY 2018). Tax administrations self-reporting as "Other" (8 for 2017 and 13 for 2022), that is, those not included in the named categories, are included in panel 2 data. AEs = advanced economies; EMEs = emerging market economies; FY = fiscal year; LIDCs = low-income developing countries; semiautonomous = unified semiautonomous body with/without board; within ministry = single or multiple directorates within ministry.

Key Points:

- There has been a small increase in the percentage of tax administrations that are administered jointly with customs administrations—40 percent of ISORA respondents in 2022, against 37 percent in 2017.
- Much of the distributional shift toward joint administrations can be attributed to the increase in ISORA participants, five of which are EMEs with joint administrations.
- Among AEs, most tax administrations—almost two-thirds (63 percent)—were reported to be semiautonomous bodies in 2022, whereas in EMEs and LIDCs, semiautonomous bodies constitute 38 percent and 40 percent of administrations, respectively.
- Across all economic groups, joint tax and customs administrations are more likely to operate as semiautonomous institutions than as directorates within ministries.
- The proportions of within-ministry and semiautonomous body administrations did not change much over the five-year period, with some change in the distributions associated with differences in the sets of administrations that completed the surveys for 2017 and 2022.

Scope

The *scope* of a tax administration, spanning the range of taxes and other revenues collected, as well as other responsibilities, varies across administrations. Typically, a tax administration collects up to four general categories of revenue: (1) main taxes (PIT, CIT, VAT); (2) other taxes; (3) social security contributions (SSCs); and (4) nontax revenues. In addition, many tax administrations perform nontax roles.

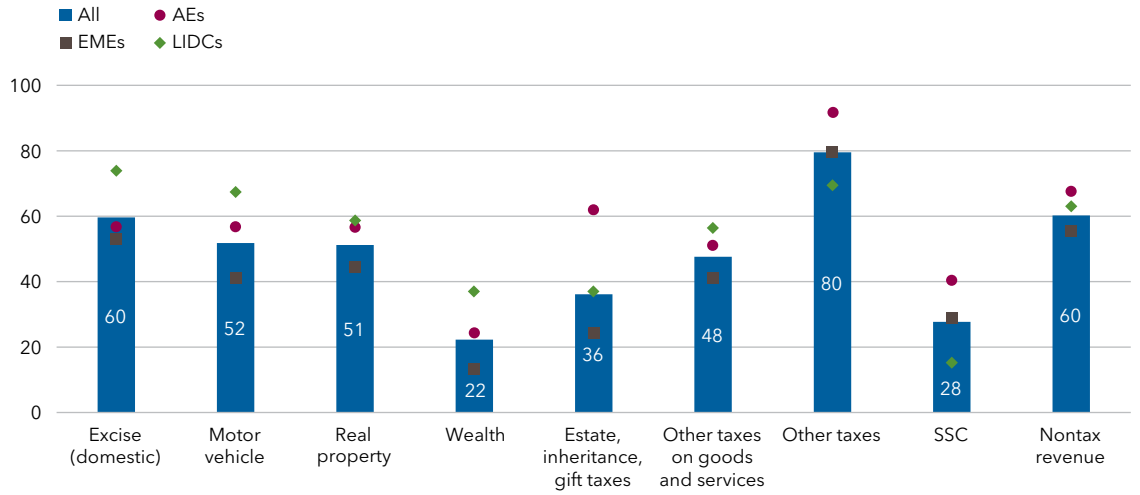
Taxes and Other Revenues Collected

Key Points—Main Taxes:

- Almost all ISORA respondents collect PIT, CIT, and VAT (159, 160, and 148 of 166), with 87 percent (144 of 166) collecting all three.
- In almost all jurisdictions administering PIT (155 of 159), employers withhold taxes on behalf of employees (pay as you earn [PAYE]).

The percentages of tax administrations collecting other taxes, SSCs, and nontax revenues are shown in Figure 10 by economic grouping.

Figure 10. Revenue Types Collected by Tax Administrations in Addition to Main Taxes (2022)
(Percentage of administrations that collect revenue types)



Source: Authors' calculations.
Note: AEs = advanced economies; EMEs = emerging market economies; LIDCs = low-income developing countries; SSC = social security contribution.

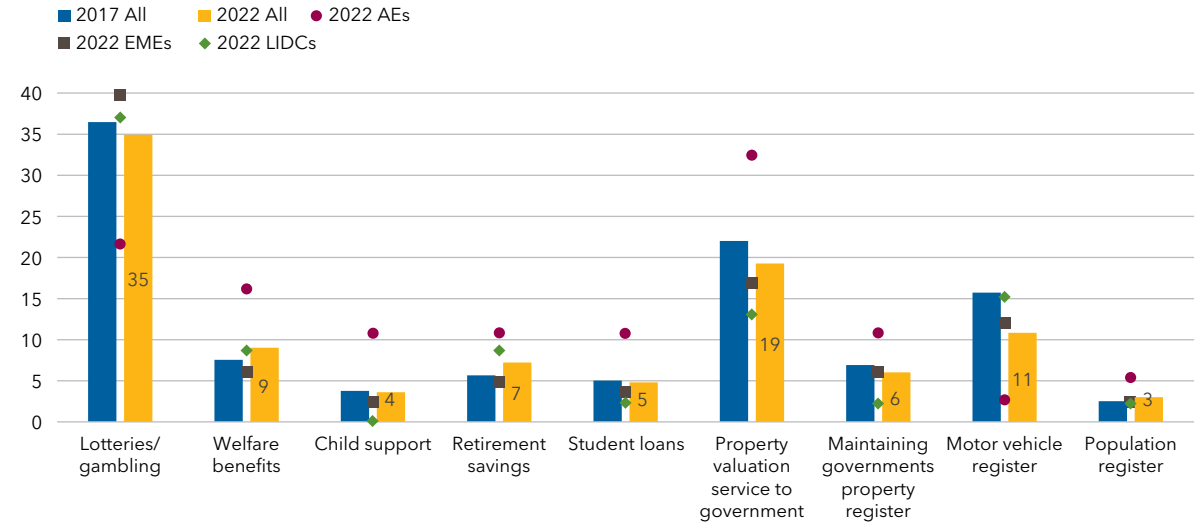
Key Points—Other Revenues:

- There have not been major shifts in the tax types collected over the past five years.
- The frequency of collection of tax types other than the main taxes varies from 60 percent (domestic excise) to 22 percent (wealth taxes).
- The relative frequencies of collection of various taxes by administrations in the various economic groups have also not changed significantly over time; For example, a higher percentage of administrations in LIDCs collect wealth taxes than administrations in AEs, and the reverse is true in respect of estate, inheritance, and gift taxes.
- Eighty percent of tax administrations report collecting additional tax types beyond those listed in the ISORA questionnaire.
- Three-fifths of administrations collect nontax revenues of some kind. By way of comparison, property taxes are collected by just over half the administrations that completed ISORA 2023 (51 percent), and SSC by 28 percent of all administrations (40 percent of AEs). Previous IMF papers have made the point that nontax revenues usually benefit specific government programs or activities and should be properly resourced when initially introduced so as not to direct resources away from core tax activities (Crandall, Gavin, and Masters 2021, p. 40).
- It is also noted that the inclusion of nontax revenue responsibilities in the mandates of national tax collection authorities can, from a tax administration perspective, result in inefficiencies, since the related activities are not necessarily a direct function of tax administration. However, from a broader government point of view, the tax administration may be the most efficient and effective delivery instrument for the revenue program.

Nontax Roles Performed by Tax Administrations

Figure 11 sets out the nontax roles performed by tax administrations in 2017 and 2022.

Figure 11. Nontax Roles of Tax Administrations (2017 and 2022)
(Percentage of administrations with various roles)



Source: Authors' calculations.
Note: AEs = advanced economies; EMEs = emerging market economies; LIDCs = low-income developing countries.

Key Points:

- The incidence of nontax roles did not change much between 2017 and 2022.
- Over one-third of administrations have a role in administering lotteries or gambling, and this is the role that tax administrations in LIDCs or EMEs are most likely to hold.
- Administrations in AEs, on the other hand, are more likely to provide a property evaluation service to the government than to perform any other nontax role. In general, these administrations are also more likely to have roles associated with the provision of government benefits (for example, welfare benefits, child support) than their counterparts in LIDCs and EMEs.
- As observed for the collection of nontax revenues, the performance of nontax roles may lower tax administration efficiencies, while simultaneously being the most efficient agent for this role from a broader government perspective.

Revenue Collections

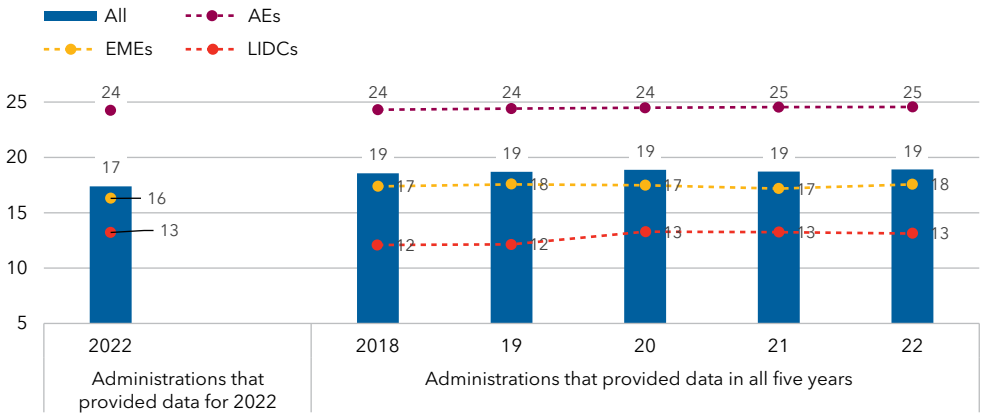
Figure 12 depicts total net revenue collected by tax administrations[18] in relation to total government revenue and to GDP by economic grouping. Statistics are provided for all administrations that reported complete revenue data for FY2022. In addition, the time series is also provided for FYs 2018 to 2022, a period that spans the height of the COVID-19 pandemic in 2020. For more comparable statistics over this period, the data provided by 116 administrations that provided all revenue data in each of these five years are used.

[18] Both tax revenues and nontax revenues recorded in ISORA by the tax administration are included in the total net revenue collection of the tax administration. In jurisdictions with a VAT, VAT on imports is included in net VAT collected, although this is generally collected through the customs administration.

Figure 12. Revenue Collected by Tax Administrations

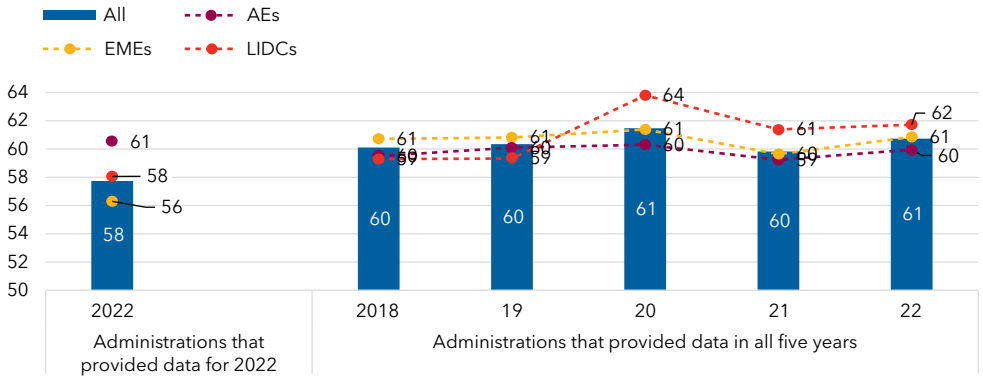
1. Net Revenue Collected

(Percent of GDP)



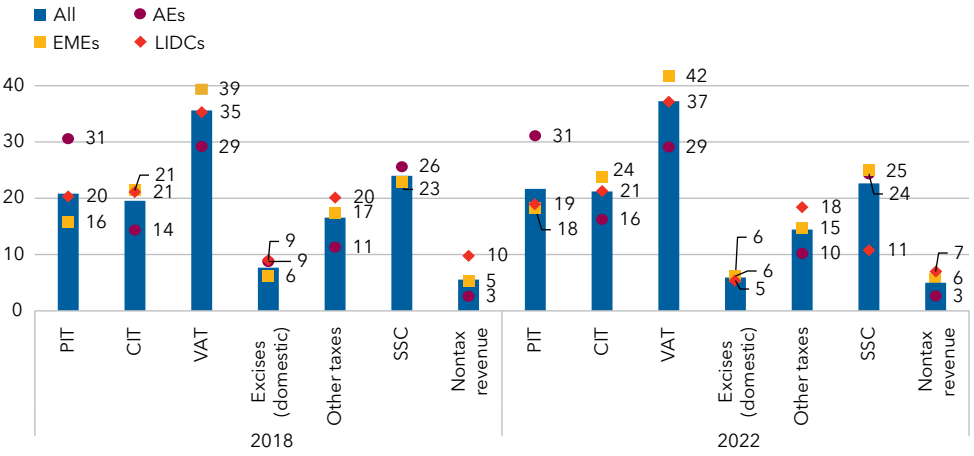
2. Net Revenue Collected in Relation to Total Government Revenue

(Percent of government revenue)



3. Contributions by Revenue Type to Collections by Tax Administrations

(Percent of net revenue collected)



Sources: Authors' calculations using government revenue and GDP from the IMF's *World Economic Outlook* database; and revenue collected by tax administrations from ISORA.

Note: Nontax revenue excludes SSC. Statistics for the 2018–22 time series are derived from data for 20 LIDCs, 61 EMEs, and 35 AEs. In panel 3, percentages may add up to more than 100, as percentage contributions exclude administrations that do not collect a revenue type. In FY 2018, only two LIDCs provided SSC collection figures. AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; LIDCs = low-income developing countries; PIT = personal income tax; SSC = social security contribution; VAT = value-added tax.

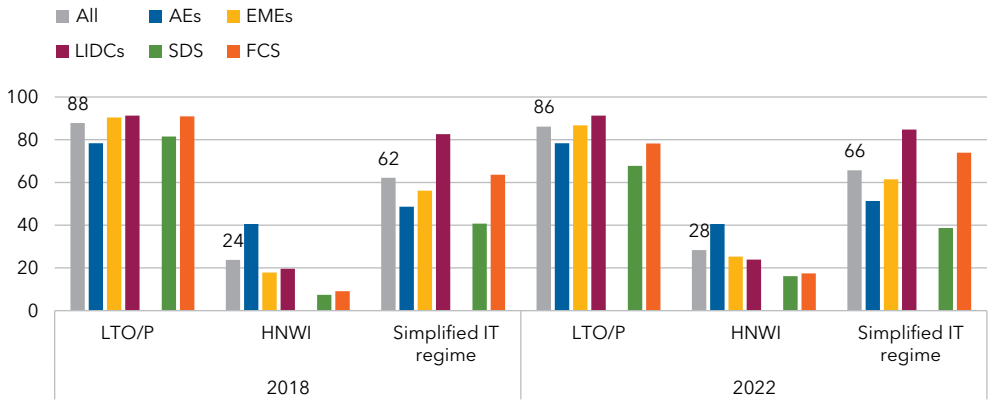
Key Points:

- Tax administrations in AEs collected revenues amounting to almost a quarter of GDP on average, whereas administrations in EMEs and LIDCs collected less (17 percent and 13 percent of GDP, respectively).
- Despite the wide difference in collections as a percent of GDP, collections by tax administrations in all three economic groupings average around 60 percent of total government revenue.
- Although GDP and government revenues fell because of the pandemic, revenue collected by tax administrations as a percent of revenue or of GDP did not drop in FY 2020 or FY 2021. In fact, revenue collected by administrations in all economic groupings, and especially those in LIDCs, was less adversely affected in FY 2020 than other government revenue sources, thus making up a larger percentage of total revenue in the FYs that overlapped with calendar year 2020.
- The broad pattern of contributions by revenue type did not shift significantly between FY 2018 and FY 2022 (Figure 12, panel 3). VAT constitutes the largest contribution to collections by tax administrations among both EMEs and LIDCs, whereas for AEs the contribution of PIT is slightly larger than that of VAT. CIT makes a larger contribution to collections in EMEs and LIDCs than in AEs.
- SSCs make up about a quarter of the collections by tax administrations in AEs and a little less in EMEs. As seen in Figure 10, few tax administrations in LIDCs collect SSCs, and for those that do, the contribution is considerably smaller at around 10 percent of their total collections. However, nontax revenue (excluding SSC) constitutes a nonnegligible portion of revenue collected by the tax administration in LIDCs, and to a lesser extent in EMEs.

Tailored Responses to Taxpayer Segments

Questions are asked annually in ISORA about whether tax administrations have a dedicated unit or program for large taxpayers (LTO/P) and for HNWIs. Administrations were also asked about simplified regimes for income tax in 2022. Responses to the existence of these specialized units or approaches are shown in Figure 13.

Figure 13. Tax Administrations with LTO/P, HNWI Program, and Simplified Tax Regime(s) (2018 vs 2022)
(Percent administrations reporting LTO/P, HNWI program, Simplified Tax Regime)



Source: Authors' compilation.

Note: AEs = advanced economies; EMEs = emerging market economies; FCS = fragile and conflict-affected state; HNWI = high-net-wealth individual; IT = income tax; LIDCs = low-income developing countries; LTO/P = large taxpayer office/program; SDS = small developing state.

Key Points:

- Around 90 percent of EMEs and LIDCs have an LTO/P, with the figure slightly lower at 78 percent for AEs.
- The apparent small decline in administrations with an LTO/P between 2018 and 2022 is largely driven by the change in participation of SDS in ISORA, as several small Pacific island states that do not have an LTO/P

completed the survey for 2022 but not for 2018. In tax administrations with few staff, dedicating staff to specific taxpayer segments may not be practical.

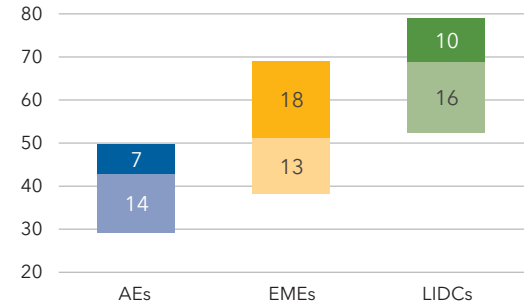
- HNWI programs are more frequently found in AEs, but there has been slow growth in the number of HNWI programs in EMEs and LIDCs, including countries that are SDSs and FCSs.
- Simplified income tax regimes are more prevalent in LIDCs than in EMEs or AEs. They are also offered in three-quarters of FCSs. These regimes support the inclusion of small businesses in the tax system by lowering the compliance burden, making them valuable to tax administrations in LIDCs and FCSs, where many small businesses may operate on the formal–informal boundary.
- Although many administrations have LTO/Ps, there are large variations in their size, function, resourcing, and operating metrics, making it difficult to discern any "typical" characteristics of units and programs dedicated to large taxpayers only. The variation in LTO/P characteristics and range in key metrics are highlighted in Box 2.

Box 2. Variation across Large Taxpayer Offices/Programs (LTO/Ps)

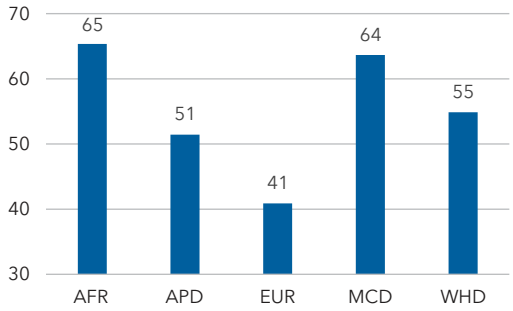
LTO/Ps contribute significantly to revenue collections, especially among LIDCs. The range in contribution varies: The range for the middle 50 percent of LIDCs (interquartile distance) is 26 percentage points. The revenue associated with the LTO/P is impacted by the economic structure of the country and business size distribution, as well as the LTO/P's effectiveness.

Box Figure 2.1. Revenue Collections Through LTO/P by IMF Economic Group and Region

1. Percent Revenue Collected through LTO/P by Economic Group
(Second and third quartiles, in percentage points)



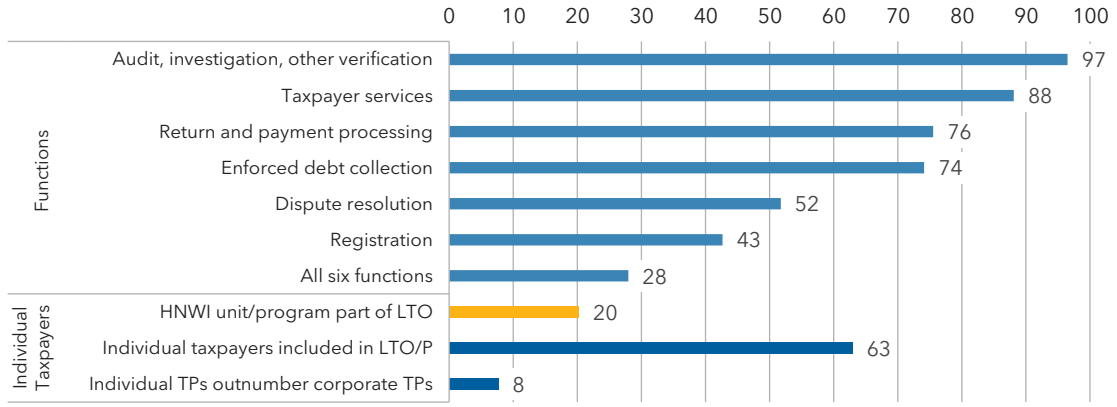
2. Percent Revenue Collected through LTO/P by Region
(Average percent)



Source: Authors' calculations.
Note: AEs = advanced economies; AFR = African Department; APD = Asia and Pacific Department; EMEs = emerging market economies; EUR = European Department; LIDCs = low-income developing countries; LTO/P = large taxpayer office/program; MCD = Middle East and Central Asia Department; WHD = Western Hemisphere Department.

LTO/Ps do not all perform the same set of functions. The administration's high-net-wealth-individual program is included in 20 percent of LTOs. Just over one-third of LTO/Ps do not include individual taxpayers at all.

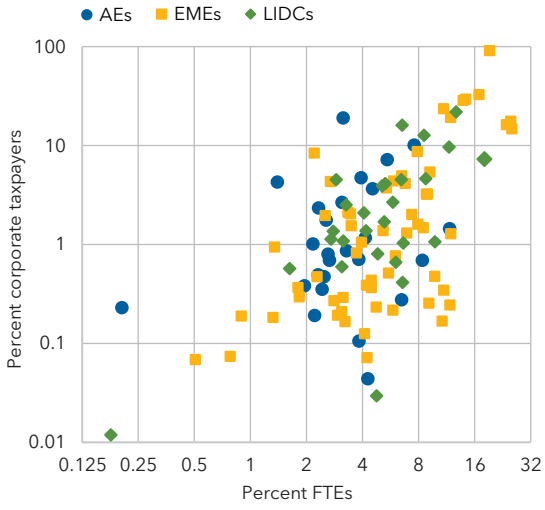
Box Figure 2.2. LTO/P Functions and Other Characteristics
(Percent LTO/Ps with function/characteristic)



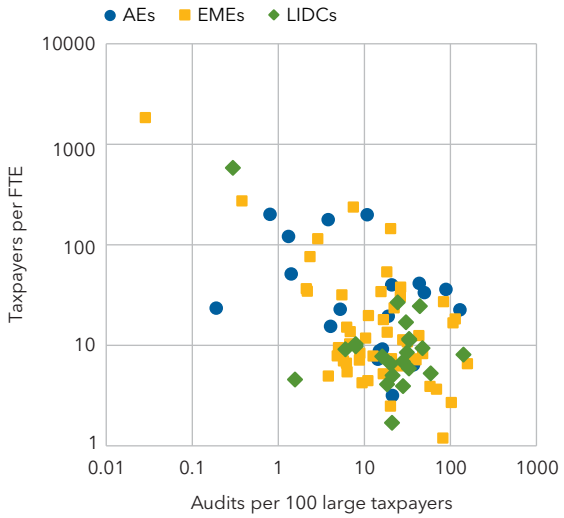
Source: Authors' compilation.
Note: HNWI = high-net-wealth individual; LTO = large taxpayer office; LTO/P = large taxpayer office/program; TP = taxpayer.

Box Figure 2.3. LTO/P Resources and Audit Coverage

1. LTO/P Resources and Coverage
(Percent)



2. Large Taxpayer-to-FTE Ratio and Audit Coverage
(Number of taxpayers, number of audits)



Source: Authors' calculations.
Note: AEs = advanced economies; EMEs = emerging market economies; FTEs = full-time equivalents; LIDCs = low-income developing countries; LTO/P = large taxpayer office/program.

Given that the properties and metrics of LTO/Ps differ significantly across countries and lack consistent patterns and relationships, it is not possible to develop meaningful benchmarks or define through analysis a universal set of "ideal" LTO/P characteristics applicable to all contexts.

B. Tax Administration Resources

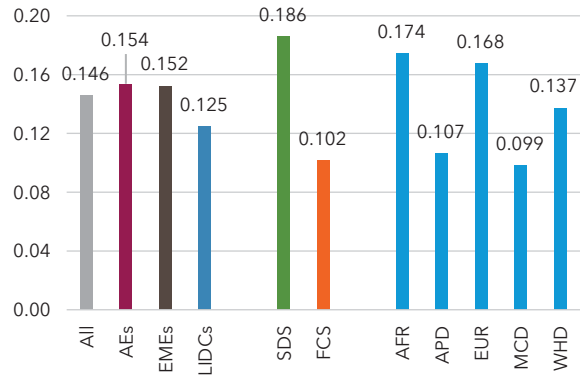
Tax administrations participating in ISORA operate in jurisdictions that vary by five orders of magnitude in the size of the population or labor force (see Figure 5). As shown earlier, the scope of tax administrations differs in respect of both revenue and nonrevenue roles. Unsurprisingly, large variations in tax administration resource levels exist. Despite these large differences, comparative ratios by economic group reveal clear resourcing patterns.

Expenditure on Operations and Information and Communications Technology (ICT)

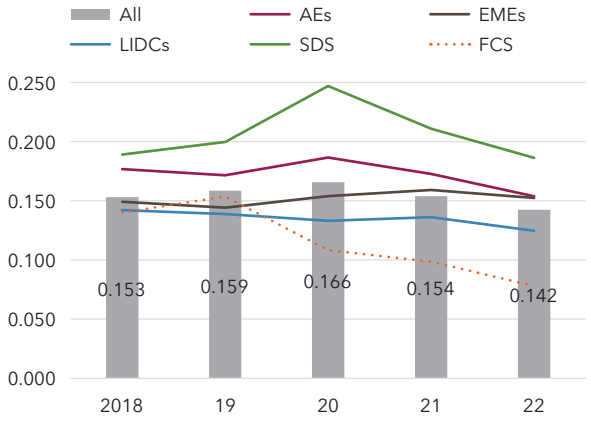
ISORA requests data on annual operational expenditure, salaries, and spending on ICT.[19] ICT expenditure may span both operational and capital costs. Generally, operational expenditure changes smoothly year over year, except when there are major changes in the administration's structure or roles. On the other hand, ICT expenditures are observed to be volatile. The volatility of ICT spending, together with the multiyear nature of development of ICT systems, suggests value in analyzing ICT expenditures over a period, rather than for a single year. Figure 14 presents an overview of tax administration expenditures for various groups of interest and by region.

Figure 14. Operational Expenditures of Tax Administrations

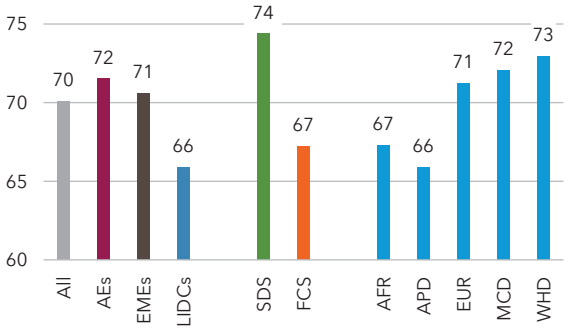
1. Operating Expenditure (2022)
(Medians, in percent of GDP)



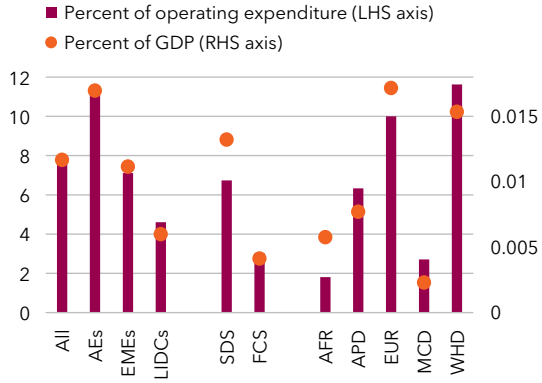
2. Operating Expenditure 2018-2022, for Administrations That Provided Data Every Year
(Medians, in percent of GDP)



3. Salary Expenditure (2022)
(Averages, in percent of operating expenditure)



4. ICT Expenditure (2018-2022)
(Medians, using country average over 2018 - 2022)



Sources: Authors' calculations using GDP from *World Economic Outlook*; and all other data from ISORA.

Note: Some tax administrations operating with Ministries may underestimate expenditure as it is difficult to identify all operational costs within the ministry's broader expenditure. Statistics for operating expenditure in 2022 derived from data for 36 LIDCs, 73 EMEs, 37 AEs, 29 SDSs, and 15 FCSs. Data points by region: AFR: 27, APD: 34, EUR: 40, MCD: 10, and WHD: 35. Statistics for the 2018 to 2022 time series are derived from data for 22 LIDCs, 56 EMEs, 35 AEs, 19 SDSs, and 6 FCSs. Statistics for salary expenditure derived from 35 LIDCs, 74 EMEs, 37 AEs, 29 SDSs, and 15 FCSs. Data points by region: AFR: 27, APD: 34, EUR: 40, MCD: 10, and WHD: 35. Statistics for ICT expenditure derived from data for 16 LIDCs, 44 EMEs, 36 AEs, 16 SDSs, and 4 FCSs. Data points by region: AFR: 16, APD: 18, EUR: 33, MCD: 7, and WHD: 22. AEs = advanced economies; AFR = African Department; APD = Asia and Pacific Department; EMEs = emerging market economies; EUR = European Department; FCSs = fragile and conflict-affected states; FY = fiscal year; ICT = information and communications technology; LIDCs = low-income developing countries; MCD = Middle East and Central Asia Department; SDSs = small developing states; WHD = Western Hemisphere Department.

[19] ISORA focusses on tax administration, and so for organizations that administer both tax and customs measures are taken in the survey to obtain estimates of the expenditures and human resources utilized in tax administration alone, where administrative records do not readily support distinguishing between resources applied to tax administrations and to customs administration.

Key Points:

- Measured relative to GDP, AEs generally allocate a larger operating budget to tax administration than do EMEs and LIDCs (Figure 14, panel 1): The median allocation for AEs is 23 percent higher (measured relative to GDP) than the median allocation to LIDCs.
- FCSs generally allocate even less funding to tax administrations than LIDCs. SDSs allocate more than other groupings studied (again, measured relative to GDP), in line with economies of scale expected in the administration of tax.
- The regional picture of operational expenditure highlights regional differences. For example, AEs within Asia generally have lower operational budgets than AEs in Europe, and LIDCs in Asia have lower budgets than their LIDC counterparts in sub-Saharan Africa. However, funding allocations to AEs and to LIDCs within Asia show the same global pattern: AEs are generally better funded, as a percent of GDP.
- The time series in panel 2 shows lower levels of operational expenditure in 2022 than in 2018, with a slight peak in 2020. For many countries, GDP fell in FY 2020 during the COVID-19 pandemic, but the cost of administering taxes would not have declined. The trends for all groupings (bar EMEs) hint at increased efficiency within this five-year time frame and suggest that deeper exploration might be worthwhile, ideally using data over a longer period of tax administration costs over time. Note that the trend for FCS is based on data from only six countries and, as such, should be interpreted with caution.
- Operational costs are dominated by the cost of salaries (panel 3), with the median for all groups examined falling in the range of 66 percent to 74 percent of operational costs. Staff salaries in administrations in SDS consume more of the operational budget than in other larger administrations, with a median of 84 percent of operational cost.
- ICT expenditure is higher for tax administrations in AEs (panel 4).[20] This is true whether measured relative to GDP or to operational costs.

Human Resources

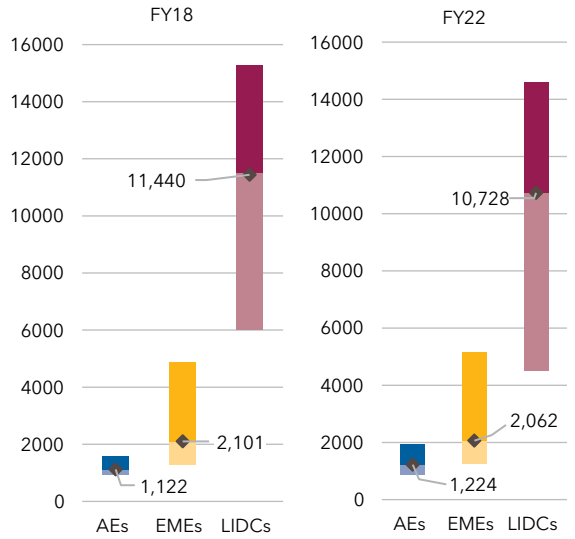
As covered in the preceding section, staff costs of tax administrations account for around 70 percent of their operating costs. ISORA collects information on the number of FTEs and their allocation to key functions in the administration. Figure 5 shows how the size of the administration varies with the population of the economy served by the administration. From that chart, it is also clear that there is considerable variation in the number of FTEs of administrations serving populations of similar size, and the relatively higher ratio of FTEs to population in smaller countries is also evident.

Here, the size of the tax administrations, measured in terms of FTEs, is examined more closely in relation to the population served and the size of the labor force. Figure 15 shows citizens per FTE and persons in the labor force per tax administration FTE for the three economic groups.

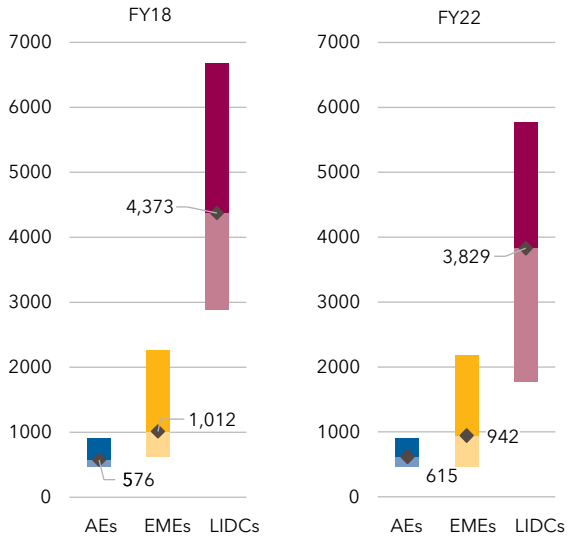
[20] Chapter 5 highlights that advanced economies, in general, use digital technologies more extensively than their counterparts in emerging market economies (EMEs) and low-income developing countries (LIDCs).

Figure 15. Tax Administration Human Resources (2018 and 2022)

1. Population per FTE
(Interquartile range, median for group)



2. Labor Force per FTE
(Interquartile range, median for group)



Sources: Authors' calculations. Population and labor force data from the World Bank and national statistical offices; other data from ISORA.

Note: AEs = advanced economies; EMEs = emerging market economies; FTE = full-time equivalent; FY = fiscal year; LIDCs = low-income developing countries.

Key Points:

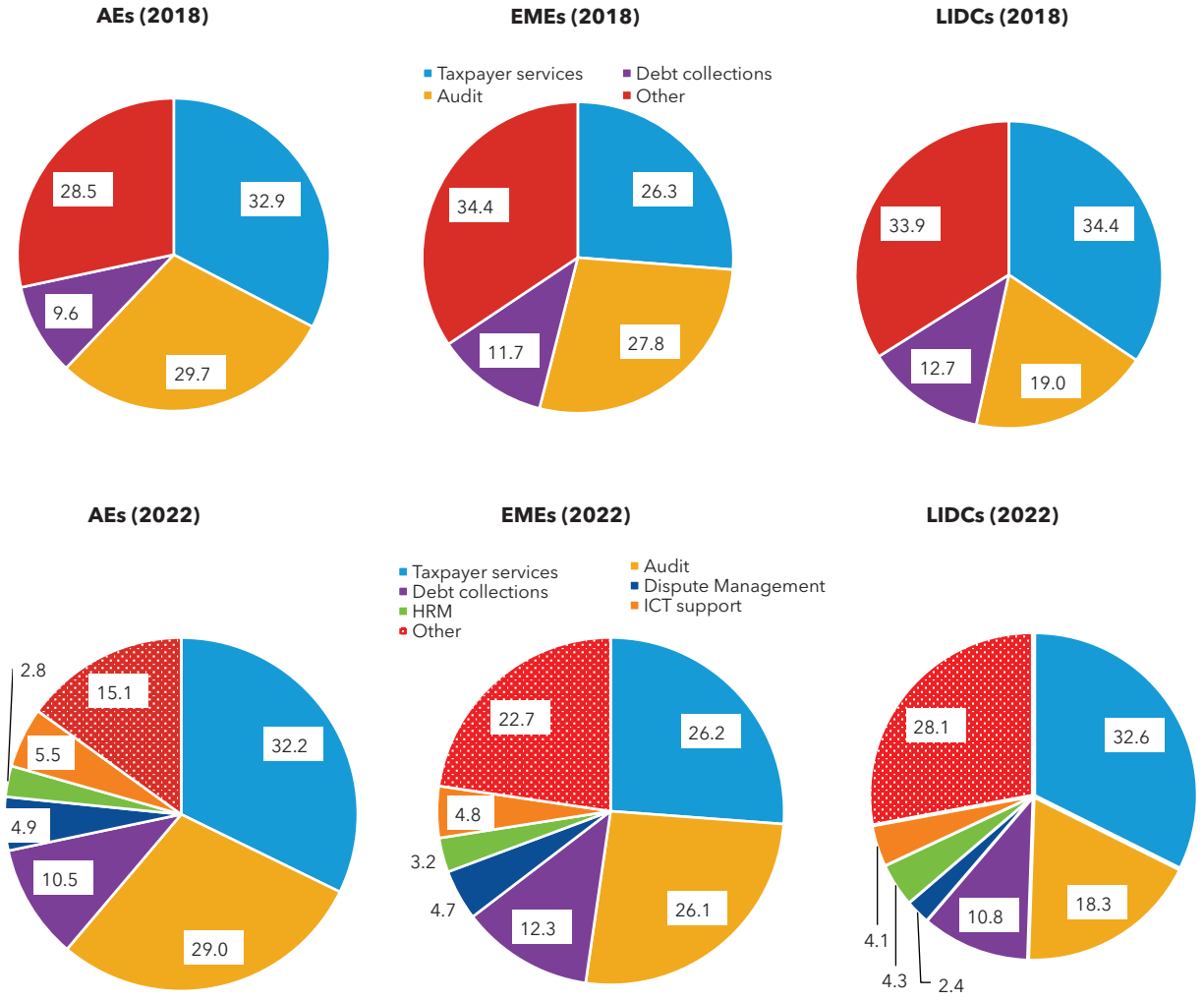
- Measured in relation to population, tax administrations in LIDCs have roughly one-tenth of the FTEs in AE tax administrations, whereas administrations in EMEs have roughly half the FTEs of AE administrations.
- A similar pattern is observed in the statistics on labor force per FTE, with AE tax administrations better resourced using this measure too. For each staff member (FTE) in an LIDC tax administration (somewhere near the median), there are approximately eight times the number of labor force participants than is the case for their counterpart in an AE, whereas for each staff member in an EME administration, there are twice the number of labor force participants than is the case for their AE counterpart.
- Even within each economic grouping, the range of FTE resources available to the tax administration varies greatly: The ratios at the 75th percentile are three to four times the ratio at the 25th percentile.
- Over the five-year period, it appears that the resources of AEs have not kept pace with population or labor force growth, whereas for LIDCs, the opposite is true.

Allocation of Staff by Function

ISORA collects data on the allocation of staff resources, measured in FTEs, to key functions. This provides useful comparative data for senior managers of tax administrations, who are faced with the task of allocating staff across the range of activities the administration needs to perform to be effective in collecting revenues due in terms of the law.

Over the period 2018 to 2021 ISORA focused on three key functional areas: (1) registration, returns and payment processing, and other taxpayer services; (2) audit, investigation, and other verification; and (3) enforced debt collection. As this left a relatively large residual proportion of staff in some cases, three additional functions were added to the 2023 survey: (4) dispute management; (5) ICT support staff; and (6) HRM. Figure 10 shows the average allocation of staff to functions by economic grouping for 2018 and 2022.

Figure 16. Allocation of Staff by Function (2018 and 2022)
(Percent staff, measured as FTEs, allocated to each function)



Source: Authors' compilation.

Note: AEs = advanced economies; Audit = audit, verification, and other investigation; EMEs = emerging market economies; FTE = full-time equivalent; HRM = human resources management; ICT= information and communications technology ICT support = excludes ICT resources included under other functions; LIDCs = low-income developing countries; Taxpayer services = registration, return and payment processing, and other services.

Key Points:

- For all three economic groupings, the average percentage of staff allocated to services, audit, and debt collection changed little between 2018 and 2022.
- Tax administrations in AEs and LIDCs allocate close to one-third of their staff to taxpayer services, despite differences in digitalization levels. On average, EME administrations allocated almost equal proportions of staff to taxpayer services and to audit (26 percent) in 2022.
- As observed in earlier analyses, tax administrations in AEs, in general, allocate a higher proportion of their staff (29 percent in 2022) to audit and verification than do LIDC-based tax administrations (19 percent in 2022). AEs also have higher staffing levels relative to the population and labor force served, further strengthening their ability—relative to LIDCs—to take action to reduce noncompliance.

- The proportion of staff associated with "Other" functions, that is, those not associated with one of the functions listed in ISORA, fell for all three groupings from 2018 to 2022, with the three additional categories considered. Nevertheless, the proportion of staff shown as "Other" remained highest among LIDCs.
- Although the three categories introduced in 2022 collectively accounted for 12 percent to 13 percent of staff across all groups, the breakdown among these groups is distinctly different:
  - AEs allocate the highest percentage of staff to ICT support (5.5 percent), followed by EMEs (4.8 percent), and then LIDCs (4.1 percent).
  - AEs also allocate the highest percentage of staff to dispute management (4.9 percent), with LIDCs allocating only 2.4 percent on average to this important function.
  - On the other hand, LIDCs dedicate 4.1 percent of their staff to HRM, which exceeds the HRM allocation of EMEs (3.2 percent) and AEs (2.8 percent).

C. Core Tax Administration Performance Indicators

Typical performance indicators associated with core tax administration processes that are used in diagnostics such as TADAT and in performance monitoring and evaluation are considered here. These indicators were also discussed in previous papers on ISORA.

Registration

Taxpayer registration is a critical function for tax administration, as it provides the foundation for taxpayers to comply with tax obligations and enables the administration to monitor compliance. The number of registered taxpayers—both individuals and businesses—is expected to grow with entries into the labor market and with economic growth. In addition, there will be churn in economically active individuals and businesses, requiring administrations to be able to identify which registered taxpayers are economically active in each period. ISORA uses a definition of active taxpayers as "*…those for whom a tax consequence arises during the fiscal year (tax liability or tax refunds without any obligation to file) or that for any other purpose file a tax return).*"

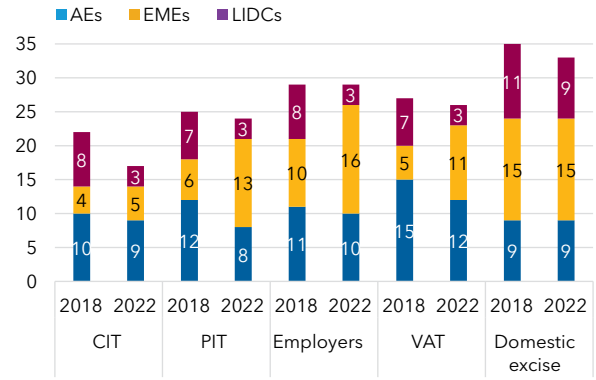
Requirements for employees who pay income tax through the deduction of PAYE vary between jurisdictions. For this reason, and because of the wide range in the ratio of active PIT taxpayers to the labor force observed in earlier rounds of ISORA, a question was added from FY 2021 onward: *"Are most employees that have tax deducted from their salary by the employer required to register for personal income tax?"* For 2022, taxpayer numbers can be examined separately for administrations that answered "yes" or "no" to this question.

To compare the active taxpayer population over time and between economies of different size, the ratio of taxpayers to labor force is analyzed for personal income tax (PIT), corporate income tax (CIT), employers that withhold tax from employees, VAT, and domestic excise.

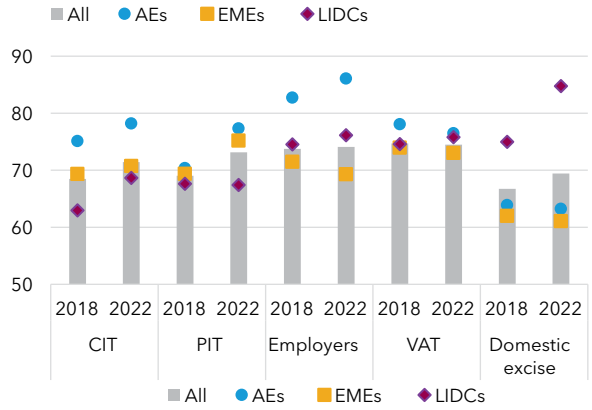
As in previous analyses of ISORA data, many administrations provide identical figures for taxpayers on register and active taxpayers, implying that no inactive taxpayers are included in their taxpayer registers. In some cases, administrations take a decision to include only active taxpayers on the register, but difficulty in determining whether a taxpayer is active or not may also contribute to these occurrences, as the administration may not have the information required to make the determination accurately to meet the ISORA definition. Figure 17 depicts the number of administrations that provide identical figures for active taxpayers and taxpayers on register, together with the percent of active taxpayers on the register, by tax type, for administrations that provide distinct figures for taxpayers on register and active taxpayers. Figure 18 shows the size of taxpayer registers by tax type and economic group.

Figure 17. Active Taxpayers in Relation to Taxpayers on Register

1. Administrations Reporting Equal Figures for Taxpayers on Register and Active Taxpayers
(Number of administrations)



2. Active Taxpayers as Percent of Taxpayers on Register
(Average, in percent)



Source: Authors' calculations.

Note: Administrations with active taxpayers equal to registered taxpayers are excluded from consideration in the statistics presented in panel 2; AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; Employers = employers who withhold tax and other contributions from their employees; LIDCs = low-income developing countries; PIT = personal income tax; VAT = value-added tax.

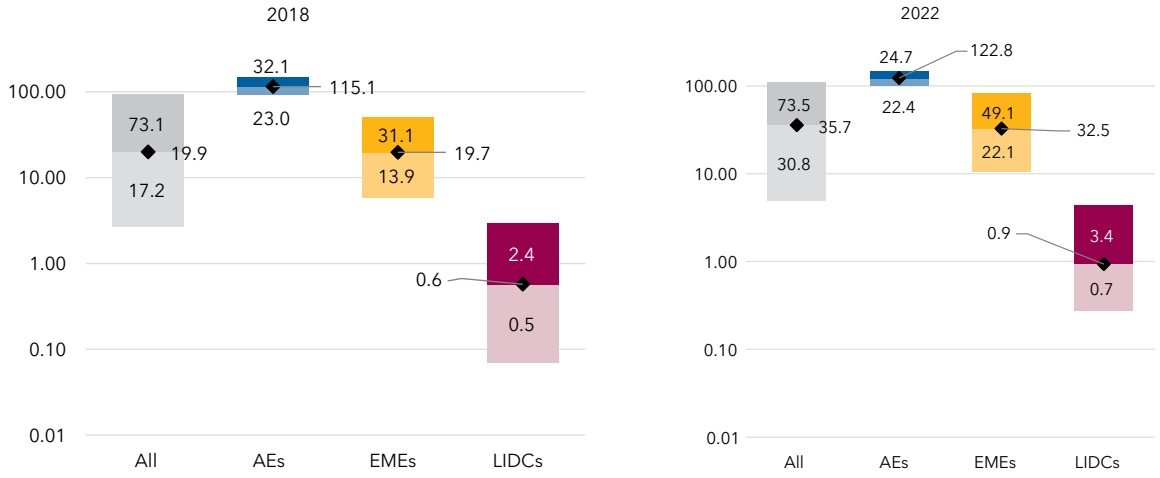
Key Points:

- Administrations within AEs are more likely to provide identical figures for taxpayers on register and active taxpayers than either EMEs or LIDCs for all tax types. Within AEs, tax administrations are more likely to have access to other reliable public administration registers that provide information on actual and potential taxpayers.
- Domestic excise registration figures provided by ISORA participants are most likely to be equal; that is, all taxpayers on the domestic excise register are active.
- Between 2018 and 2022, there was a notable decline in the number of LIDC tax administrations that did not distinguish between inactive and active taxpayers across all five tax types.
- For all tax types apart from domestic excise, active taxpayers make up a higher proportion of taxpayers on register in AEs. In the case of domestic excise, LIDCs have a lower proportion of inactive taxpayers on register. For most countries, there are far fewer domestic excise taxpayers than there are CIT or VAT taxpayers (see Figure 18), so maintaining the domestic excise register should be easier than for larger registers.
- Overall, the percentage of active taxpayers increased between 2018 and 2022. This is also true for most tax types when disaggregated by economic group, except for a marginal decline in PIT for LIDCs, declines in active employers, VAT, and domestic excise for EMEs, and a small decline among AE administrations for VAT.

Figure 18. Active Taxpayers by Tax Type and Economic Group

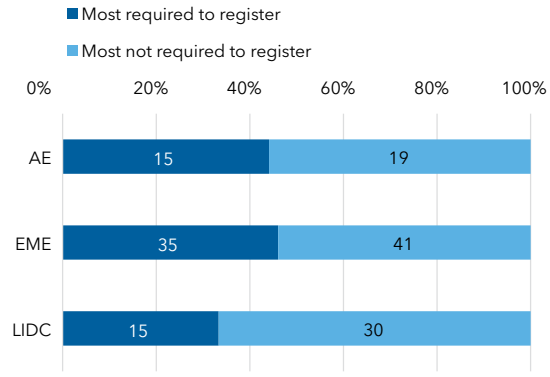
1. Active PIT taxpayers in Relation to Labor Force

(Taxpayers in percent of labor force: interquartile distance, median)



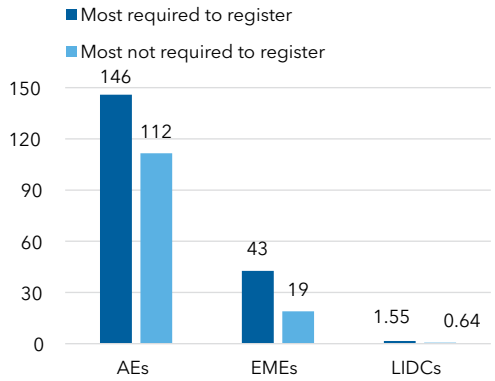
2. Administrations Requiring/Not Requiring Most Employees to Register for PIT (2022)

(Number of administrations)



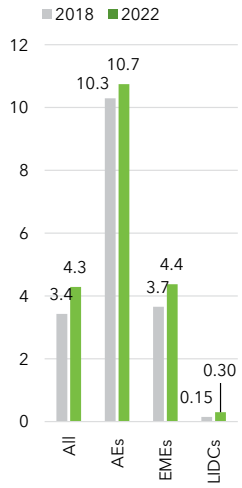
3. Active PIT taxpayers in Relation to Labor Force (2022)

(Taxpayers in percent of labor force, median)



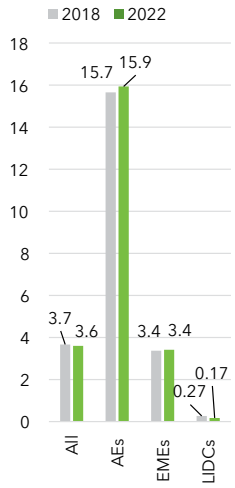
4. Active CIT Taxpayers

(Median, in percent of labor force)



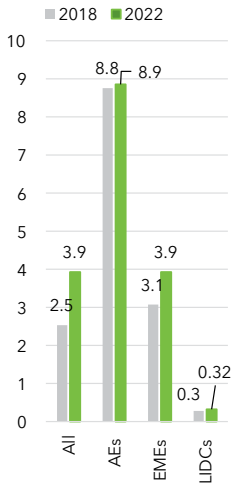
5. Active VAT Taxpayers

(Median, in percent of labor force)



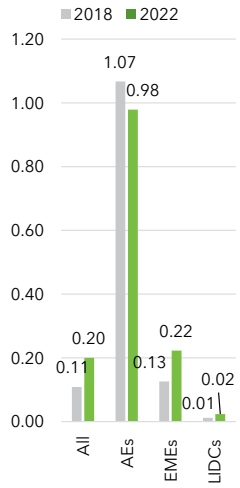
6. Active Employers

(Median, in percent of labor force)



7. Active Domestic Excise Taxpayers

(Median, taxpayers per thousand labor force)



Sources: Labor force data from World Bank databank and national statistical offices; all other data from ISORA.

Note: AEs = advanced economies; active employers = employers who withhold tax and other contributions from their employees; CIT = corporate income tax; EMEs = emerging market economies; LIDCs = low-income developing countries; PIT = personal income tax; VAT = value-added tax.

Key Points—Active PIT Taxpayers:

- There is a large range in the ratio of active PIT taxpayers to the labor force (Figure 18, panel 1), with the median ratio for AEs roughly five times as large as that of EMEs and a hundred times that of LIDCs. In most AEs, active taxpayers exceed the number of people in the labor force. On the other hand, within LIDCs, active taxpayers typically make up less than 1 percent of the labor force.
- Active taxpayers grew appreciably faster than the labor force over the five-year period of 2018 to 2022, especially within EMEs and LIDCs.
- In all three economic groups, in most countries, most employees are not required to register for PIT (Figure 18, panel 2). Among LIDCs, most employees are required to register as taxpayers in one-third of all countries.
- When viewing the active-taxpayer-to-labor force ratio for administrations that do/do not require most employees to register, the median for administrations that do not require most employees to register is lower, as expected. This is also true for each economic group.
- There is a large difference in the case of LIDCs in the two groups, but less so between the two AE groups. Some likely reasons behind this are the presence in AEs of a larger proportion of retirees in the active PIT population, as well as incentives for salary earners with lower incomes to register even if not required to do so, because of tax credits and/or other social benefits administered by the tax administration.

Key Points—Active CIT, VAT, Employers, and Domestic Excise Taxpayers:

- CIT and VAT active taxpayer numbers are (as expected) lower than those for PIT across all economic groups. The largest difference is seen among AEs, where, at the median, there are approximately 10 active PIT taxpayers for each active CIT or VAT taxpayer. A similar pattern in the taxpayer-to-labor-force ratio is observed across the economic groups, with LIDC figures roughly one-tenth of EME figures, and EME figures in turn three to five times smaller than those of AEs.
- A similar pattern is observed in active employers who withhold taxes from employees: measured relative to the labor force, their numbers in AEs exceed those in EMEs, and in turn those in LIDCs.
- Domestic excise taxpayer numbers are lower by a factor of roughly 100 than CIT or VAT taxpayers.
- Taxpayer numbers have outstripped the growth in the labor market in most tax administrations across the five-year period, with the exception of VAT.

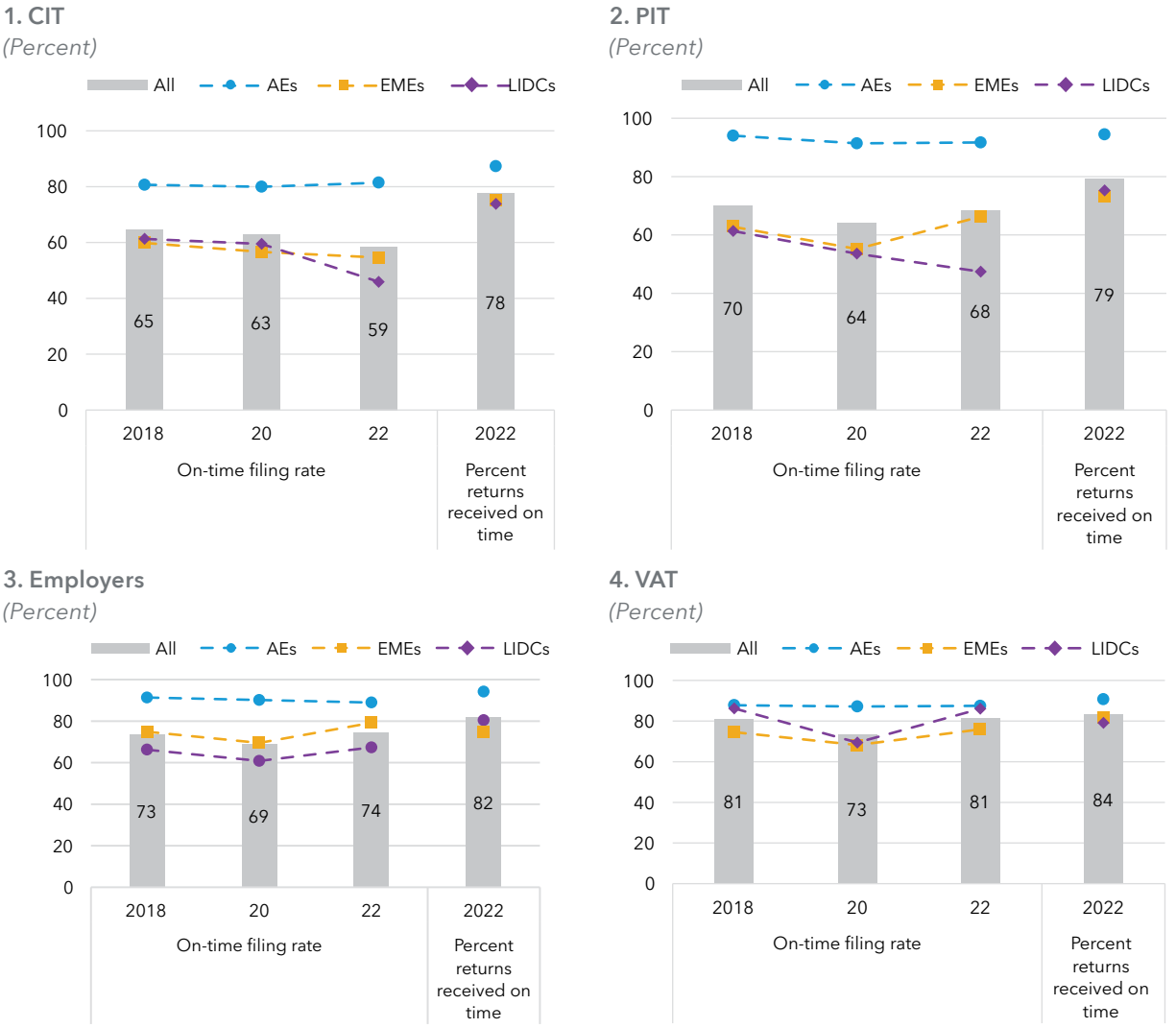
On-Time Filing

On-time filing rates are often used as a measure of voluntary compliance. ISORA has collected the data required to determine on-time filing rates using the TADAT definition since the first round. The TADAT definition for on-time rates is the number of returns *expected* divided by the number of returns received over the period. Previous analyses highlighted the differences in approach observed in estimating expected returns among administrations (Crandall, Gavin, and Masters 2019). A change to the ISORA questionnaire for FY 2022 includes a requirement to provide an FY figure for the total returns received.[21] This now enables a comparison of the ratio of total returns received on time to total returns received over the period.

Figure 19 shows on-time filing rates in panels 1 to 4 for the three main tax types (CIT, PIT, and VAT), as well as employers who withhold tax and other contributions from employees, by economic group. Each panel presents the TADAT-defined on-time filing rate for the period of 2018 to 2022, as well as the percentage of returns received on time, which is available for FY 2022 only.

[21] The change in question may have influenced the response to question on the number of on-time returns received, as participants' responses had to satisfy a new consistency requirement that on-time returns could not exceed total returns for each tax type.

Figure 19. Average On-Time Filing by Tax Type and Economic Group



Source: Authors' calculations.

Note: The TADAT definition is used for the on-time filing rate, that is, number of on-time returns/returns expected from active taxpayers. Percent returns received on time is the number of on-time returns/returns received. AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; LIDCs = low-income developing countries; PIT = personal income tax; TADAT = Tax Administration Diagnostic Assessment Tool; VAT = value-added tax.

Key Points:

- The on-time filing rate is generally higher for VAT than for the other tax types, particularly among LIDCs.
- Across all taxes, the on-time filing rates reported by AEs are significantly higher than those of EMEs or LIDCs, and this difference is greatest for PIT.
- On-time filing rates (as observed previously) change year over year but are most stable among AEs.
- Although on-time filing rates may vary each year, downward trends in on-time filing rates among LIDCs for CIT and PIT are visible in Figure 19. The number of registered taxpayers in LIDCs grew significantly over the five-year period examined. In turn, as observed in Figure 18, active taxpayer numbers have grown. Most LIDCs use active taxpayers to estimate expected returns, and thus, there has been an increase in expected returns. However, the numbers of returns and on-time returns have not grown as much over the same period.

- The differences between the average percentage of returns received that were on time for AEs and those for EMEs and LIDCs are smaller. In other words, there is less of a difference between the expected returns and actual returns received for AEs, whereas EMEs and especially LIDCs do not, in general, receive as high a proportion of the returns they expected as AEs.
- This observation suggests higher nonfiling rates among EMEs and LIDCs. However, some administrations report receiving more returns, or even more on-time returns, than they expected, so the relationship between expected and received returns is not easy to characterize.

On-Time Payment

On-time payment rates are also often considered to provide a measure of voluntary compliance. If all payments are made on time, there are no new arrears. ISORA has collected the data required to determine on-time payment rates using the TADAT definition from the outset of the survey. In past rounds, many instances of on-time payments exceeding payments due were recorded, leading to on-time payment rates of well over 100 percent.

In parallel with the change made to the ISORA questionnaire for FY 2022 on the number of returns, a similar adjustment was made to the questions on payments. FY 2022 includes questions on payments due, payments received, and payments received on time, enabling a comparison of all three quantities for each tax type.

Figure 19 shows the on-time payment rate by economic group over the period of 2018 to 2022, for CIT, PIT, PAYE, and VAT. In addition, the percentage of payments received that were paid on time by value is shown for 2022. The latter are constrained to be less than 100 percent.

Figure 20. Average On-Time Payment by Tax Type and Economic Group

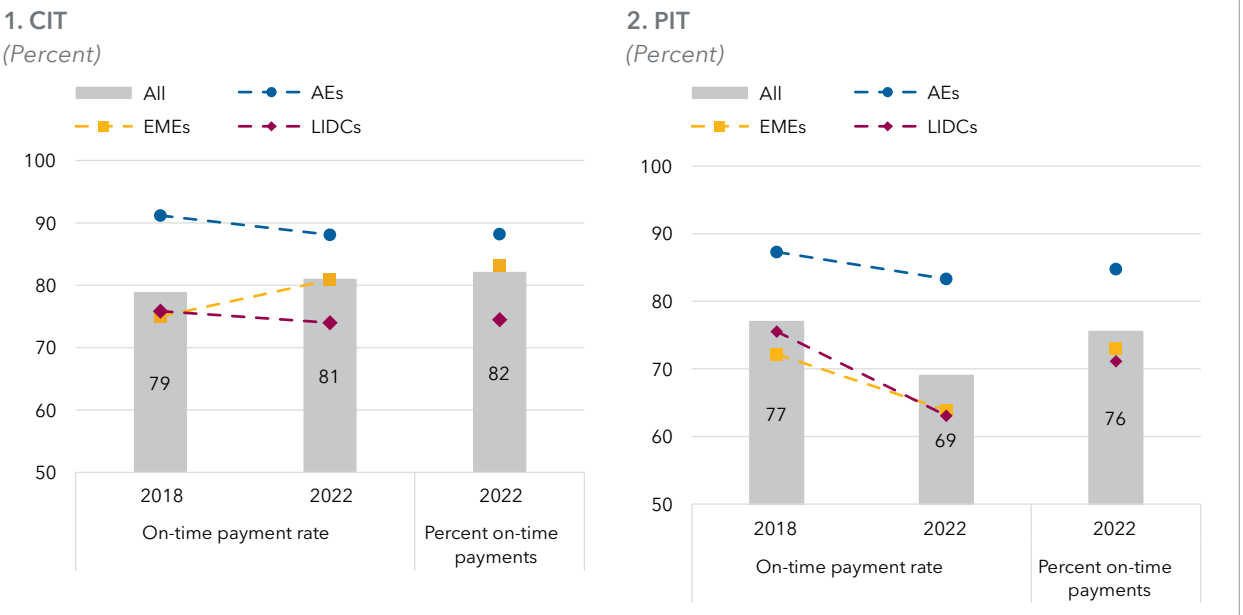
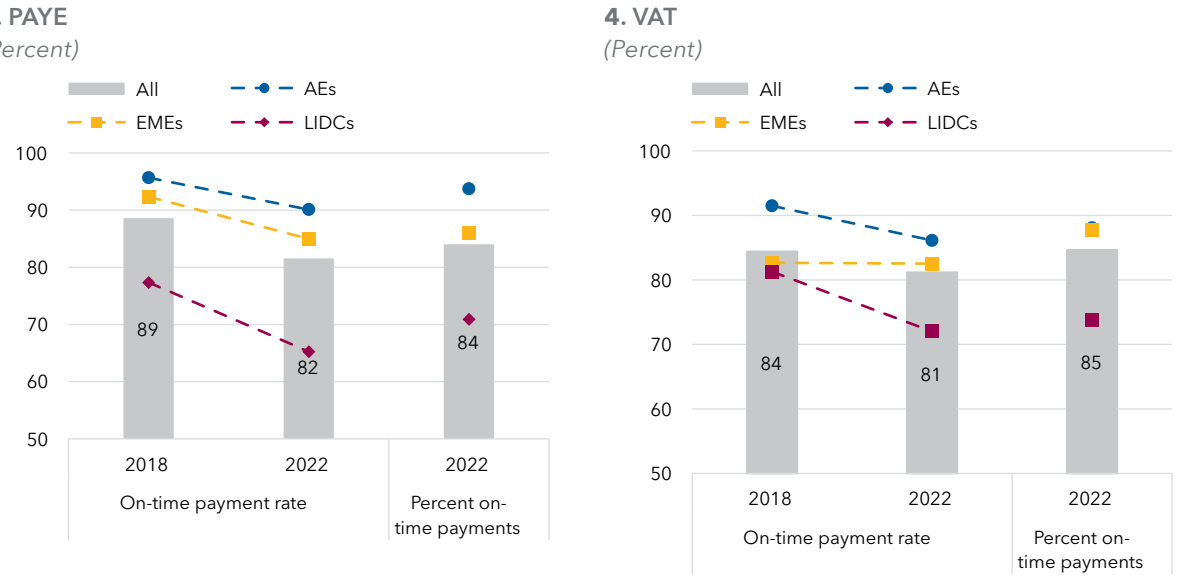


Figure 20. Average On-Time Payment by Tax Type and Economic Group (Continued)



Source: Authors' calculations.

Note: The TADAT definition for the on-time payment rate by value for VAT is applied to all the tax types, that is, these rates are calculated as *value of on-time payment received/value of payments* due. Rates exceeding 150 percent were dropped from consideration. AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; LIDCs = low-income developing countries; PAYE = pay as you earn; Percent on-time payments = value of on-time payments or value of all payments received; PIT = personal income tax; TADAT = Tax Administration Diagnostic Assessment Tool; VAT = value-added tax.

Key Points:

- Fewer administrations provide data enabling the determination of on-time payment rates than on-time filing measures, as observed in the section of this paper discussing the availability of quantitative data.
- As seen for on-time filing, the on-time payment rates reported by AEs are higher than those of EMEs or LIDCs, by as much as 20 percentage points over the rates for LIDCs.
- On-time payment rates show a lot of annual variability but are more stable among AEs.
- More often than not, payments received are less than payments due, leading to higher averages for on-time payments as a percentage of payments received.

Electronic Filing (E-Filing) and Electronic Payment (E-Payment)

E-filing) and e-payment offer benefits to both taxpayers and the administration over paper-based filing and cash payments, respectively. For taxpayers, electronic channels may reduce compliance burden, whereas for the tax administration, the use of electronic channels by taxpayers expedites compliance monitoring and analysis while also reducing opportunities for collusion between taxpayers and tax administration officers on taxes owed and paid.

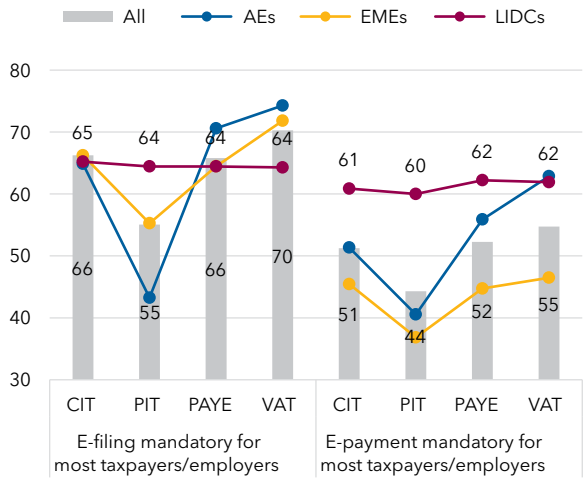
The ISORA database includes time series on return channels used for PIT, CIT, and VAT, and for employers that withhold taxes, as well as time series for the percentage of payments received electronically. In addition, the mandatory nature of e-filing and e-payment was probed in the periodic component of the ISORA survey of practices in FY 2022.

Figure 21 shows the use of electronic filing and electronic payment by economic group.

Figure 21. Electronic Filing and Electronic Payment

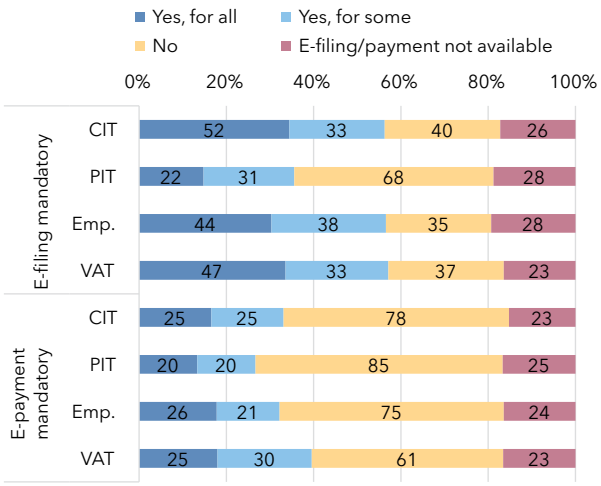
1. Mandatory E-Filing and E-Payment (FY 2022)

(Percentage of administrations requiring most taxpayers to e-file/e-pay)



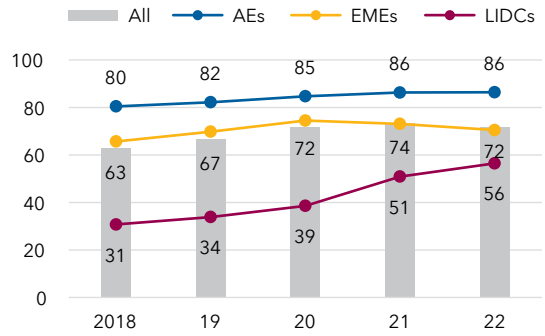
2. E-Filing and E-Payment Requirements (FY 2017)

(Number of administrations with e-filing/e-payment requirement)



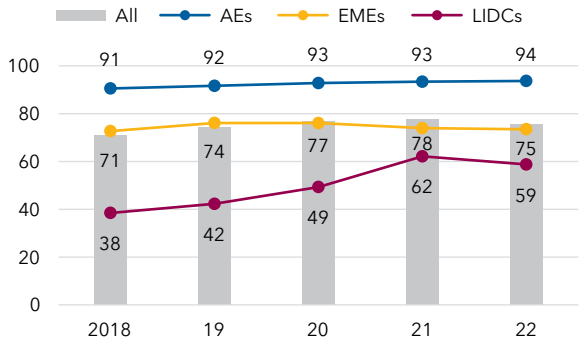
3. PIT E-Filing Rates

(Averages, in percent)



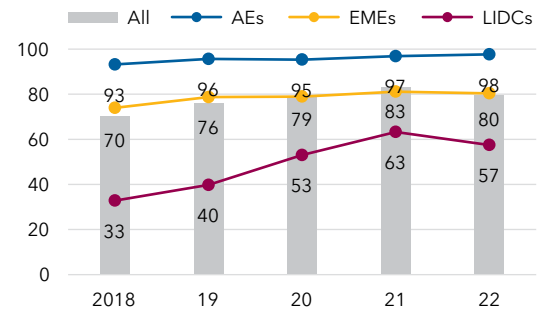
4. CIT E-Filing Rates

(Averages, in percent)



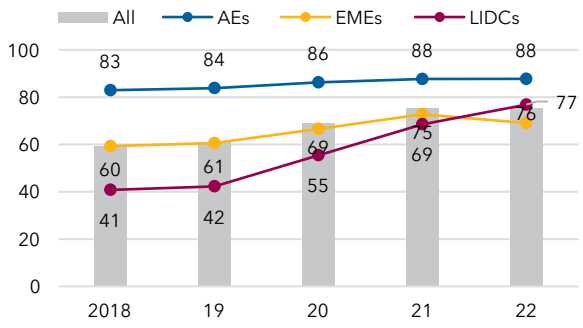
5. VAT E-Filing Rates

(Averages, in percent)



6. E-Payment Rates

(Averages, in percent by value of payments)



Source: Authors' calculations.

Note: Average rates for e-filing and e-payment are for all administrations, including those that do not offer e-services, that is, the statistics by economic group include administrations whose e-filing and e-payment rates are zero. ISORA questions on electronic return channels were changed over the five-year period. E-filing rates are thus calculated using (*Total returns-paper returns*) / *Total returns* to increase comparability over time and maximize use of return channel data points. AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; Emp. = employer withholding; FY = fiscal year; LIDCs = low-income developing countries; PIT = personal income tax; VAT = value-added tax.

Key Points:

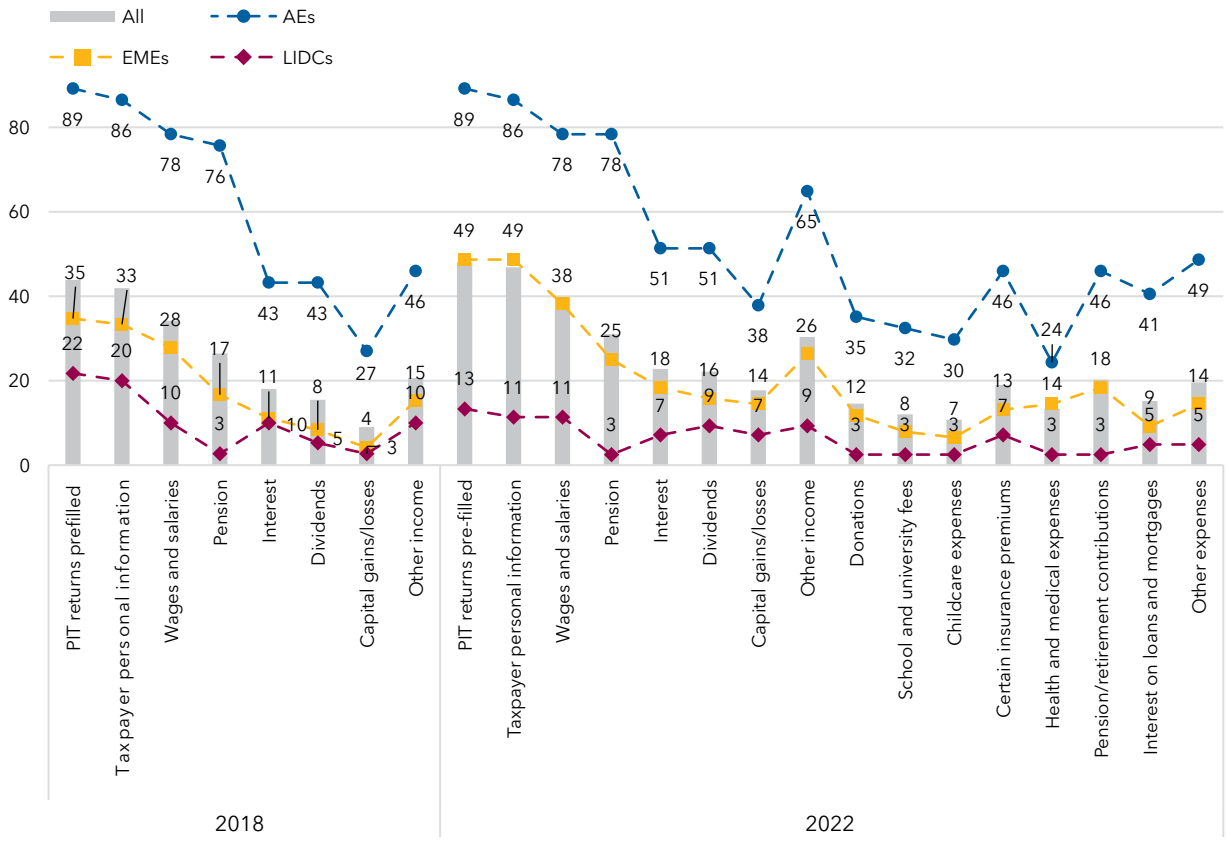
- Over 60 percent of tax administrations in LIDCs require e-filing and e-payments from most taxpayers (and active employers) across all tax types (Figure 21, panel 1), which exceeds the proportion of tax administrations in both AEs and EMEs that make electronic channels mandatory for most taxpayers for most taxes. This is somewhat unexpected, given relatively lower levels of connectivity in LIDCs.
- Despite differences in how questions about the mandatory nature of e-filing and e-payment were asked in 2017 (Figure 21, panel 2), it appears that more administrations required e-filing and e-payment by most taxpayers in 2022 than was the case in 2017.
- E-filing rates for all taxes in AEs are higher than those in EMEs and LIDCs (Figure 21, panels 3 to 5), but there has been rapid growth in the offering and uptake of e-channels in LIDCs. More than half the returns filed in LIDCs are now filed electronically, even for PIT, for which e-filing rates lagged those of other taxes in earlier years.
- Similar patterns to e-filing rates are seen for e-payment rates (Figure 21, panel 6). Again, e-payment rates are highest among AEs at close to 90 percent, but with rapid growth in e-payment within LIDCs over the five-year period shown, with more than three-quarters of payments in FY 2022 being received electronically by tax administrations.

Prefilling of PIT Returns

ISORA probes the prefilling of PIT tax returns by the administration, including the nature of income types and deductions that are pre-populated from third-party data. Information is also requested on the numbers of electronic returns that are pre-populated using third-party data for all four of the main tax types, but some administrations have difficulty in providing separate figures for returns that are prefilled.

Figure 22 focuses on the prefilling of PIT forms and the frequency with which various types of income and deductions are pre-populated in PIT returns.

Figure 22. Prefilling of PIT Returns
(Percent of administrations that prefill)



Source: Authors' calculations.
Note: The figures for LIDCs for FY2018 are less reliable than those for FY2022: some administrations that reported prefilling in FY2018 indicated no prefilling in later years. The category "Health and medical expenses" excludes health insurance payments. AEs = advanced economies; EMEs = emerging market economies; FY = fiscal year; LIDCs = low-income developing countries; PIT = personal income tax.

Key Points:

- Large differences are observed in the frequency of prefilling of PIT returns by tax administrations in AEs, EMEs, and LIDCs. Although almost 90 percent of AEs have been using third-party data to populate PIT returns for over five years, just half the administrations in EMEs prefill, and under one-seventh of LIDCs (13 percent) did so in FY 2022.
- Although the number of administrations in AEs reporting that they prefill PIT returns did not change over five years, many of these administrations added new data sources to their pre-population effort during this period.
- Appreciably more administrations within EMEs prefilled PIT returns in FY 2022 than five years earlier.
- However, growth in prefilling among LIDCs is less clear; despite significant growth in the number of LIDC tax administrations offering e-filing over the period, as well as the increased uptake of e-filing by taxpayers.[22] Effective use of prefilling requires a high level of confidence in the completeness and accuracy of third-party data, together with the ability to associate information provided by third parties with the correct taxpayer. These factors may contribute to the relatively slow progress in the adoption of prefilling among LIDCs, but further investigation may surface other factors at play.

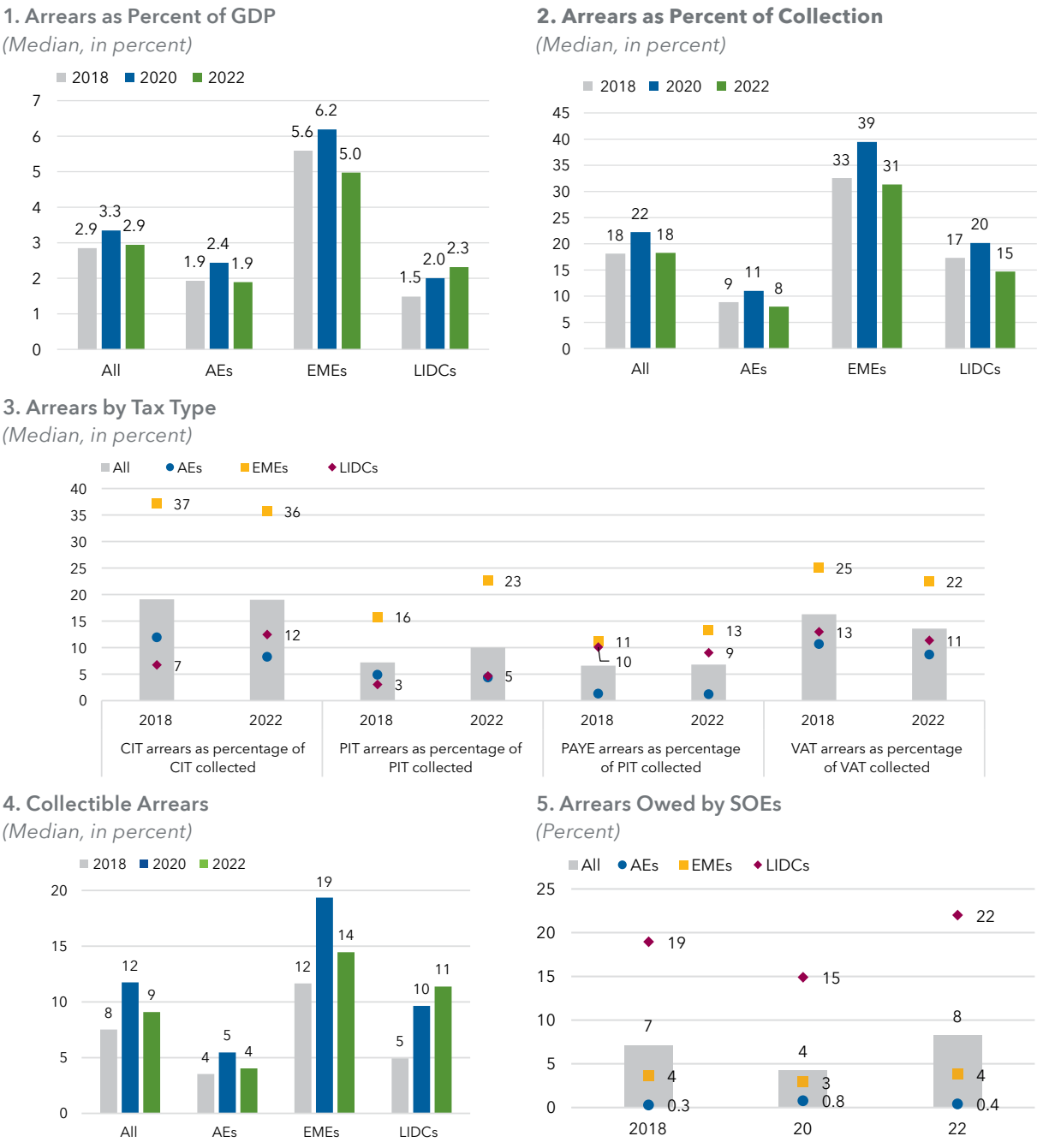
[22] Based on inspection of these and other indicators over time, it seems that some LIDCs reporting the prefilling of PIT returns in FY 2018 may have misinterpreted the question. Data provided on prefilling for FY 2022 are likely more accurate than earlier data.

Arrears

The management and reduction of tax arrears is a priority for most tax administrations. A commonly used performance measure is the ratio of the stock of total arrears at year-end to total collections for the FY. ISORA collects the data needed to calculate this indicator, as well as figures on collectible arrears. Questions on the arrears owed by state-owned enterprises (SOEs) were added to ISORA, given challenges to collecting tax from SOEs identified through engagement with tax administrations in EMEs and LIDCs.

Figure 23 presents a range of statistics on arrears by economic group.

Figure 23. Arrears by Tax Type and Economic Group



Source: Authors' calculations.

Note: Less than one-third of AEs (11) provided data on arrears associated with SOEs in FY18, FY20, and FY22. AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; FY = fiscal year; LIDCs = low-income developing countries; PAYE = pay as you earn; PIT = personal income tax; SOEs = state-owned enterprises; VAT = value-added tax.

Key Points:

- The stock of arrears reported by most tax administrations in ISORA constitutes 3 or more percentage points of GDP (panel 1), a significant amount in comparison with annual government expenditures.
- Measured relative to either GDP or annual revenue collections, the stock of arrears among EMEs is generally higher than that of either AEs or LIDCs.[23] Levels of arrears are similar for AEs and LIDCs when measured against GDP, but as LIDCs generally collect lower revenue as a percent of GDP, their arrears are larger in comparison with annual collections.
- Most tax administrations experienced an increase in arrears in FY 2020 (when COVID-19 had the greatest impact on economies), but arrears have fallen again in subsequent years.
- EMEs also exhibit the highest arrears ratios of the three economic groups across all core tax types, with the highest ratios seen for CIT.
- VAT arrears are the second highest for all tax types. This is somewhat surprising, given that much of VAT is collected monthly and that VAT is a relatively "young" tax in comparison with income tax, so one might expect its administration to be supported by more modern systems. This result may reflect higher levels of vigilance on the part of tax administrations in monitoring collections from VAT than other revenue types and is a subject that bears deeper study.
- LIDCs record higher levels of PAYE arrears than PIT arrears, suggesting that some administrations may have reported PIT arrears that *exclude* PAYE arrears.[24] However, the arrears reflected for PAYE are significantly lower than those for PIT among both AEs and EMEs, in line with the expectation of lower levels of non-payment by employers that withhold tax from employees.
- Despite weaker levels of response to questions on collectible arrears, the broad picture of collectible arrears in relation to collections by economic group resembles that of the total stock of arrears, with EMEs reporting the highest levels of collectible arrears and with a peak in the arrears ratio in FY 2020. LIDCs exhibit an exception to this pattern, showing an increase in collectible arrears. The categorization of debt as "collectible" or "noncollectible" may not be standardized across time within an administration and is certainly not standardized across administrations, which makes interpreting these results challenging.
- The contribution of SOEs to the debt stock is very different by economic grouping. Among AEs, arrears associated with SOEs constitute less than 1 percent of the debt stock, and many AEs do not specifically track SOE debt and hence do not provide responses to this question in ISORA. On the other hand, over half of the tax administrations in EMEs and LIDCs report arrears figures for SOEs. Administrations in EMEs report a median of 3 percent to 4 percent of debt associated with SOEs, whereas for LIDCs the figures are significant, with SOE debt constituting around one-fifth or more of debt for half of the LIDCs that provide these data.

Audit and Verification Metrics

As seen earlier, tax administrations invest significant resources in the audit and verification of taxpayers' returns or declarations, as inaccurate returns or underdeclaration of taxes owed contribute to revenue losses. Many administrations have introduced a range of compliance interventions and verification processes to improve the accuracy of declarations and to reduce the need for audits that are costly to both administrations and taxpayers.

[23] Some LIDCs may underreport their stock of arrears, as the arrear stock may not include records of older arrears that were not migrated from legacy systems to new information technology systems used to record and track arrears.

[24] In jurisdictions where most employees are not required by law to submit PIT returns, statistics provided for PIT in ISORA may in some cases reflect aggregates associated only with the set of individual taxpayers that do submit returns.

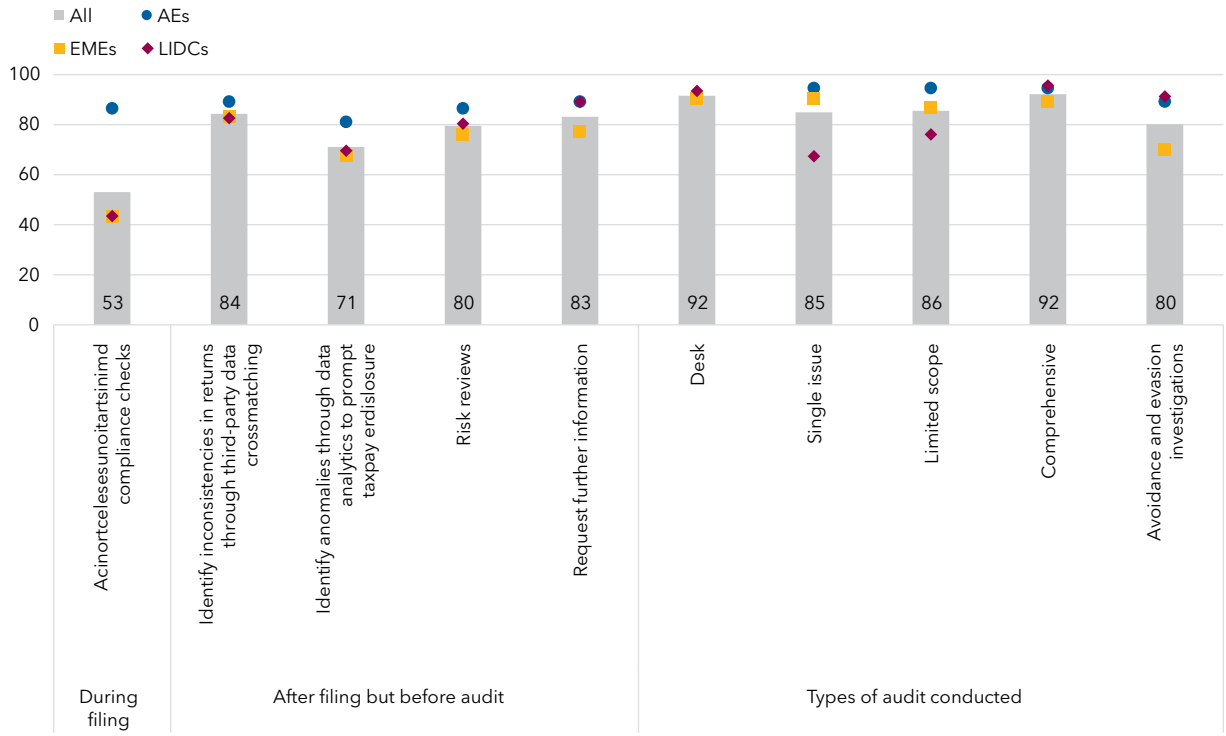
As in previous years, ISORA 2023 included data typically used by tax administrations to monitor their audit and verification efforts, such as the number of audits that result in a changed assessment and the assessments raised through audit. In addition, the periodic component of the survey included information on a range of verification activities other than audit, as well as the types of audits conducted by tax administrations in FY 2022. This broader set of data enables a more comprehensive picture of the compliance interventions and verification strategies tax administrations employed to ensure the integrity of tax declared.

Figure 24 provides information on preaudit compliance interventions, types of audits conducted, audit yields, and audit hit rates by economic group.

Figure 24. Audit and Verification Metrics

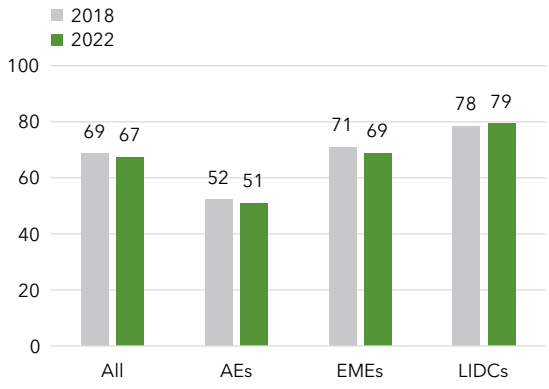
1. Audits and Verifications Undertaken by Administrations (FY 2022)

(Percentage of administrations that undertake audit/verification type)



2. Audit Hit Rate

(In percent, average)



3. Assessments Raised through Audit

(In percent of GDP, median)

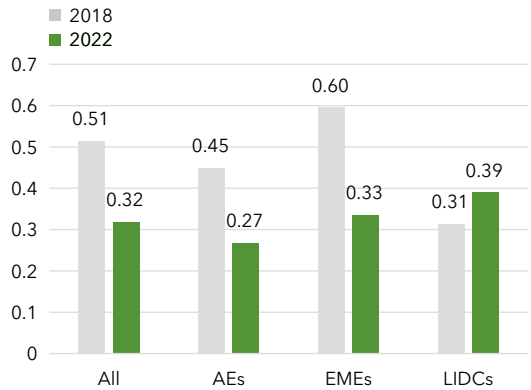
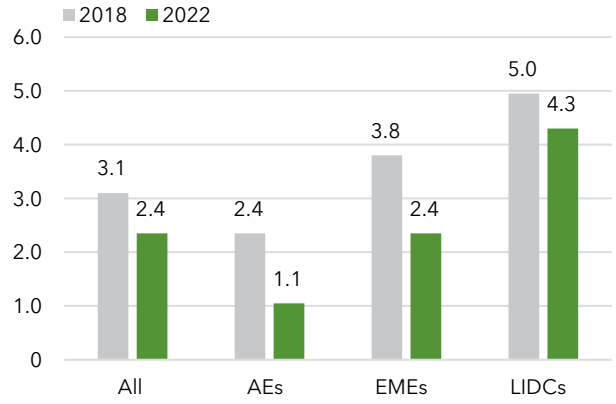
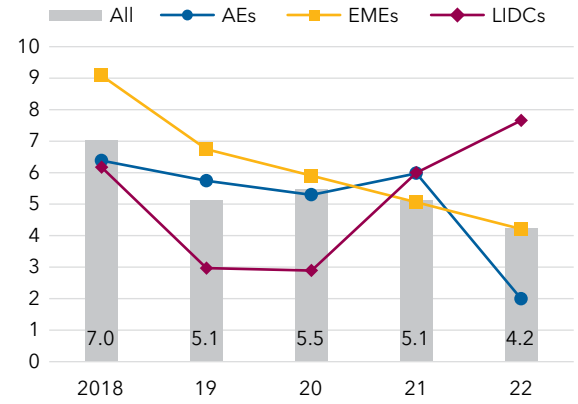


Figure 24. Audit and Verification Metrics (Continued)

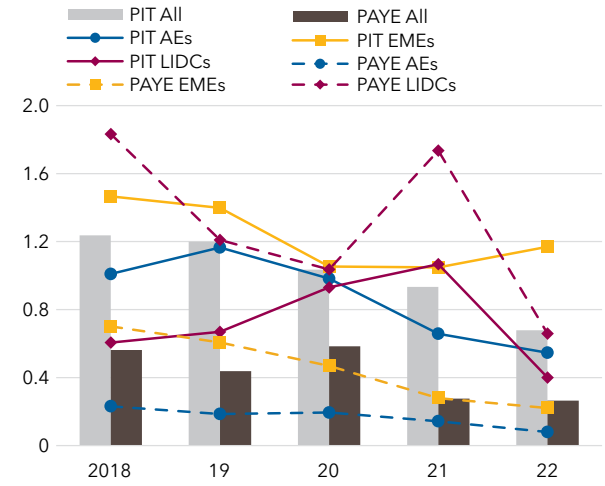
4. Assessments Raised through Audit
(In percent of collections, median)



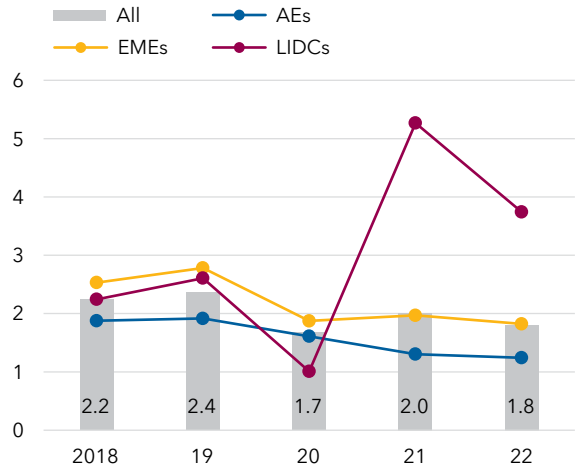
5. CIT Assessments Raised through Audit
(In percent of CIT collected, median)



6. PIT and PAYE Assessments Raised through Audit
(In percent of PIT collected, median)



7. VAT Assessments Raised through Audit
(In percent of VAT collected, median)



Source: Authors' calculations.

Note: AEs = advanced economies; CIT = corporate income tax; EMEs = emerging market economies; FY = fiscal year; LIDCs = low-income developing countries; PAYE = pay as you earn; PIT = personal income tax; VAT = value-added tax.

Key Points:

- In FY 2022, around 80 percent of tax administrations made compliance interventions prior to triggering resource-intensive audits (Figure 24, panel 1).
- However, there is a sharp difference between the prevalence of return verification during filing itself by tax administrations in AEs and their peers in EMEs and LIDCs. Although over 80 percent of tax administrations in AEs undertake verification at this stage, less than half the tax administrations in EMEs and LIDCs reported doing so in FY 2022. Although questions on verification during filing were not asked in earlier rounds of ISORA, it is likely that this early-stage verification is more prevalent than in earlier years, and the evolution of this component of verification is worth tracking over the next years.
- On the other hand, most tax administrations reported compliance interventions after filing but prior to audits. Over 80 percent of administrations use third-party data to identify inconsistencies in returns and may request further information from taxpayers, and 80 percent of tax administrations report that they conduct risk reviews. The use of data analytics to identify anomalies in declarations is well developed among AEs, with this practice lagging somewhat among EMEs and LIDCs.

- Over 90 percent of tax administrations report undertaking comprehensive audits and desk audits, whereas the figure drops to 86 percent and 85 percent for limited-scope and single-issue audits, respectively. These lower rates are because of fewer tax administrations in LIDCs reporting undertaking these types of audits (74 percent and 67 percent, respectively).
- Audit hit rates remain highest among tax administrations in LIDCs. This is likely attributable in part to lower levels of taxpayer compliance in LIDCs but may also reflect a lower level of corrections to returns prompted ahead of the triggering of audits. Hit rates among tax administrations in AEs and EMEs fell slightly between FY 2018 and FY 2022.
- Assessments vary year over year, particularly among LIDCs. Assessments raised through audit as a percent of GDP and of collections have fallen for all economic groups, perhaps in part because of a shift of resources toward compliance interventions prior to audit. However, the size of the change in assessments raised through audit by AEs is particularly striking, with the median assessment ratio less than half its FY 2018 value five years later. An in-depth study of these dynamics would be helpful to understand the factors at play in this sharp change, given that there has not been a noticeable change in resources allocated to audit and verification over the period.[25]
- The size of CIT assessments raised through audit is larger than assessments raised for other tax types for all economic groups. This was observed in previous analyses too (Crandall, Gavin, and Masters 2019, 2021). CIT is generally a more complex tax than other core taxes in respect of the treatment of income and allowable deductions, so more in-depth audits are likely to be used. Third-party data are more limited for cross-checking CIT than for taxes on employment income or VAT.
- Among AEs and LIDCs, the assessments raised through PIT audits are higher than those raised on PAYE, as expected. Noncompliance associated with income for which third-party data are available is generally lower than in cases where third-party data are not available. However, LIDCs report the opposite, with higher assessments raised through PAYE audits. As seen in Figure 17, active PIT taxpayers in LIDCs make up a small percentage of the labor force (the median is below 1 percent), and this may be an element of the explanation for this result.
- Assessments raised on VAT are very small in comparison with the compliance gap of 10 percent to 50 percent of collection found in VAT gap studies (International Monetary Fund [IMF] 2025). Audits are resource intensive, and the relatively low level of assessments raised may reflect resource constraints limiting audits that can be conducted, and in addition, businesses may not be filing VAT returns.

D. Efficiency Measures

Many tax administrations monitor their efficiency to guide their planning and increase their effectiveness over time. Efficiency measures—a ratio of some measure of output to a relevant input—can be used by tax administrations to compare their performance with that of peers. ISORA collects data that can be used to determine various efficiency measures, and in this analysis, three measures are used:

- *Revenue collected in relation to operational costs*: This measure is one of several variants described as "cost of collection," as it measures the cost to the fiscus of collecting tax (and other) revenues. There are many features of a tax administration that may make this ratio different from that of a close peer; for

[25] The OECD's Tax Administration 2024 (OECD, 2024) also points to the fall in assessments raised through audit in recent years, for members of the Forum on Tax Administration. Examples of interventions to increase compliance during and after filing, but before auditing are presented, and the yields from one such intervention are presented. In earlier rounds of ISORA, the question on yields from the application of "electronic compliance checks" was poor and so the question was dropped. However, the strong shift to compliance interventions other than audit suggests that questions on the yield from interventions other than audit would be valuable in future rounds of ISORA.

example, different taxes may be collected (and tax policy will differ), they may have differing nontax roles, and scale impacts cost efficiency.[26]

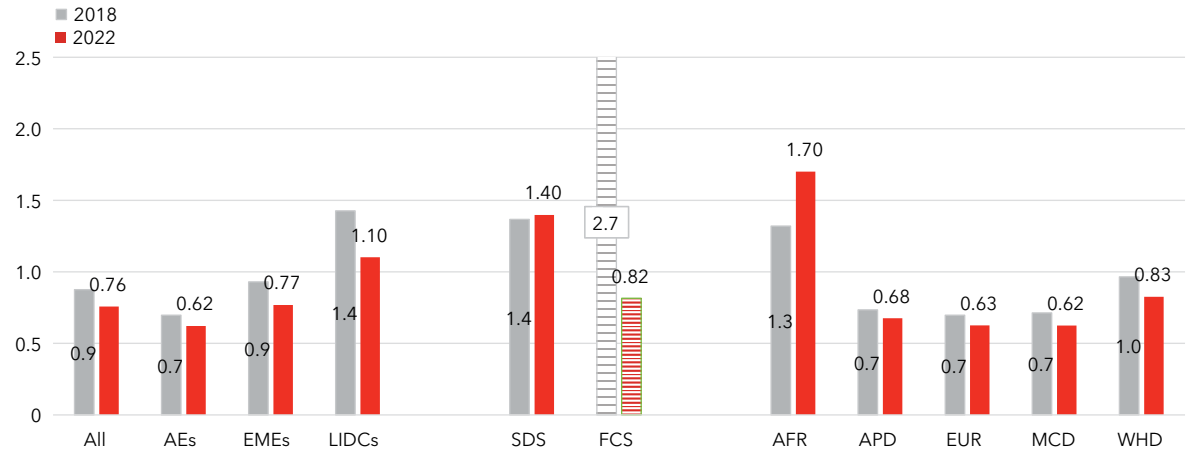
- *Active taxpayers in relation to FTEs*: For this measure, the sum of active taxpayers across PIT, CIT, and VAT, together with employers who withhold tax (or other deductions) from employees that are paid to the administration, is compared with the administration's number of FTEs. This measure does not take either the administration of other tax types into account nor nontax roles and so should also be treated with some caution.
- *Returns received in relation to FTEs*: Assuming that there is some preparation for or processing of every return received, the total number of returns received may be seen as a rough proxy for work volume. Returns received from PIT, CIT, and VAT taxpayers, as well as employers, are summed to compare with FTEs. Given that returns received were collected directly in ISORA for the first time for FY 2022 rather than calculated,[27] this measure has been determined only for FY 2022.

Statistics on these three measures are presented for economic groups and other groups of interest in Figure 25.

Figure 25. Tax Administration Efficiency Measures

1. Operational Cost as Percent of Revenue Collected (FY 2018 and FY 2022)

(Percent, median)

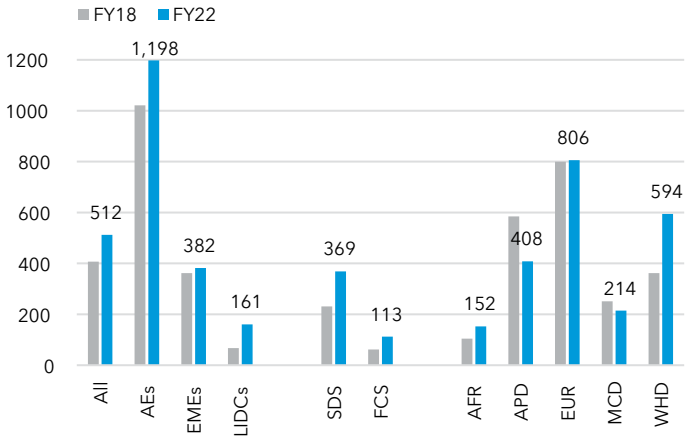


[26] For a more complete discussion on factors that should be considered when comparing cost of collection for different periods or tax administrations, see Crandall, Gavin, and Masters (2019).

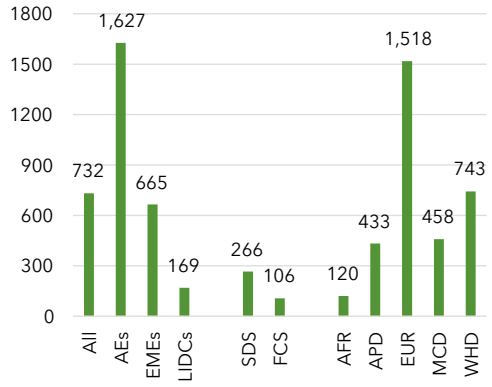
[27] In survey rounds prior to ISORA 2023 returns received were calculated as the sum of returns received through different channels. Incomplete channel information by some participants leads to understatement of total returns.

Figure 25. Tax Administration Efficiency Measures (Continued)

2. Active Taxpayers per FTE (FY 2018 and FY 2022)
(Number of active taxpayers, median)



3. Returns Received per FTE (FY 2022)
(Number of returns, median)



Source: Authors' calculations.

Note: Statistics on taxpayers and returns per FTE are derived from the set of administrations that provided active taxpayer numbers or returns for all applicable taxes covered in ISORA. Active taxpayers are calculated as the sum of active PIT, CIT, VAT, and domestic excise taxpayers, plus employers that withhold taxes. Returns received are calculated as the sum of PIT, CIT, VAT, and employers' returns. AEs = advanced economies; AFR = African Department; APD = Asia and Pacific Department; CIT = corporate income tax; EMEs = emerging market economies; EUR = European Department; FCS = fragile and conflict-affected state; FTE = full-time equivalent; FY = fiscal year; ISORA = International Survey on Revenue Administration; LIDCs = low-income developing countries; MCD = Middle East and Central Asia Department; PIT = personal income tax; SDS = small developing state; VAT = value-added tax; WHD = Western Hemisphere Department.

Key Points:

- All three efficiency measures used point to higher tax administration efficiency in AEs than in EMEs, whereas tax administrations in EMEs in turn appear to be more efficient than their counterparts in LIDCs. As noted in the section where taxpayer budgets and expenditures were covered, circumstances such as additional nontax revenue responsibilities or nonrevenue roles, together with incomplete reporting of operating expenditure, taxpayers, or returns, limit the interpretation of these measures as entirely comparable efficiency measures for individual administrations. However, the patterns observed by economic groups using all three measures are consistent and align with previous analyses of ISORA data (Crandall, Gavin, and Masters 2019, 2021).
- The main contributor to differences in *cost of collection* (operating budget as percent of revenue collected) by economic group can be explored by examining revenue collected as a percent of GDP (see Figure 12, panels 1 and 2), and the administration's operating budget as a percent of GDP (Figure 14, panels 1 and 2), as:

$$\frac{\textit{Operating cost}}{\textit{Revenue collected}} = \frac{\textit{Operating cost/GDP}}{\textit{Revenue collected/GDP}}.$$

From Figure 14, the operating budget as a percentage of GDP is largest for AEs, followed by EMEs and LIDCs. This ratio is 23 percent higher for AEs than for LIDCs. However, the revenue-to-GDP ratio shows a much larger variation, with the ratio for AEs almost double that of LIDCs (Figure 12). Thus, it is largely because of the difference in revenue collected that leads to a lower ratio of operating cost to revenue collected being associated with AEs.

- Similarly, the main driver of differences in the measure *active taxpayers per FTE* can also be explored by considering active taxpayers in relation to the size of the labor force (Figure 18) and the size of the labor force in relation to tax administration FTEs (Figure 15, panel 2), as:

$$\frac{\textit{Active taxpayers}}{\textit{FTEs}} = \frac{\textit{Active taxpayers}}{\textit{Labor force}} \times \frac{\textit{Labor force}}{\textit{FTEs}}.$$

  In a typical AE, there are about 100 times the number of PIT taxpayers relative to a typical LIDC with a similarly sized labor force, and the number of PIT taxpayers dominates the sum of active taxpayers across all tax types. Although administrations in AEs are better resourced in relation to labor force size—with roughly eight times the number of staff that an LIDC with a similar labor force would have—the enormous difference in taxpayer numbers trumps the difference in relative resourcing levels, and so active taxpayers per FTE is an order of magnitude higher in AEs than in LIDCs.

- In line with economies of scale in tax administration, SDS exhibit lower efficiencies than EMEs using all three measures, and a higher cost of collection even than LIDCs. Their higher operating costs and costs of salaries and wages (Figure 14, panels 2 and 3) are expected, given resource requirements for headquarter functions that do not scale with population or taxpayer numbers.
- The picture for FCS is mixed, with not only a lower cost of collection than LIDCs in FY 2022 but also lower active taxpayers and returns per FTE. Steadily declining operating expenditure reported in ISORA by FCS in recent years (Figure 14, panel 2) and the low levels of returns reported in relation to (low) active taxpayer levels (Figure 25) suggest the need for deeper investigation, including identifying possible inaccuracies and underreporting in figures used to calculate these measures, to examine the effects of low levels of funding on administration.
- In respect of regional patterns, the median cost of collection for tax administrations in sub-Saharan Africa is higher than that of all other regions. The median cost of collection for African Department (AFR) is higher than that of LIDCs globally. Figure 14 shows similar median levels of operating expenditure for AFR and European Department (EUR), but revenue collections in EUR are considerably higher than in AFR. Asia and Pacific Department's (APD's) and MCD's low operational costs translate into a similar cost-of-collection ratio to EUR, whereas Western Hemisphere Department's (WHD's) somewhat higher median cost of collection reflects higher median operational costs than APD and MCD. Patterns in cost of collection by region follow those observed for FY 2017 (Crandall, Gavin, and Masters 2021).
- EUR administrations demonstrate higher efficiency than other regions in terms of the ratios of taxpayer per FTE and returns per FTE. For all regions, these measures largely reflect their mix of economic groups (see Table 2).
- Comparison between FY 2018 and FY 2022 figures for cost of collection and active taxpayers per FTE suggests an increase in tax administration efficiency for most tax administrations over the period. Operating expenditure (relative to GDP) has fallen over the period for most AEs and LIDCs, whereas tax administration FTEs grew in relation to labor market size in most LIDCs, but tax administration size shrank in most EMEs and AEs, using the same measure. The growth in active taxpayers per FTE among EMEs and LIDCs may in part be attributable to improvements in data management and the quality of registers. Tracking this measure alongside now more reliable data (in ISORA) on returns per FTE over the next few years may yield valuable insights into efficiency and effectiveness.

5. Practices and Structural Foundations for Effective Tax Administration

ISORA 2023 data span questions on practices and structural foundations of tax administrations, alongside resources available to these administrations and some performance measures. This provides an opportunity to examine the relationship between tax administration practices, performance, and operational metrics. In this chapter, thematic indices reflecting practices and structural foundations are used to explore some of these relationships.

A. The Use of Indices to Reflect Practices and Structural Foundations

As noted earlier in this paper, ISORA 2023 included many questions related to the practices and structural foundations that support effective tax administration. The intention is to create a wide-ranging data set useful to assist tax administrations to identify aspects of tax administration in which they are relatively strong, as well as areas where they could take action to strengthen their overall performance. However, analysis involving many separate data points is challenging to assimilate if analyzed data point by data point.

One established method of using such data from a comparative database like ISORA is to develop indices comprising data points relevant to various thematic areas. The use of an index is an attempt to distill this large amount of data into a format suitable for comparing changes over time and among and between jurisdictions.

The ISORA data set was not specifically designed to produce indices of this nature. However, increasingly, research papers (by the IMF and others) now include indices developed as a by-product of ISORA responses to facilitate comparative analysis.[28] High-level descriptions of such indices are to be found in Annex 6.

The indices presented here are compiled using the responses to a series of survey questions (mostly of the "yes/no" type) related to a particular topic. Each index has several weighted components, and each component is based on one or more specific ISORA questions, so each index is associated with a large amount of data collected through various parts of the survey. A participant's score against each index is calculated based on their responses to these questions. The higher the number of positive responses, the higher the resulting score. The resulting index is thus a reflection of the degree of "good" practice or the extent of "strong" structural foundations.

Similar indices were used in previous IMF publications dealing with ISORA 2016 and 2018 (see also Annex 5). However, as discussed earlier in this paper, there have been many additions, deletions, and changes to questions over the five-year interval for the periodic questions that render comparisons, even between indices of the same name, difficult.

B. ISORA Indices Based on FY 2022 Data

The Tax Administration Indices Considered

Sound tax administration practices and structural foundations are necessary not only to collect revenues effectively for service delivery by the state but also to realize a fair and efficient tax system. Seven indices on different subjects that provide a broad perspective on tax administration practices and structural

[28] Examples of other IMF analyses using indices constructed from earlier ISORA data include Chang and others (2020), Crandall, Gavin, and Masters (2019, 2021), and for FY22 data, Atsebi, Gueorguiev, and Nose (2025).

foundations are presented in this paper. The seven indices are based on ISORA questions (mostly from the periodic group) that deal with administrative and operational practices, as well as the laws, regulations, and policies that underpin those practices.

In part, the choice of the indices described in this paper is dictated by subject matter covered in the survey. Nevertheless, the seven indices developed reflect key facets of effective tax administration, given the wide coverage of ISORA 2023.

The seven indices developed are as follows:

- *Compliance management* (CM)—a measure of the extent to which sound compliance practices and institutional features, including a risk-based approach, are in place to support compliance with the tax laws.
- *Digitalization* (DG)—a measure of the extent to which practices and systems support the use of digital technologies in business processes.
- *Governance* (GV)—a measure of the extent to which laws, authorities, procedures, and structures provide a solid framework for governance.
- *Human resources management and development* (HRMD)—a measure of the extent to which modern human resource practices and development policies are in place to support tax administration.
- *Management autonomy* (MA)—a measure of the extent to which laws, regulations, and policies provide autonomy for the administration to formulate strategy, allocate resources, and manage its operations..
- *Public trust* (PT)—a measure of the extent of information that is placed in the public domain as part of a visible commitment to accountability and transparency.
- *Taxpayer services* (TS)—a measure of the extent of taxpayer services available to support voluntary compliance.

There is strong overlap in the subject matter of these indices with aspects emphasized in the IMF's tax administration CD programs. One of the two main objectives of the IMF's results-based management framework for tax administration CD—"strengthened revenue administration management and governance arrangements"—corresponds with the governance and human resources management and development indices. The outcomes associated with the second objective, "strengthened core tax administration functions," are related to stronger compliance management and taxpayer services. There are also synergies between these seven indices and the tax administration performance areas covered by TADAT; examples of strong direct relationships at the POA level include taxpayer services and POA3, and public trust and POA9. The relevance of these areas in tax administration is also reflected in VITARA course subjects and content.[29]

Weighting Approach to Developing the Indices

One issue that directly affects the production of indices is the fact that not all practice or structural elements covered by ISORA questions or subquestions are of the same "value" or make the same contribution in a given domain that the index seeks to reflect. Further, the level of detail of questions and subquestions in the survey varies by topic. The approach taken to construct the indices was thus to weight the questions or groups of subquestions used for each index to reflect their relative contribution to the particular index. Weightings were first proposed for the indices developed using FY 2018 data. This was considered necessary as more ISORA questions and subquestions were being used to strengthen the index.

[29] VITARA in full, the Virtual Training to Advance Revenue Administration, is a joint project of the IMF, OECD, CIAT, and IOTA to strengthen tax administrations' knowledge in various institutional and technical areas and develop a number of online courses for tax administration staff, see https://www.imf.org/en/Topics/fiscal-policies/Revenue-Portal.

For the FY 2022 indices, a full review was conducted of all previously developed weightings and cross-index relativities were assessed to ensure a consistent set of weightings.[30]

This detailed structure of each index is described in Annex 7, which provides information on each index as follows:

- the specific ISORA FY 2022 question(s) used for each component of the index.
- the relative weighting applied to each component.

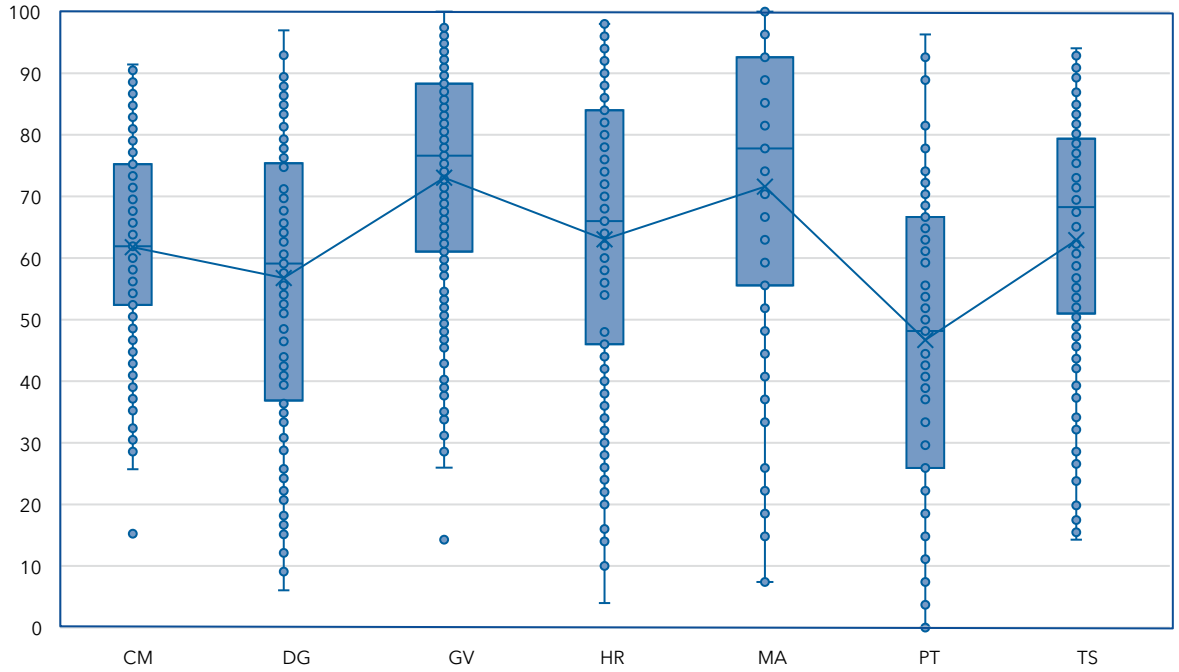
As some practices covered by the questions in ISORA 2022 are pertinent to more than one index, some ISORA responses contribute to more than one index. For example, data about various delegations of authority to manage human resources contribute both to the management autonomy index as well as to the human resource development index.

The Distribution of Scores against the Indices

Scores against each of the seven indices for survey participants could range from zero to 100. Before examining performance in scores by various groupings of interest, and how these scores relate to other characteristics, it is useful to understand the dispersion in scores against each of these indices. The range and distribution of the scores for each index for administrations that completed ISORA 2023 is depicted using box-and-whisker plots in Figure 26.

Figure 26. Distribution of Scores of the FY 2022 Indices

(Interquartile distance, mean)



Source: Authors' calculations.

Note: The indices are calculated for all respondents to the survey, that is, for 37 AEs, 83 EMEs, and 46 LIDCs. AEs = advanced economies; CM = compliance management; DG = digitalization; EMEs = emerging market economies; FY = fiscal year; GV = governance; HRMD = human resources management and development; LIDCs = low-income developing countries; MA = management autonomy; PT = public trust; TS = taxpayer services.

[30] All weightings were determined by the authors. Weightings are subjective and based on personal experience. Other experts may have differing views on weightings assigned and methodologies to determine weights. An example is provided by the indices in Atsebi, Gueorgiuiev, and Nose (2025), where a Delphi process was used in three stages of weighting of elements that correspond to a single data point in ISORA. We are aware of at least one paper constructing an "operational performance" index using various quantitative measures from ISORA with weights generated through a clustering algorithm. The weights generated differ by year, as the observations differ by year (see Milosavljević, Radovanović, and Delibašić 2023). An index constructed by CIAT authors weighted responses equally within five subindices while using principal component analysis to weight these subindices in the overall index (Garcimartín and Díaz de Sarralde Miguez 2025). See Annex 6 for other examples.

There is variation in the average scores of ISORA participants against these indices, with public trust the lowest (47), and management autonomy the highest (72). It is worth noting once again that the structure of these indices is determined by the questions included in the survey, so although the average score against a particular index is useful for examining the *relative* performance of either a group of administrations or an individual administration against this dimension of practice, the size of the average overall is insignificant in and of itself.

Measured in terms of either the interquartile range or the maximum–minimum difference, there are three indices that show the widest variation in scores—human resources management and development, management autonomy, and public trust. On the other hand, the scores against taxpayer services and compliance management show the most limited variation, suggesting wide adoption of good practices covered in ISORA in these domains. Indices with a narrower band of scores, such as compliance management, may not be offering sufficient differentiation for comparative purposes, suggesting the need for further review by the ISORA partners of questions probing the management of compliance.[31] With somewhat lower median scores and average scores, digitalization and public trust also show a relatively wide range of scores.

For most indices, the mean score lies between 3 and 6 percentage points below the median, the exception being compliance management, where the mean and median are very close. In addition, the fourth quartile has the widest range, reflecting the wide range in adoption of good practice among lower-capacity administrations.

These differences in score dispersion highlight how certain domains exhibit broader heterogeneity in the adoption of good practices, whereas others reflect a more uniform standard among respondents. Understanding these patterns provides valuable context for interpreting the relationship between the indices and tax administration characteristics and performance.

The Relationship among the Indices

It is interesting to examine correlations among the index scores themselves (Table 4). A positive association suggests that good practices in both domains are more likely to be developed in concert. Note that the use of the same questions in some pairs of indices renders their pairwise correlation coefficient higher than they would be without this overlap (figures for indices with overlap in questions are shown in italics).

Table 4. Correlations among the Indices

	CM	DG	GV	HR	MA	PT	TS
CM	1.00	*0.73*	*0.69*	*0.58*	0.46	0.65	0.69
DG		1.00	0.68	0.59	0.51	0.65	*0.77*
GV			1.00	*0.84*	*0.83*	0.73	*0.83*
HR				1.00	*0.76*	0.60	0.68
MA					1.00	0.48	0.56
PT						1.00	*0.71*
TS							1.00

Souce: Authors' calculations.
Note: CM = compliance management; DG = digitalization; GV = governance; HR = human resources; MA = management autonomy; PT = public trust; TS = taxpayer services.

[31] The questions on compliance approach and actions to improve compliance underwent major change from those asked for FY 2017, as many of the FY 2017 questions did not at that time show much variation in response.

All the correlations are observed to be positive, as was the case for sets of indices developed using earlier vintages of ISORA data (Chang and others 2020; Crandall, Gavin, and Masters 2021). This is as expected: Good practices or structures in more than one domain are frequently observed in tax administrations.[32]

As the governance index includes key components of the other indices, the correlations of all the indices with the governance index are relatively large. There is also a strong association between taxpayer services and digitalization. On the other hand, the associations with management autonomy, although all strongly positive, are weaker than most other correlations. Although high levels of autonomy might be expected to be associated with a high degree of transparency and hence public trust, the correlation between public trust and management autonomy is one of the smaller correlations observed.

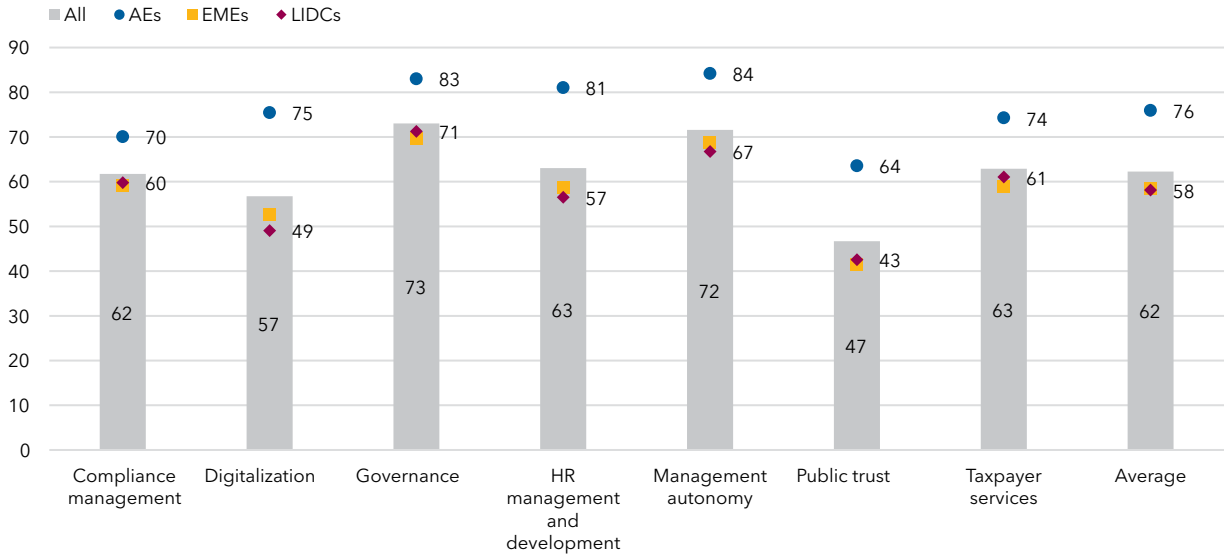
C. Scores against the FY 2022 Indices for Groupings of Interest

Previous exploration of the scores against indices showed sharp differences by income groups and by administration size. Statistics for various groups of interest are presented and discussed in this section.

Scores for Economic Groups

The chart in Figure 27 shows the average scores against each of the indices for the three economic groups, as well as the average of the seven indices.[33] To aid comparison, the scores for all indices have been scaled to have an equal range from 0 to 100. In addition, the average of the seven indices is shown (that is, the arithmetic average of the seven indices after scaling each of their ranges from 0 to 100).

Figure 27. The Average Scores against the Seven Indices for All ISORA Participants and by Economic Grouping



Source: Authors' calculations.

Note: The indices are calculated for all respondents to the survey, that is, 37 AEs, 83 EMEs, and 46 LIDCs. AEs = advanced economies; EMEs = emerging market economies; HR = human resources; ISORA = International Survey on Revenue Administration; LIDCs = low-income developing countries.

[32] This is also observed in TADAT assessments (Acedo and others 2024).

[33] A simple unweighted arithmetic average of the seven indices has been used. Principal component analysis of the seven indices reveals that the first principal component explains 72 percent of the variance, with the second and third components' contributions at 11 percent and 5 percent, respectively. The component loadings for the seven indices in the first principal component are all of the same sign and within 20 percent of each other in size. The correlation between the simple average of the seven index scores and the scores against the first principal component is 0.999.

Key Points:

- AE averages are significantly higher for all seven indices, exceeding the higher of the LIDC or EME average by at least 10 percentage points (CM), and for the overall average, by 18 percentage points.
- The largest differences between the average LIDC and AE scores are over 20 percentage points—for public trust, human resources management and development, and digitalization.[34]
- It is striking that LIDC and EME averages are close for all indices, separated by less than 4 percentage points in every case: this is further examined in the following section, where the scores of SDS are presented.

Drivers of the Differences between Index Scores of AEs and LIDCs

The index scores are determined from responses to questions, and so the differences in index scores for AE tax administrations and LIDC tax administrations are driven by the difference in the percentage of administrations in these groups responding "yes" to a particular question (or group of questions). The components of each index where the responses of AEs and LIDCs differ most are summarized in Table 5. The final table in Annex 7 provides the detail on the index elements where the largest differences in responses are seen between AEs and LIDCs.

Table 5. Drivers of the Differences between Index Scores for AEs and LIDCs

Index	Elements That Differentiate AE and LIDC Scores
Compliance management	Availability of data from the Social Security Agency Availability of data on property ownership and sales Specialized audit staff for international tax issues Entering into advance pricing arrangements Facilitating taxpayer access to third-party data before filing
Digitalization	Prefilling income and expense items in PIT tax returns Data science/analytics tools in place Systems for managing data from the Social Security Agency *(as for compliance management)* Systems for managing data on property ownership and sales *(as for compliance management)* Facilitating taxpayer access to third-party data before filing *(as for compliance management)*
Governance	Administration has authority to terminate employment Administration can design its own internal structure Conducts individual taxpayer satisfaction surveys Conducts business taxpayer satisfaction surveys
HRMD	Policy for flexible working arrangements in place, and associated flexible working arrangements Surveying staff on diversity and inclusion Sharing results of staff engagement surveys Administration has authority to terminate employment *(as for governance)*
Management autonomy	Administration has authority to terminate employment (as for governance) Administration can design its own internal structure (as for governance)
Public trust	Administration publishes an annual report Administration publishes an annual plan or operational business plan Administration publishes results of taxpayer satisfaction surveys Administration publishes tax gap analyses
Taxpayer services	Special provisions are made for taxpayers with disabilities Whole-of-government identification systems are in place Web services and apps are available in languages other than official languages Virtual assistants (chatbots) are in place

Source: Authors' analysis.
Note: AE = advanced economy; HRMD = human resources management and development; LIDC = low-income developing country; PIT = personal income tax.

[34] A similar pattern by income was seen in the analysis of indices developed using FY 2017 ISORA data.

Examining the components of the three indices showing the largest difference between AEs and LIDCs on average, namely, digitalization, public trust, human resources management and development, is revealing.

In the case of *digitalization*, the largest differences in positive responses between AEs and LIDCs are seen for

- prefilling income or expense items in PIT tax returns,
- having data science/analytics tools *in place*,
- having computer-based systems for managing data from the Social Security Agency,
- having a computer-based system for data on property ownership and sales,
- facilitating taxpayer access to third-party data prior to filing, and
- undertaking automated verification of returns.

Many of the previous points relate to the use of third-party data, and the capacity to manage—and hence use—data in core processes. This points to a large gap in the capacity of administrations in LIDCs relative to their AE peers to use data in facilitating voluntary compliance, as well as detecting noncompliance in the form of inaccurate declarations. The higher levels of access to data from other government agencies among AEs suggest better coordination and cooperation between these administrations and other organs of state.

The components of the *public trust* index that exhibit the largest differences between AEs and LIDCs are found in

- the publishing of an annual report,
- the publishing of an annual business plan or operational plan,
- the publishing of taxpayer satisfaction surveys, and
- the publishing of tax gap analyses.

The net result of the listed components is that citizens in LIDCs are less likely to know how their tax administration has performed or be informed of actions that the administration is taking to execute its mandate. LIDCs are less likely than their AE counterparts to conduct taxpayer satisfaction surveys or undertake tax gap analyses, and this clearly contributes to the lower levels of making the results of such studies public. However, this does not account for the difference entirely: For instance, more than half of AE tax administrations that undertake taxpayer satisfaction studies also make the results public, whereas only around one-third of LIDCs do so (30 percent for individual taxpayer surveys, and 36 percent for business surveys).

In the case of human resources management and development, the dominant differences in AE and LIDC responses are seen in the following:

- The existence of policies for flexible working arrangements, and consequently, various flexible working arrangements, such as working flexible hours, the option to work remotely regularly, and the possibility of executives to work part-time,
- Undertaking staff surveys to assess engagement, and sharing the results of such surveys with staff,
- The authority to terminate employment, and
- A time-reporting system.

The lack of flexible working arrangements and the monitoring of staff engagement may reduce employee satisfaction and morale, leading to increased staff turnover and lower productivity. The absence of authority to terminate employment of underperforming or unethical employees can also undermine staff morale and productivity. The inability to monitor employee activity inhibits identification of resource misallocation and the ability to adjust resource allocation to improve efficiency.

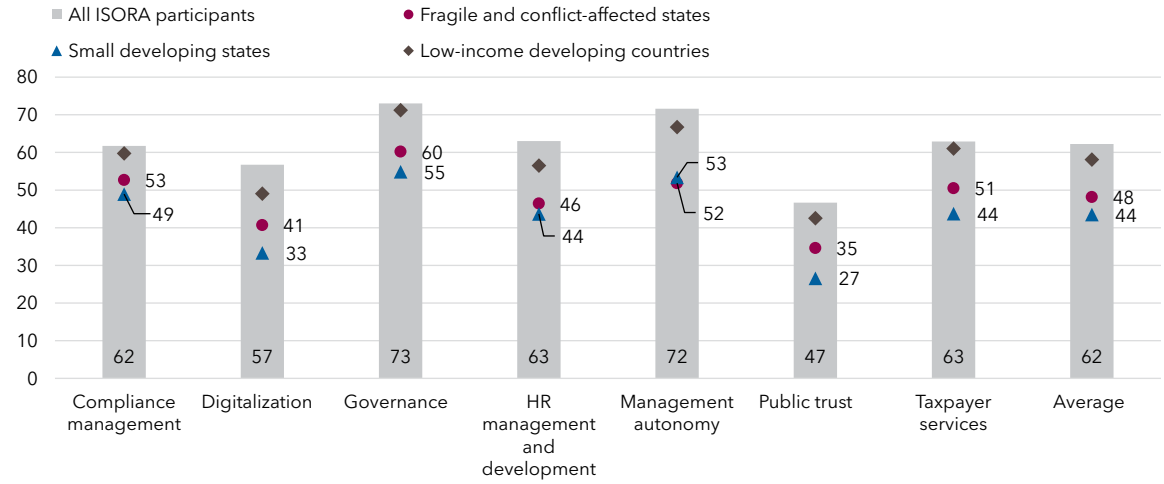
On the other hand, LIDC tax administrations lead (or match) AE tax administrations in respect of positive responses to some of the following questions:

- Having an integrity strategy;
- Producing annual business/operational plans and annual reports (but—as seen earlier—not *publishing* these documents); and
- Having a document that formally sets out taxpayer rights.

FCS and SDS

The chart in Figure 28 shows the average scores for FCSs and SDSs, using the scores for LIDCs as a comparator.

Figure 28. The Average Scores against the Seven Indices for FCSs and SDSs



Source: Authors' calculation.

Note: The indices are calculated for all respondents to the survey, that is, 22 FCSs and 31 SDSs. Seven countries are classified as both FCSs and SDSs. FCS = fragile and conflict-affected state; HR = human resources; ISORA = International Survey on Revenue Administration; SDS = small developing state.

Key Points:

- Across all indices, the average scores for FCS—some of which are EMEs—are lower than the average scores of LIDCs. The same pattern was observed using indices constructed from ISORA data for FY 2017 (Crandall, Gavin, and Masters 2021).
- The average scores of FCS are lowest relative to the average of all ISORA participants for management autonomy, human resources management and development, and digitalization. Measured against the Degree of Digitalization index compiled for FY 2017, FCS also lagged significantly behind other administrations.
- The average scores for SDS are lower even than the average score for FCS for six indices, and just 1 percentage point higher for management autonomy (53 versus 52). The scale of an administration impacts its operations. An administration with a small number of staff is not capable of providing the same range of services or compliance responses. Caution is needed in comparing the index scores of small administrations with much larger peers. The relationships observed between administration size and index scores are expanded upon in Box 3.

Box 3. Index Scores and Size of Tax Administrations

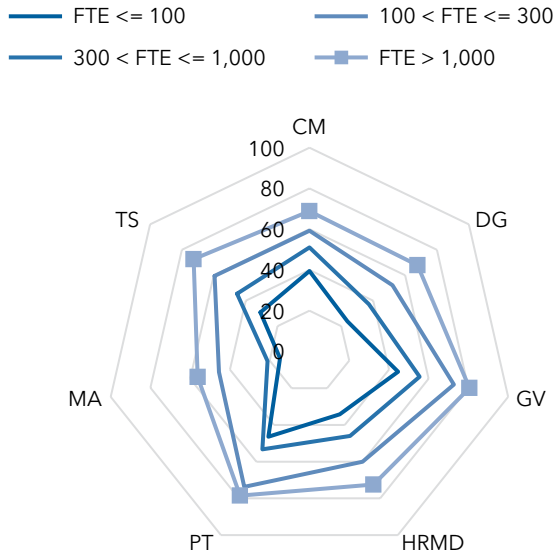
The practice indices reflect a range of sound approaches and successful strategies for effective tax administration. Constraints in human and financial resources limit the ability of smaller tax administrations to develop and offer the spectrum of services and approaches larger counterparts may be able to provide.

As shown in the radar diagram, the scores against all practice indices increase for tax administrations grouped by size, as measured in FTEs. For some indices such as compliance management and taxpayer services, the scores increase steadily with increase in size, whereas the behavior of others, such as public trust, hints at some "size threshold" effects, associated with an effort "overhead," for instance, resources required to refine the presentation of plans or reports for publication purposes.

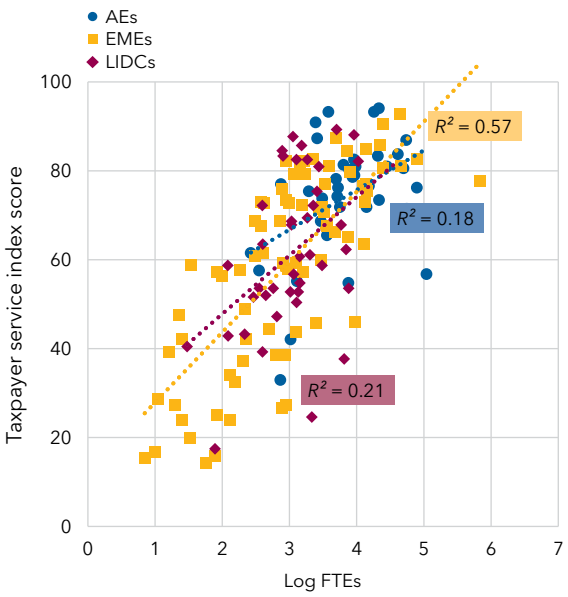
The administration size effects are observable even within economic groups, for most indices, as shown in the table of index correlations and the scatterplot of taxpayer service index scores against administration size.

Box Figure 3.1. The Relationship Between Index Scores and Administration Size

1. Average Index Scores for Administrations by Size



2. Taxpayer Service Index and Administration Size



Source: Authors' calculations.

Note: AEs = advanced economies; CM = compliance management; DG = digitalization; EMEs = emerging market economies; FTE = full-time equivalent; GV = governance; HRMD = human resources management and development; LIDCs = low-income developing countries; MA = management autonomy; PT = public trust; TS = taxpayer services

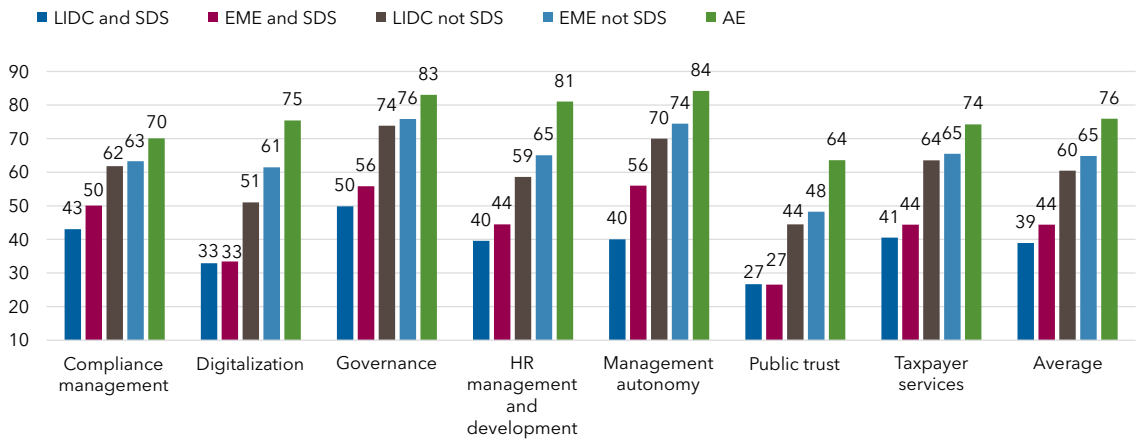
Box Table 3.1. Correlation of Index Scores against Log FTEs, by Economic Group

Economic Group	Compliance Management	Digitalization	Governance	Human Resources Management and Development	Public Trust	Management Autonomy	Taxpayer Services
AEs	0.23	0.07	0.42	0.54	0.21	0.25	0.42
LIDCs	0.44	0.45	0.38	0.17	0.20	0.22	0.46
EMEs	0.63	0.81	0.68	0.61	0.52	0.64	0.75

Source: Authors' calculations.

Examining the average index scores by economic group and SDS classification reveals a strong pattern, for all seven indices.

Box Figure 3.2. Average Index Scores by Economic Group and SDS Classification



Source: Authors' calculations.

Note: Five LIDCs are also SDS; 41 LIDCs are not. 26 EMEs are SDS; 57 are not. AEs are not classified as SDS, although four AEs that completed ISORA have populations below 1.5 million. AE = advanced economy; EME = emerging market economy; HR = human resources; LIDC = low-income developing country; SDS = small developing state.

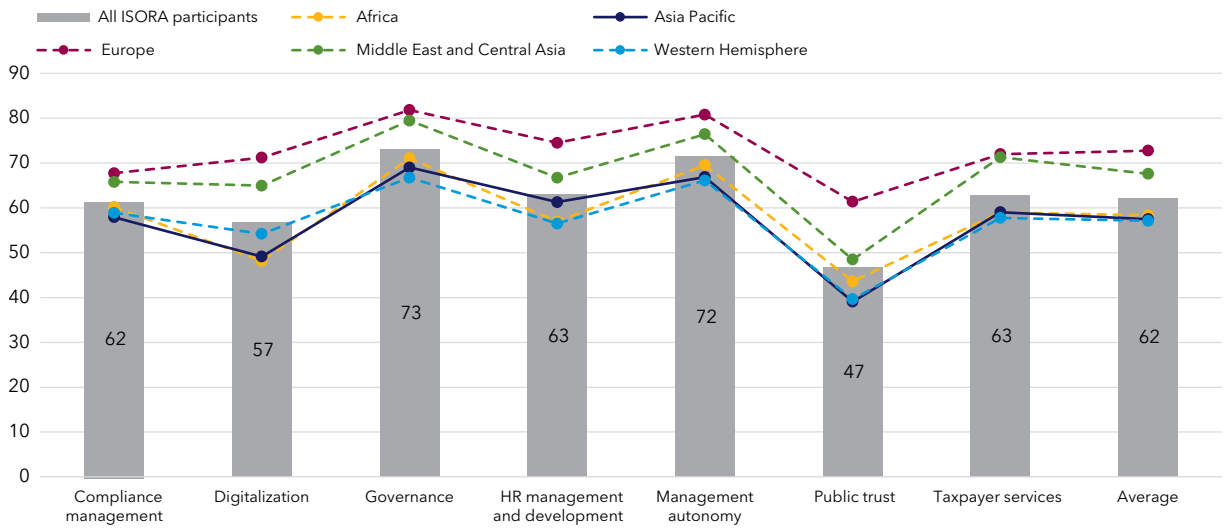
The Regional Picture

All IMF regions include a mix of economic groups and jurisdictions that include small states as well as very large countries. Performance against these indices varies strongly by economic group, and scores are also impacted by administration size. For this reason, it is interesting to examine the scores of economic groups, FCS, and SDS within each region, for which there were at least five participants in ISORA 2023, in addition to the regional average for each index. Figure 29 shows the average index scores by IMF region, as well as the average of the index scores for the economic and other groups of sufficient size within each region.

Figure 29. Index Scores by Regions and Groups within Regions

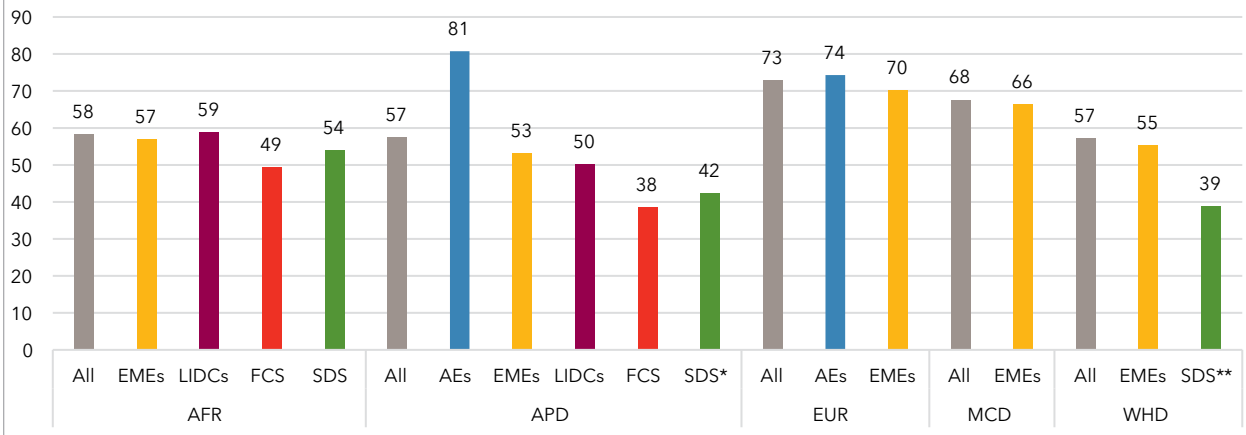
1. Index Scores for the IMF Regions

(Average scores for groups)



2. Average Index Scores for Groups within Regions

(Average score for group)



Source: Authors.

Note: SDS* includes SDS in APD, together with small Pacific Island economies that are not included in the IMF's SDS classification. SDS** includes SDS in WHD and small Caribbean-island economies not included in the IMF's SDS classification. The indices are calculated for groups with five or more administrations that completed ISORA 2023. AEs = advanced economies; AFR = sub-Saharan Africa; APD = Asia and Pacific Department; EMEs = emerging market economies; EUR = Europe; FCS = fragile and conflict-affected state; HR = human resources; IMF = International Monetary Fund; ISORA = International Survey on Revenue Administration; LIDCs = low-income developing countries; MCD = Middle East and Central Asia Department; SDS = small developing state; WHD = Western Hemisphere Department.

Key Points:

- In line with other aspects of tax administration operations and performance, and similar analyses of earlier vintages of ISORA data, smaller differences are generally observed between the average scores by geographic region (the IMF's five regions) than the differences between economic groupings (Figure 29, panel 1).
- The pattern of scores by region is similar for each index. The scores of EUR, a region dominated by AEs, are the highest of the five regions, whereas the average scores for AFR, APD, and WHD are close and fall 10 to 20 percentage points below the corresponding EUR scores. MCD's aggregate scores generally fall below EUR's, but above those of the other three regions. The markedly lower participation in ISORA

from the MCD region, and especially the Middle East and North Africa subregion, means that caution should be applied in interpreting these scores as representative of the extent of tax administration good practices and structural foundations of all tax administrations in the region.

- Within regions, the scores of groups follow global patterns. In the EUR and APD regions, the scores of AEs are higher than those of EMEs. In regions where there are FCS and SDS groups, their average scores fall below those of LIDCs. However, the scores of economic groups, FCS, and SDS do differ by region. For example, the average score of EMEs in Europe is higher than for EMEs elsewhere.

D. Administrative Practices and Institutional Foundations—Exploring Associations with Performance and Resources

The indices described earlier may be used to explore the associations of practices and institutional foundations with tax administration performance and resources. This section presents correlations between the seven indices (as well as their average) and selected variables using the full set of participants in ISORA 2023.

This exercise serves to highlight areas where more rigorous analysis might be employed to identify practices that are effective in increasing compliance, both voluntary and enforced, as well as practices that are associated with efficiency. A secondary benefit is to gain an understanding of the usefulness of these indices, and the extent to which they appear to provide a reasonable measure of the strength of the administration in the areas covered by the seven indices.

The first section sets out the correlations with operational metrics, and the second section covers resource metrics and efficiency measures, drawn from ISORA data, most of which were covered in Chapter 4.[35] In the third section, the relationship between the set of tax administration practice indices and measures that are impacted by tax policy as well as administration (revenue collected) and other measures of interest drawn from non-ISORA data, such as the VAT compliance gap and a measure of the strength of public administration.

Associations with Operational Metrics

Table 6 shows the correlations of the seven indices and their average with selected operational metrics associated with core tax administration functions: registration, filing, payment, arrears, and audit and verification. In all cases, data for 2022 are used. More intense shading is used to highlight stronger correlations.

Table 6. Correlations with Operational Metrics
(Pearson correlation coefficients)

Metric	CM	DG	GV	HRMD	MA	PT	TS	Ave
Active PIT taxpayers as percentage of Population	0.16	0.41**	0.20*	0.33**	0.25**	0.24**	0.21**	0.31**
CIT returns filed on time as percent of expected returns	0.40**	0.50**	0.39**	0.32**	0.29**	0.48**	0.43**	0.47**
PAYE returns filed on time as percent of expected returns	0.31**	0.43**	0.34**	0.29**	0.24**	0.35**	0.42**	0.40**
VAT returns filed on time as percent of expected returns	0.21*	0.45**	0.25**	0.25**	0.20*	0.25**	0.34**	0.34**

[35] Correlations between FY 2021 and FY 2022 quantitative ratios are mostly strong, after removing incorrect data points and outliers that distort the results (for example, implausible zeros, such as zeros for arrears, and outliers related to the response to currency-based questions, where there is an inconsistency between the units used in the numerator and denominator of the ratio). Note that although all results presented here use FY 2022 ISORA data, correlations of these indices against data for FY 2021 showed the same qualitative picture and patterns.

Metric	CM	DG	GV	HRMD	MA	PT	TS	Ave
PIT returns filed on time as percent of expected returns	0.19*	0.36**	0.19*	0.19*	0.10	0.26**	0.30**	0.26**
Percent CIT returns e-filed	0.53**	0.68**	0.62**	0.52**	0.44**	0.57**	0.71**	0.67**
Percent PIT returns e-filed	0.61**	0.73**	0.56**	0.45**	0.42**	0.58**	0.69**	0.66**
Percent PAYE returns e-filed	0.60**	0.73**	0.66**	0.57**	0.51**	0.60**	0.72**	0.72**
Percent VAT returns e-filed	0.47**	0.64**	0.64**	0.55**	0.52**	0.56**	0.65**	0.69**
Percent electronic payments by number	0.40**	0.59**	0.55**	0.55**	0.47**	0.48**	0.56**	0.60**
Percent electronic payments by value	0.43**	0.54**	0.59**	0.51**	0.51**	0.47**	0.58**	0.61**
Closing stock of arrears at year end as percentage of revenue collected	−0.22*	−0.21*	−0.30**	−0.24**	−0.23**	−0.24**	−0.30**	−0.29**
CIT arrears as percentage of CIT collected	−0.38**	−0.32**	−0.44**	−0.36**	−0.28**	−0.44**	−0.46**	−0.45**
PIT arrears as percentage of PIT collected	−0.30**	−0.30**	−0.41**	−0.35**	−0.29**	−0.43**	−0.39**	−0.42**
PAYE arrears as percentage of PIT collected	−0.01	−0.14	−0.06	−0.02	−0.02	−0.18	−0.12	−0.09
VAT arrears as percentage of VAT collected	−0.15	−0.11	−0.16	−0.10	−0.02	−0.15	−0.20	−0.15
Audit hit rate	−0.10	−0.28**	−0.20*	−0.18*	−0.11	−0.18*	−0.26**	−0.23**
Additional assessments raised through audits and verifications as percentage of collections	−0.15	−0.20*	−0.17	0.02	−0.09	−0.13	−0.22**	−0.15

Source: Authors' calculations.

Note: Ave = average; CM = compliance management; DG = digitalization; GV = governance; HRMD = human resources management and development; MA = management autonomy; PAYE = pay as you earn; PIT = personal income tax; PT = public trust; TS = taxpayer services; VAT = value-added tax. *$p < .05$; **$p < .01$.

Key Points:

- For each metric examined, the signs of the correlations are as expected (except where the correlation is negligibly small): where one would expect "good practice" to contribute to a higher value (for example, on-time filing rates), the correlations are positive, whereas in cases where "good practice" would be associated with a lower value (for example, arrears), the correlations are negative.
- However, the strength of the correlations varies by index, with the stronger correlations generally seen for *digitalization*, *taxpayer services*, *public trust*, and *governance*.
- *Registration:* All indices correlate reasonably strongly with *active PIT taxpayers to population*, with the strongest correlation seen with *digitalization*. The practice index correlations with PIT taxpayers to labor force are very close to the taxpayer-to-population ratio. There are small to negligible correlations with *percent active taxpayers on register* for the five core taxes (not shown in the table).

- *On-time filing:* The correlations with the practice indices and TADAT *on-time filing* measures for the four core taxes are all positive, and are strongest for CIT, followed by PAYE and VAT, and lowest for PIT. The strength of the correlations is highest between on-time filing for CIT and *digitalization* (0.50) and on-time filing for CIT and *public trust* (0.49).[36] This suggests that there is an association between the extent of good practices in a tax administration and taxpayer voluntary compliance.
- *On-time payment:* The correlations for on-time payment measures are weaker than for on-time filing (not shown in the table), with only a handful of correlations above 0.3. In general, fewer administrations provide payment-related figures than filing statistics, and "payments due" figures provided in ISORA may be lower than payments received on time.
- *E-filing and e-payment:* E-filing rates for all four tax types have the strongest correlations of all operational metrics with the practice indices, with values of around 0.7 for digitalization and taxpayer services, and over 0.5 for governance and public trust. *E-payment rates* also correlate strongly with the indices, with coefficients of over 0.5 for several indices.
- *Arrears*: The correlations with the indices are negative, as expected. The correlation coefficients are stronger for CIT and PIT than for arrears in total. Fewer countries provide figures for arrears by tax type, and it may be that those that do are those able to provide more accurate figures. However, the arrears figures for PAYE and VAT are distinctly weaker. PAYE appears to be the core tax for which fewer administrations provide information on returns and payments, and it may be that arrears are also less effectively monitored. VAT arrears reporting may be confounded by credits, unpaid refunds, and similar issues associated with the nature of VAT administration. The correlation of the indices with *collectible arrears* as percent of collections is lower: This may reflect the lack of a standardized approach by administrations in their delineation of collectible arrears.
- *Audit and verification*: Correlations against both measures—*audit hit rate* and *assessments raised through audits as a percent of tax collection*—are generally negative (−0.10 to −0.28, except where these are essentially zero). The audit hit rate is somewhat ambiguous: a low (high) audit hit rate could mean high (low) taxpayer compliance or poor (good) audit selection and audit quality. Audit coverage also impacts the hit rate if cases are selected by risk ranking. Note that many LIDCs consistently report audit hit rates of 100 percent. As seen in Chapter 4, assessments raised through audits are higher for LIDCs than AEs and likely cover a smaller percentage of assessments raised through compliance interventions than in the past. However, it is interesting to note that the strongest correlation of assessments raised is with taxpayer services, as strong taxpayer services might be expected to increase the degree of voluntary compliance and hence lower assessments raised through compliance interventions.
- *Dispute resolution:* Correlations against *dispute metrics* are of the expected sign but are small and not highly significant (not shown in the table). All index correlations are negative for *internal review cases per taxpayer*, and all are positive for *percentage of cases found in favor of the tax administration by* higher appellate courts.

Associations with Resources and Efficiency Measures

Examining the associations between resource levels or allocation and the practice indices can provide insights into the management and application of resources to facilitate the adoption and extension of good practices within a tax administration. Examining the relationship between the extent of good practices and efficiency serves to identify areas that make the most significant impact on administrative efficiency and hence assist in refining strategy and reform priorities.

Table 7 shows the correlations between each of the seven indices and their average and selected resource-related metrics.

[36] Using an average of the on-time filing rates across the four tax types, and the IFIAT index created by CIAT, a comparable correlation of 0.339 was found (Garcimartín and Díaz de Sarralde Miguez 2025).

Table 7. Correlations with Selected Resource-Related Variables and Efficiency Measures

Metric	CM	DG	GV	HRMD	MA	PT	TS	Ave
Operating cost as percent of GDP	−0.22*	−0.23**	−0.09	−0.07	−0.01	−0.10	−0.18*	−0.14*
Percentage staff allocated to audit, investigation and other verification	0.19*	0.22**	0.19*	0.17*	0.15*	0.18*	0.17*	0.21*
Percent staff with 20 or more years of service	0.21*	0.43**	0.20*	0.23**	0.14	0.23**	0.25**	0.29**
Percent of staff with 10 or more years of service	0.11	0.31**	0.11	0.12	0.07	0.08	0.12	0.16
Percent staff with a degree	0.41**	0.43**	0.40**	0.28**	0.28**	0.33**	0.50**	0.44**
Operating cost as percent of collections	−0.33**	−0.43**	−0.25**	−0.21*	−0.15	−0.26**	−0.34**	−0.33**
Log active taxpayers per FTE[1]	0.26**	0.40**	0.35**	0.31**	0.23*	0.40**	0.35**	0.39**
Log returns received per FTE[2]	0.40**	0.60**	0.49**	0.44**	0.37**	0.47**	0.54**	0.55**

Source: Authors' calculations.

Note: Ave = average; CM = compliance management; DG = digitalization; FTE = full-time equivalent; GV = governance; HRMD = human resources management and development; MA = management autonomy; PT = public trust; TS = taxpayer services; Ave = average. *$p < .05$; **$p < .01$.

1. These correlations are for the 109 administrations that provide active taxpayer figures for all the core tax types that they administer.

2. These correlations are for the 118 administrations that provide the number of returns received for all the core tax types that they administer

Key Points:

- The correlations of *financial resource measures* with the practice indicators are not large. The most striking pattern of negative correlations of operating expenditure (as percent of GDP) with four practice indices (whereas essentially zero for governance, HRMD, and management autonomy) points to the independence of the extent of good practices reported in ISORA from funding levels, as measured relative to GDP. Small administrations have higher levels of funding relative to GDP (see Figure 14) and generally have lower scores against the practice indices. Using this measure, there is limited difference between the operating budgets of AEs and LIDCs.
- The correlations between the indices and *salary costs* as percentage of operating expenditure are not significant. Nor are the correlations between the indices and *ICT operating expenditure* (as percent of operating expenditure, for FY 2022) significant, not even for digitalization. ICT spending is volatile, so this is not unexpected. However, even using a five-year average (FY 2018 to FY 2022) for ICT expenditure both as percent of operating expenditure and as percent of GDP, the correlation coefficients are negligible. This suggests that investment in ICT may be needed over a longer period, or that the quantum of spending is less important than how funding for ICT is applied and would be worth deeper investigation.
- Turning to *human resources* available to the administration, again the *level of resourcing* does not appear to bear any strong relationship with the extent of good practice: none of the correlation coefficients with population per FTE and labor force per FTE, and with the logs of both these variables exceed 0.2.

- There are, however, small but universally positive correlations between the seven indices and *percent staff allocated to audit and verification*. This may largely be an artifact of the higher proportion of staff in audit and verification among AE administrations, and the result bears deeper scrutiny. The correlations with staff allocated to all other functions are negligible, and this is also the case for percent of staff in headquarter roles.[37]
- Regarding *staff characteristics*, there are two measures that exhibit strongly positive correlations with some practice indices: *the percentage of staff with 20 or more years of experience* is strongly associated with *digitalization*, whereas the *percentage of staff with a degree* is strongly associated with *taxpayer services*. The correlations with percentage of staff with 20 or more years of experience are stronger than the corresponding relationships of the indices with the *percentage of staff with 10 or more years of experience* considered in the formulation of other indices using ISORA 2023 data points (Garcimartín and Díaz de Sarralde Miguez 2025).[38]
- The correlations of the *efficiency measures* presented in Figure 25 with all seven practice indices have the expected signs: The correlations with *cost of collection* are negative, and positive for *core tax returns received per FTE* and *core active taxpayers per FTE*. The correlation coefficients are once again largest for digitalization, followed by taxpayer services, public trust, and governance. The direction of causality (if any) is unclear; for example, the driver for greater digitalization may be the requirement to increase efficiency, or digitalization may be the driver of greater efficiency.

Associations between the Indices and Other Measures

In this section, the relationships between the practice indices and various other measures other than tax administration features and performance metrics are examined. The measures examined relate to revenue collections, measures of tax administration effectiveness, and measures of public administration strength that are available for a large number of countries.

- *Revenue collection measures:* The two measures examined were discussed in Chapter 4: revenue collected by the tax administration as a percent of GDP and revenue collected as a percent of government revenue. The revenue collected by the tax administration depends on tax policy choices, as well as choices by the government as to which revenues are to be collected by the central tax administration and which are to be collected through other agencies.
- *Tax administration effectiveness:* The first measure used here is "tax effort," defined as the ratio of actual collections to potential collections, and calculated through a stochastic frontier model (Benitez and others 2023). Here, "potential collections" also include tax policy choices that would maximize collection, based on the economic and other characteristics of the jurisdiction. Thus, "tax effectiveness" does not rest on the effectiveness of the tax administration alone. The second is a measure of the VAT compliance gap, defined as the difference between actual VAT collections and VAT that would be collected under existing policy, with full compliance.
- *Public administration and governance:* The practices and performance of a tax administration might be expected to influence and be influenced by other organs of state. For this reason, some indices used to compare the strengths and weaknesses of public administration are also considered. A public administration index developed to foster data-informed peer learning about public administration and its reform, developed by the Blavatnik School of Government (2024), is the first index used.[39] Two of the World Bank's Worldwide

[37] Values provided by ISORA respondents for the percentage of staff performing headquarters functions vary between 0.1 percent and 100 percent. It seems that not all ISORA participants have interpreted this measure in the same way, despite guidance embedded in the questionnaire as to functions that would typically be included.

[38] One of the four subindices compiled by Garcimartín—"Available resources"—contains an element that is calculated based on whether the administration's percentage of staff with more than 10 years of experience falls above the average or in the fourth quartile of the distribution of the variable in FY22.

[39] One of the data sources used in the Blavatnik Index of Public Administration 2024 is ISORA data. Fourteen indicators for FY21 are used. Most are numeric and not incorporated into the practice indices presented in this paper.

Governance Indicators are also used: Government Effectiveness and Regulatory Quality (World Bank 2024). Governance Effectiveness captures perceptions of the quality of public services, policy formulation, and implementation, among others. Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that promote private sector development.

Table 8 shows the correlations between each of the seven indices and their average and the selected metrics.

Table 8. Correlations with Revenue Collection Variables, Measures of Tax Administration Effectiveness, and Strength of Public Administration

Variable	CM	DG	GV	HRMD	MA	PT	TS	Ave
Revenue collected as percent of GDP	0.25**	0.44**	0.27**	0.22**	0.22**	0.33**	0.33**	0.35**
Revenue collected as percent of government revenue	0.40**	0.45**	0.38***	0.26**	0.27**	0.38**	0.41**	0.42**
Tax effort (113 administrations)	0.15	0.36**	0.30**	0.45**	0.33**	0.29**	0.26**	0.41**
VAT compliance gap (37 administrations)	−0.10	-0.32*	−0.19	−0.07	−0.13	−0.27	−0.12	−0.21
Data availability rate	0.29**	0.27**	0.23**	0.26**	0.22**	0.29**	0.24**	0.30**
Blavatnik Public Administration Index (110 countries)	0.41**	0.59**	0.35**	0.47**	0.21*	0.43**	0.52**	0.57**
Government Effectiveness (159 countries)	0.20*	0.34**	0.23**	0.39**	0.22**	0.22**	0.24**	0.32**
Regulatory Quality (159 countries)	0.23**	0.38**	0.27**	0.41**	0.26**	0.27**	0.28**	0.36**

Source: Authors' calculations using data from ISORA, the World Economic Outlook, Benitez and others (2023), the RA-GAP studies, and the World Bank,

Note: Ave = average; CM = compliance management; DG = digitalization; GV = governance; HRMD = human resources management and development; MA = management autonomy; PT = public trust; RA-GAP = estimates of the VAT gap using the IMF's Revenue Administration Gap Analysis Program methodology; TS = taxpayer services; VAT = value-added tax. *$p < .05$; **$p < .01$.

Key Points:

- Despite other factors influencing revenue collections (economic factors, tax policy), positive correlations are seen against all the macrocollection variables. The correlations for both measures are strongest against the digitalization index, followed by taxpayer services, but are significant against all seven indices, pointing to the positive role of strengthened tax administration in collecting revenue.[40]
- Positive correlations are seen with tax effort, with the strongest association in this instance against human resources management and development, followed by digitalization, despite this measure being influenced by tax policy as well as administration.
- All indices correlate negatively with the VAT compliance gap. However, only the correlations with digitalization and public trust are significant, given the small number of administrations for which this measure is available. Although standard methodologies are applied to measure the VAT compliance gap, there are differences in data sources used in gap estimation for different countries, and even though the compliance gaps are comparable for a country over time, they are not necessarily fully comparable between countries.

[40] For a more rigorous study of tax revenue yields from strengthened tax administration, see Atsebi, Gueorgiuiev, and Nose (2025).

- All the correlations are positive with the Blavatnik Index, with the strongest again being observed against digitalization (0.59), taxpayer services (0.52), and human resources management and development (0.47). There are four subindices of the Blavatnik Index (strategy and leadership, public policy, national delivery and people and processes). The correlations between all four subindices and the seven ISORA indices are also all positive. Using the Blavatnik Index as a measure of the strength of the public sector, one concludes that there is a strong correlation between the extent of tax administration good practice and public sector strength.
- Although Government Effectiveness and Regulatory Quality measure perceptions about public service and governance in general and perceptions of the tax administration contribute limitedly to these broader perceptions, there is nevertheless a positive correlation between these indices and the tax administration practice indices. Unlike many other measures, the strongest correlations are observed with human resources management and development, and the second strongest with digitalization.

Annex 1. Participants in International Survey on Revenue Administration 2023

Annex Table 1.1. ISORA Participants by the IMF Economic and Regional Group

	AE	EME		LIDC	
AFR	-	Angola	Botswana	Benin	Burkina Faso
		Cabo Verde	Equatorial Guinea	Burundi	Cameroon
		Eswatini	Gabon	Central African Republic	Chad
		Mauritius	Namibia	Democratic Republic of the Congo	Congo, Republic of
		Seychelles	South Africa	Côte d'Ivoire	Gambia, The
				Ghana	Guinea
				Guinea-Bissau	Kenya
				Lesotho	Liberia
				Madagascar	Malawi
				Mali	Mozambique
				Niger	Nigeria
				Rwanda	São Tomé and Príncipe
				Senegal	Sierra Leone
				Togo	Uganda
				Zambia	Zimbabwe

(*continued*)

Annex Table 1.1. ISORA Participants by the IMF Economic and Regional Group (Continued)

	AE		EME		LIDC	
APD	Australia	Hong Kong SAR	Brunei Darussalam	China	Bangladesh	Bhutan
	Japan	Korea	Cook Islands	Fiji	Cambodia	Kiribati
	New Zealand	Singapore	India	Indonesia	Lao P.D.R.	Nepal
	Taiwan Province of China		Malaysia	Maldives	Papua New Guinea	Solomon Islands
			Marshall Islands	Micronesia, Federal States of	Timor-Leste, Dem. Rep. of	Vietnam
			Mongolia	Nauru		
			Niue	Palau		
			Samoa	Sri Lanka		
			Thailand	Tonga		
			Tuvalu	Vanuatu		
EUR	Austria	Belgium	Albania	Belarus	Moldova	
	Croatia	Cyprus	Bosnia and Herzegovina	Bulgaria		
	Czech Republic	Denmark	Hungary	Kosovo		
	Estonia	Finland	Montenegro, Rep. of	Poland		
	France	Germany	North Macedonia	Republika Srpska		
	Greece	Iceland	Romania	Serbia		
	Ireland	Israel	Türkiye	Ukraine		
	Italy	Latvia				
	Lithuania	Luxembourg				
	Malta	The Netherlands				
	Norway	Portugal				
	Slovak Republic	Slovenia				
	Spain	Sweden				
	Switzerland	United Kingdom				

Annex Table 1.1. ISORA Participants by the IMF Economic and Regional Group (Continued)

	AE		EME		LIDC	
MCD	-		Armenia	Azerbaijan	Kyrgyz Republic	Mauritania
			Georgia	Kazakhstan	Tajikistan	Uzbekistan
			Morocco	Pakistan		
			Saudi Arabia			
WHD	Canada	United States	Anguilla	Antigua and Barbuda	Honduras	
			Argentina	Aruba		
			Barbados	Belize		
			Bermuda	Bolivia		
			Brazil	Chile		
			Colombia	Costa Rica		
			Dominica	Dominican Republic		
			Ecuador	El Salvador		
			Grenada	Guatemala		
			Guyana	Jamaica		
			Mexico	Montserrat		
			Panama	Paraguay		
			Peru	St. Kitts and Nevis		
			St. Lucia	St. Vincent and the Grenadines		
			Suriname	Trinidad and Tobago		
			Turks and Caicos Islands	Uruguay		

Source: Authors' compilation using ISORA data and IMF classifications.

Note: AE = advanced economy; AFR = Sub-Saharan Africa Department; APD = Asia and Pacific Department; EME = emerging market economy; EUR = European Department; IMF = International Monetary Fund; ISORA = International Survey on Revenue Administration; LIDC = low-income developing country; MCD = Middle East and Central Asia Department; WHD = Western Hemisphere Department.

Annex Table 1.2. Small Developing States and Fragile and Conflict-Affected States That Participated/Did Not Participate in ISORA 2023

Small Developing States		Fragile and Conflict-Affected States	
		Conflict	Institutional and Social Fragility
Antigua and Barbuda	Bahamas, The*	Afghanistan*	Burundi
Barbados	Belize	Burkina Faso	Chad

(*continued*)

Annex Table 1.2. Small Developing States and Fragile and Conflict-Affected States That Participated/Did Not Participate in ISORA 2023 (Continued)

Small Developing States		Fragile and Conflict-Affected States	
		Conflict	Institutional and Social Fragility
Bhutan	Cabo Verde	Cameroon	Comoros*
Comoros*	Djibouti*	Central African Republic	Congo, Republic of
Dominica	Eswatini	Democratic Republic of the Congo	Eritrea*
Fiji	Grenada	Ethiopia*	Guinea-Bissau
Guyana	Kiribati	Iraq*	Haiti*
Maldives	Marshall Islands	Mali	Kiribati
Mauritius	Micronesia, Fed. States of	Mozambique	Kosovo
Montenegro, Rep. of	Nauru	Myanmar*	Lebanon*
Palau	Samoa	Niger	Libya*
Seychelles	Solomon Islands	Nigeria	Marshall Islands
St. Kitts and Nevis	St. Lucia	Somalia*	Micronesia, Fed. States of
St. Vincent and the Grenadines	Suriname	South Sudan*	Papua New Guinea
São Tomé and Príncipe	Timor-Leste, Dem. Rep. of	Sudan*	São Tomé and Príncipe
Tonga	Trinidad and Tobago	Syria*	Solomon Islands
Tuvalu	Vanuatu	Ukraine	Timor-Leste, Dem. Rep. of
		West Bank and Gaza*	Tuvalu
		Yemen*	Venezuela*
			Zimbabwe

Source: Authors' compilation using ISORA data and IMF classifications.

Note: The list of small developing states was most recently reviewed in February 2020. The list of fragile and conflict-affected states is as of July 20, 2023. Economies marked with * did not participate in ISORA 2023. ISORA = International Survey on Revenue Administration.

Annex Table 1.3. Joint Tax and Customs Administrations and Tax Only Administrations in ISORA 2023

Joint Tax and Customs Administration		Tax Only Administration		
Angola	Argentina	Albania	Anguilla	Antigua and Barbuda
Armenia	Austria	Aruba	Australia	Azerbaijan
Bangladesh	Belgium	Barbados	Belarus	Belize
Bhutan	Bosnia and Herzegovina	Bermuda	Benin	Bolivia
Botswana	Brazil	Brunei Darussalam	Bulgaria	Burkina Faso
Burundi	Cabo Verde	Cambodia	Cameroon	Canada

Annex Table 1.3. Joint Tax and Customs Administrations and Tax Only Administrations in ISORA 2023 (Continued)

Joint Tax and Customs Administration		Tax Only Administration		
Central African Republic	Colombia	Chad	Chile	Hong Kong SAR
Cook Islands	Denmark	China	Democratic Republic of the Congo	Congo, Republic of
Estonia	Eswatini	Costa Rica	Côte d'Ivoire	Croatia
Fiji	Gambia, The	Cyprus	Czech Republic	Dominica
Georgia	Germany	Dominican Republic	Ecuador	El Salvador
Ghana	Greece	Equatorial Guinea	Finland	France
Guatemala	Guyana	Gabon	Grenada	Guinea
Hungary	Iceland	Guinea-Bissau	Honduras	Indonesia
India	Ireland	Italy	Jamaica	Japan
Israel	Kazakhstan	Kiribati	Korea	Kosovo
Kenya	Latvia	Kyrgyz Republic	Lao P.D.R.	Lithuania
Lesotho	Liberia	Luxembourg	Madagascar	Malaysia
Malawi	Marshall Islands	Maldives	Mali	Malta
Mauritius	Micronesia, Federal States of	Mauritania	Mexico	Moldova
Montenegro, Rep. of	Montserrat	Mongolia	Morocco	Nauru
Mozambique	Namibia	Nepal	The Netherlands	New Zealand
Pakistan	Peru	Niger	Nigeria	Niue
Poland	Portugal	Norway	Palau	Panama
Rwanda	Samoa	Papua New Guinea	Paraguay	North Macedonia
Saudi Arabia	Seychelles	Republika Srpska	Romania	São Tomé and Príncipe
Sierra Leone	Slovak Republic	Senegal	Serbia	Singapore
Slovenia	South Africa	Solomon Islands	Sri Lanka	St. Kitts and Nevis
Spain	Suriname	St. Lucia	St. Vincent and the Grenadines	Sweden
Togo	Tonga	Switzerland	Taiwan Province of China	Tajikistan

(*continued*)

Annex Table 1.3. Joint Tax and Customs Administrations and Tax Only Administrations in ISORA 2023 (Continued)

Joint Tax and Customs Administration		Tax Only Administration		
Tuvalu	Uganda	Thailand	Timor-Leste, Dem. Rep. of	Trinidad and Tobago
United Kingdom	Vanuatu	Türkiye	Turks and Caicos Islands	Ukraine
Zambia	Zimbabwe	United States	Uruguay	Uzbekistan
		Vietnam		

Source: ISORA.
Note: ISORA = International Survey on Revenue Administration.

Annex 2. Quantitative Indicators Available in International Survey on Revenue Administration

Quantitative indicators derived from data collected through International Survey on Revenue Administration and that may be used in comparative or trend analysis are shown in the table.

Annex Table 2.1 Comparative Quantitative Measures of Tax Administration Performance.

Thematic Area	Examples of Indicators	Correspondence with TADAT Indicators[1]	Useful Pointers for Users of These Indicators
Collections	Taxes collected (core taxes, other)/SSC/nontax revenue by the tax administration as percent of GDP or GGR Collection by tax type as percent of total taxes/revenue collected	Some correspondence with Tables 1A and 1B of the data tables	*World Economic Outlook* database used for GDP and GGR figures. VAT is decomposed into VAT on domestic goods, VAT on imports, and refunds.
Registration	Percent active taxpayers on register PIT taxpayers as percent of labor force	Overlap with data collected in Table 2	Not all administrations interpret "active taxpayers" in the way intended, for example, many AEs report all taxpayers on register as "active."
On-time filing	On-time filing rates for PIT, CIT, VAT, and PAYE	Aligned to TADAT definitions	ISORA data show inconsistencies in how administrations estimate "expected returns."
	Percentage of returns received that were received on time for PIT, CIT, VAT, and PAYE		Available for FY22. Significant differences to TADAT on-time filing measure (either smaller or larger) for many countries, especially LIDCs.
Electronic filing	Electronic filing rates	Aligned to TADAT definitions	
On-time payment	On-time payment rates for PIT, CIT, VAT, and PAYE	Aligned to VAT on-time payment by value	Fewer administrations (roughly half) provide data to determine on-time payments than on-time filing.
	Percentage of payments received on time for PIT, CIT, VAT, and PAYE (by value)		Available for FY 2022. Significant differences to TADAT on-time filing measure (either smaller or larger) for many countries.
Electronic payment	Percentage of payments	Not aligned to Field Guide 2025 definition	Defined as the percentage of payments (by number or value) that *the tax administration receives* electronically.

(*continued*)

Annex Table 2.1 Comparative Quantitative Measures of Tax Administration Performance (Continued)

Thematic Area	Examples of Indicators	Correspondence with TADAT Indicators[1]	Useful Pointers for Users of These Indicators
Arrears	Total arrears as percent of collections Collectible arrears as percent of arrears or collections PIT/CIT/VAT arrears as percent of PIT/CIT/VAT collected Arrears associated with SOEs as percent of total arrears Uncollectible arrears associated with SOEs as percent of uncollectible arrears	TADAT uses data for *core taxes*—arrears on core taxes as percent of collections of core taxes	Arrears data provided by some EMEs and LIDCs changes sharply year over year. Only 68 percent of participants are able to provide values for collectible debt.
Audit and verification	Assessments raised as percent of collections Assessment raised from CIT/PIT/VAT audits as percent of CIT/PIT/VAT Audit hit rate		Fewer administrations provide assessments raised by tax type (60 percent to 70 percent) than total assessments raised (80 percent).
Dispute management	Percent of cases in which court finds in favor of administration		
Human resources	Staff (measured in FTEs) to population/labor force		Ratio varies by two orders of magnitude.
Staff allocation by function	Staff allocated to key functions as percent of total staff		Available for seven categories in FY 2022, but only five categories for FY 2018 to FY 2021.
Staff demographics	Male/female/other staff as percent of all staff Male/female/other executives as percent of all executives Distribution of staff by age Distribution of staff by years of experience		
Expenditures	Operating expenditure as percent of GDP Wage bill as percent of operating budget ICT expenditure as percent of operating budget/GDP Capital expenditure as percent of operating budget		Capital and ICT expenditures are highly volatile. Capital expenditure available for all years other than FY 2022.
Efficiency ratios	Operational expenditure as percent of revenue collected (cost of collection) Core active taxpayers per FTE Returns (PIT, CIT, VAT, and PAYE) received per FTE		FTE ratios vary by three orders of magnitude.

Source: Authors' compilation.

Note: CIT = corporate income tax; FTE = full-time equivalent; FY = fiscal year; GGR = general government revenue; ICT = information and communications technology; LIDCs = low-income developing countries; PAYE = pay as you earn; PIT = personal income tax; SOE = state-owned enterprise; SSC = social security contribution; TADAT = Tax Administration Diagnostic Assessment Tool; VAT = value-added tax.

1. TADAT Field Guide 2025.

Annex 3. Data Availability Rates

The completeness levels for the numerical questions with the lowest completeness levels in each thematic grouping of indicators are presented here. The lower levels of availability impact the completeness of comparative quantitative indicators derived using the responses to these questions.

Annex Table 3.1. Numerical Questions with Lower Completeness Levels in ISORA 2023

Thematic Grouping	Questions	Lowest Completeness Level (percent)	Notes
Revenue collections	VAT collected on imports VAT refunds	86	
Resources	ICT expenditures	75	In some cases, ICT expenditure is not part of the budget allocation to the tax administration.
Segmentation	Revenue administered under HNWI program as percent of total revenue collected	58	Some administrations indicate that these figures are not available as their HNWI program is not yet fully developed.
Registration	Taxpayers (domestic manufacturers/producers) registered for excise Active domestic excise taxpayers	73	
Filing	Returns expected from employers that withhold tax from employees Returns received from employers Returns received on time from employers Return channels used by employers	73	
Payment	Value of expected PAYE payments On-time payments for PIT	53	
Arrears	Arrears associated with state-owned enterprises Arrears associated with state-owned enterprises considered noncollectible Arrears associated with employers (65)	44	Arrears data points requested have been streamlined and clarified in the past five years, but improvements in data completion levels have been limited. It is unclear whether a reluctance to be transparent about these figures is a factor limiting the provision of the data, or whether they are unavailable within the administration.

(*continued*)

Annex Table 3.1. Numerical Questions with Lower Completeness Levels in ISORA 2023 (Continued)

Thematic Grouping	Questions	Lowest Completeness Level (percent)	Notes
Audit and verification	Additional assessments raised from audits of employers Additional assessments raised from PIT (62)	48	Data inputs for audit and verification have been streamlined and clarified in past five years, but improvement in completion levels has been limited. It is unclear whether a reluctance to be transparent about these figures is a factor limiting the provision of the data, or whether they are unavailable within the administration.
Disputes	Number of cases resolved by a higher appellate court Number of cases resolved by a higher appellate court in favor of the administration	73	Unsurprisingly, fewer administrations are able to provide data about cases outside the administration.
Incoming service channels	Number of incoming service contacts by mail/post	50	

Source: Authors' compilation.

Note: HNWI = high-net-wealth individual; ICT = information and communications technology; ISORA = International Survey on Revenue Administration; PAYE = pay as you earn; PIT = personal income tax; VAT = value-added tax.

Annex 4. Accessing International Survey on Revenue Administration (ISORA) Data and Metadata

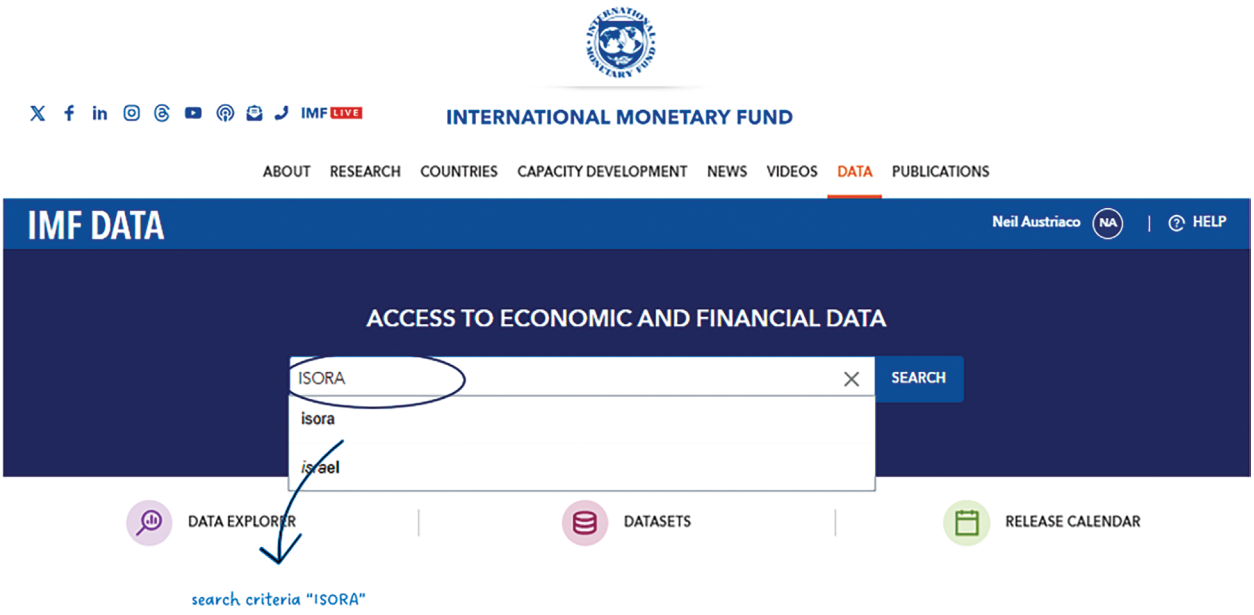
ISORA data are published on the ISORA data portal annually after data collection and data quality review are completed, generally in June of the year after collection.

Information on how to access ISORA data, questionnaires, and guides, as well as ISORA-related publications is provided here. A more complete guide is available on the portal (described here).

1. Getting to the Portal

To get to the ISORA data portal, type in isoradata.org in your browser.

ISORA data can also be found from the data.imf.org portal. Use the search box to search for "ISORA."



2. Accessing ISORA Data

ISORA data are available in different formats to suit the needs of various users. Users can download ISORA data as preformatted tables, customized tables, PowerBI tables, as well as full data set downloads in CSV or SDMX.

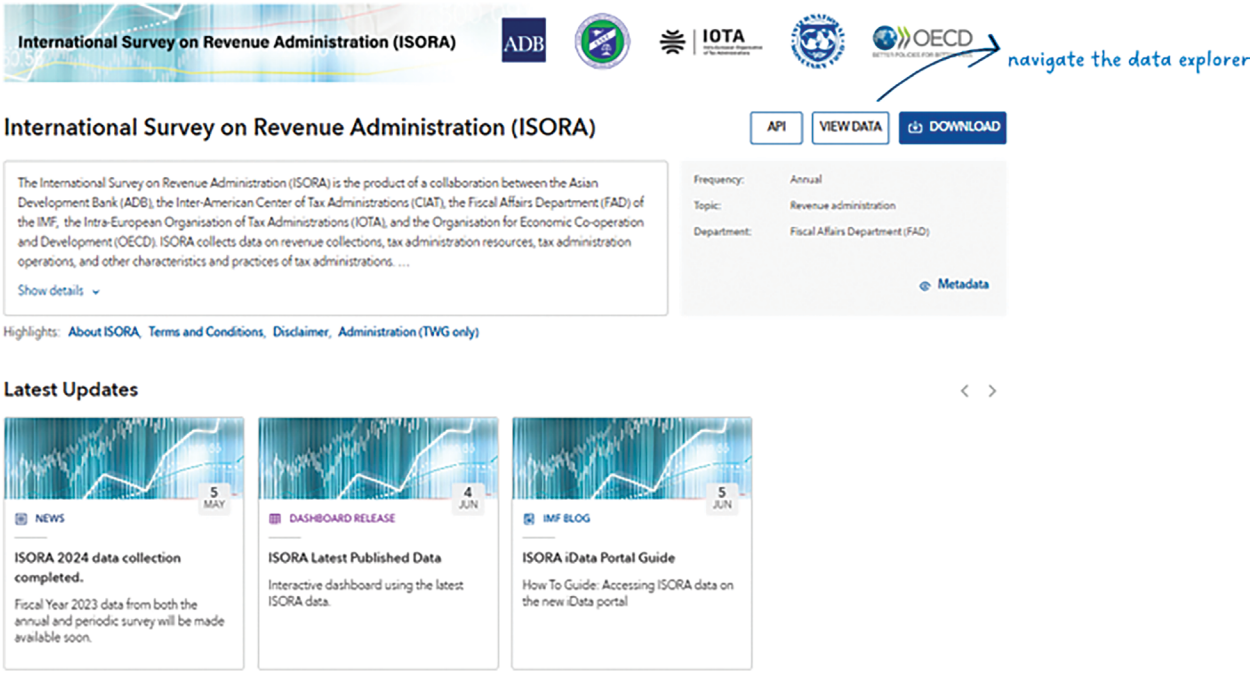
2.1 The Latest Review, Derived, and Periodic Tables

These preformatted tables, covering data for countries for FY2018 and later years, can be downloaded from the Documents section on the ISORA portal. The Review Tables display the data as reported by countries in the survey, with some revisions of data for earlier years. The Derived Tables have comparative indicators

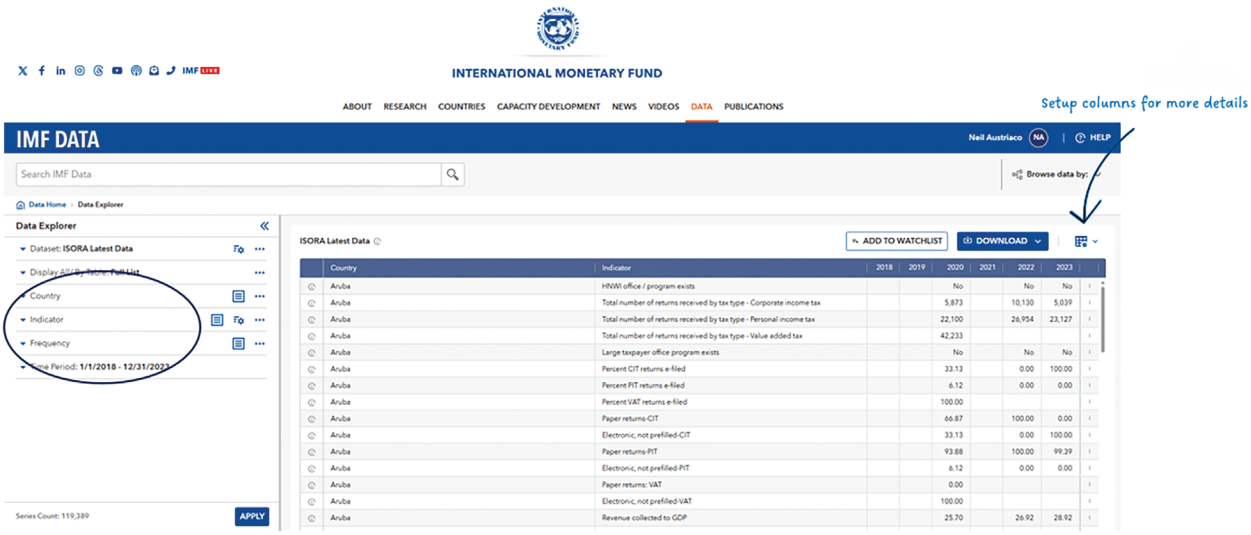
calculated using the reported data. The most recent set of Periodic Tables is for FY 2022. As the links to these tables may change, they can be found through the search function on the ISORA portal using terms 'ISORA review tables', 'ISORA derived tables', and 'ISORA periodic tables'.

2.2 Data Explorer (https://data.imf.org/en/Data-Explorer?datasetUrn=ISORA:ISORA_LATEST_DATA_PUB(4.0.0))

On the home page of the ISORA portal (http://isoradata.org), users can navigate to the Data Explorer using the "View Data" button. The Data Explorer is iData's tool to customize tables and select the data needed. By default, the Data Explorer with the latest data set will be displayed.



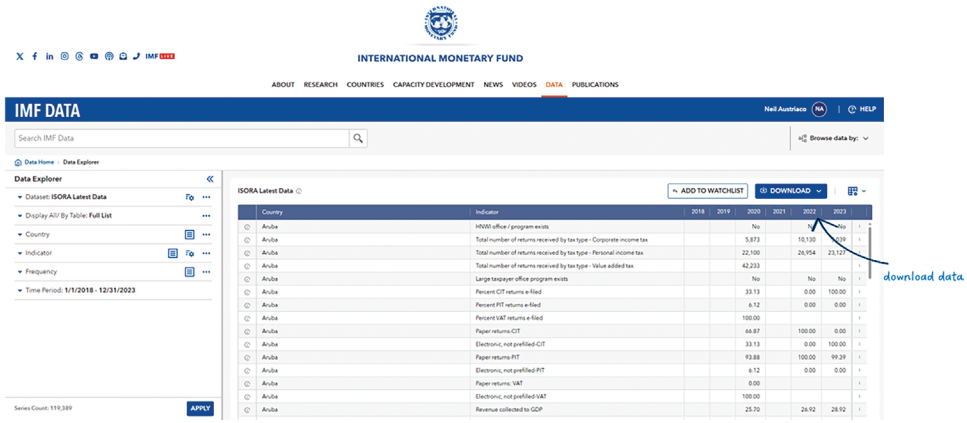
The Data Explorer allows users to select the countries, indicators, and time periods they wish to view data for. The Selection Panel on the left-hand side can be used to make these selections.



Users can search using the provided filters. With the "Full List" checked under the "Display All/By Table" option, users can select multiple countries for data comparison. Alternatively, users can search and select the indicators they are interested in and select a custom time period before hitting "Apply" to view the data.

Additional details can be shown by using "Set up columns" in the top right corner of the Data Explorer.

The selected data can be downloaded in CSV or SDMX formats. The option to download the whole data set is also available.

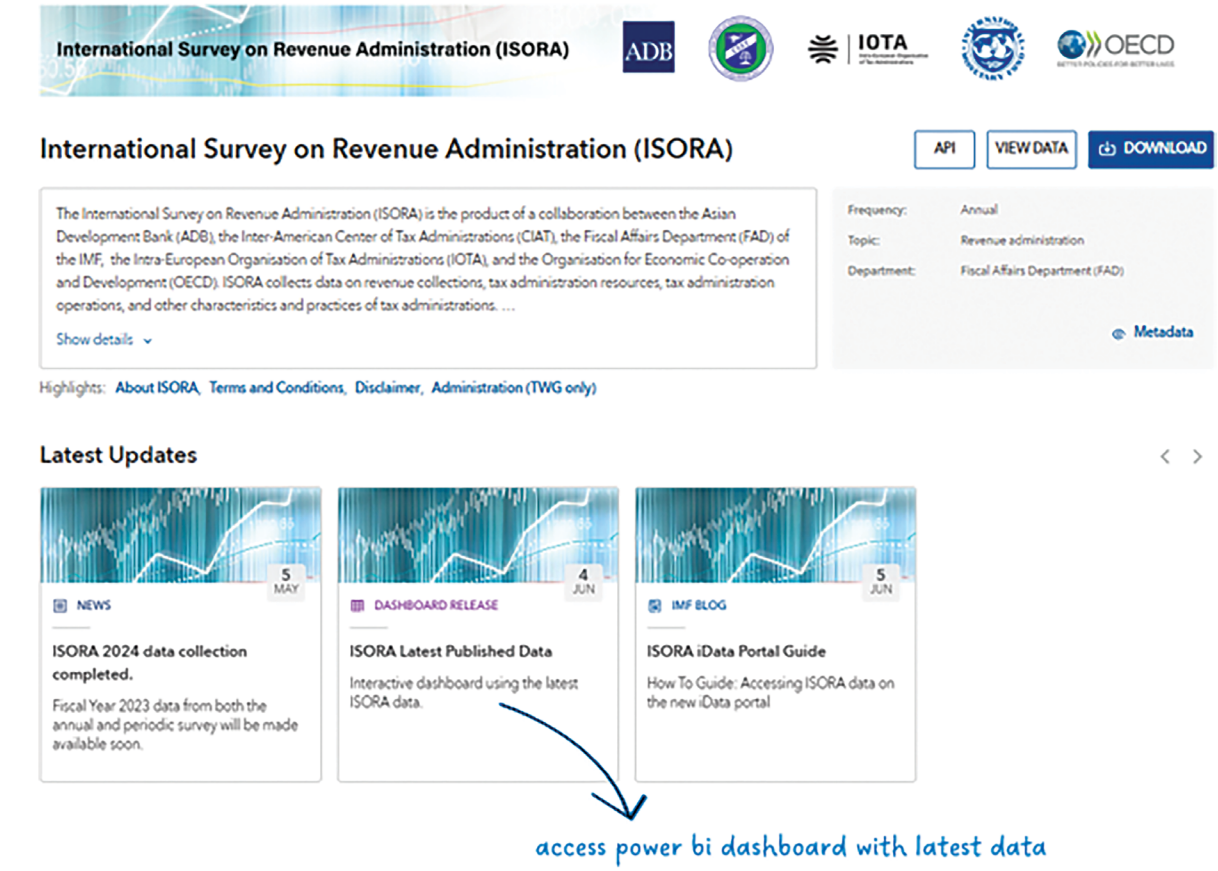


2.3 PowerBI Dashboard (https://data.imf.org/en/dashboards/isora%20data%20dashboard)

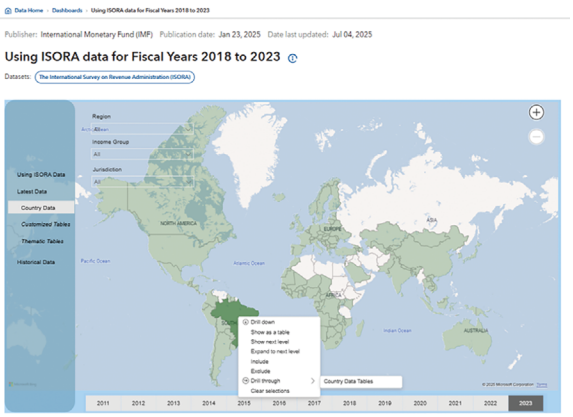
The PowerBI dashboard can be used to access ISORA data by country, using customized tables and thematic tables.

Option 1: Navigating to Latest Data and selecting a country to drill through to the country data tables.

Option 2: Alternatively, navigate directly to customized or thematic tables and use the "Filters" to select the countries, table, and indicators to be displayed.







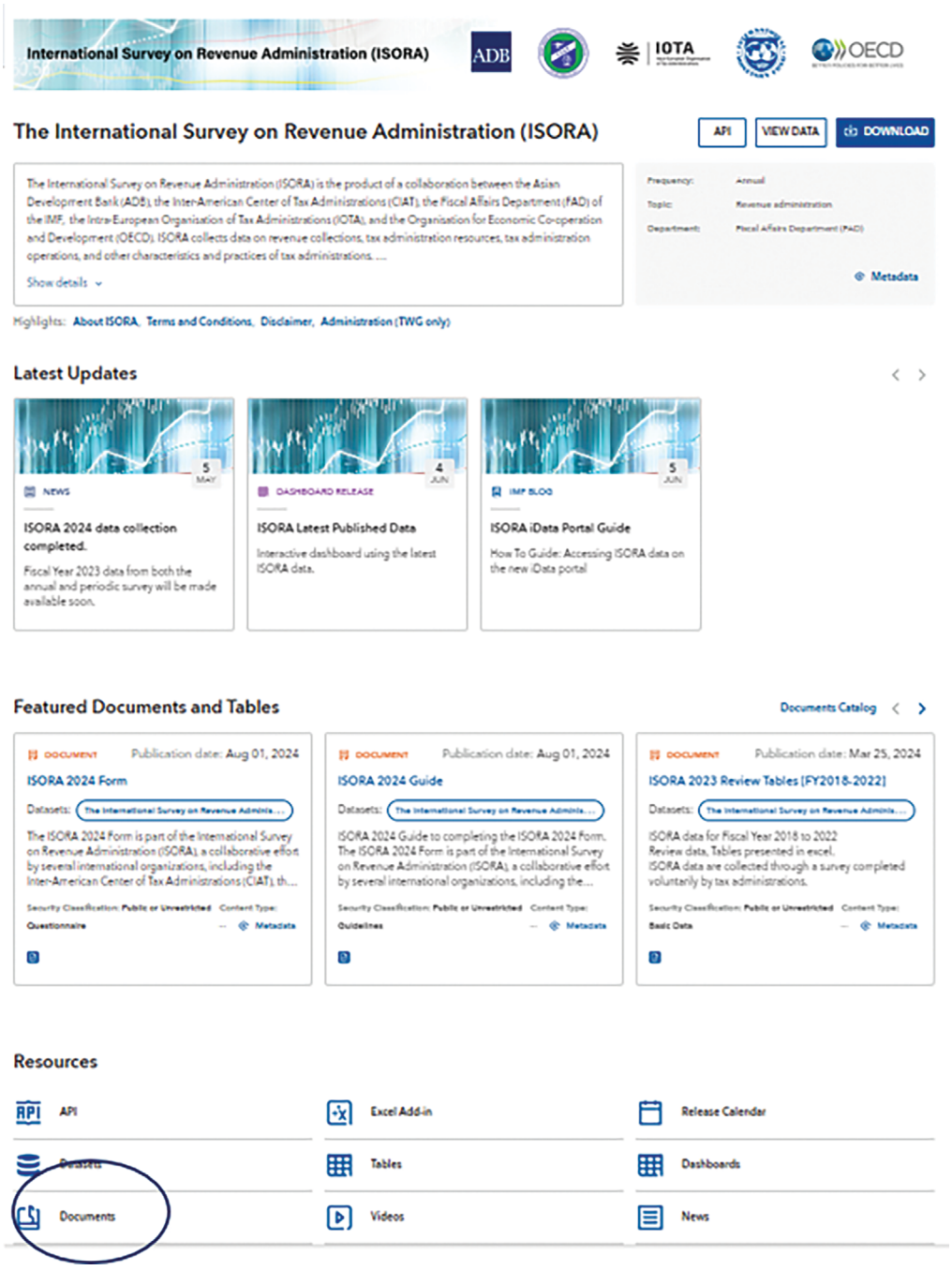
3. ISORA Forms, Guides, and Publications

(https://data.imf.org/en/Documents#t=coveo117bcfc4&sort=%40idata_publication_date%20descending&f:Datasets=[International%20Survey%20on%20Revenue%20Administration%20(ISORA)])

- The documents page is a repository of all ISORA-related documents. These include: questionnaires (https://data.imf.org/en/Documents#t=coveo117bcfc4&sort=%40idata_publication_date%20descending&f:Datasets=[International%20Survey%20on%20Revenue%20Administration%20(ISORA)]&f:DocumentType=[Questionnaire])

- guides to complete the questionnaires (https://data.imf.org/en/Documents#t=coveo117bcfc4&sort=%40idata_publication_date%20descending&f:Datasets=[International%20Survey%20on%20Revenue%20Administration%20(ISORA)]&f:DocumentType=[Guidelines])
- Various publications using ISORA data (https://data.imf.org/en/Documents#t=coveo117bcfc4&sort=%40idata_publication_date%20descending&f:Datasets=[International%20Survey%20on%20Revenue%20Administration%20(ISORA)]) .

Users can find this page by clicking "Documents Catalog" and selecting ISORA under data sets.



Annex 5. Selected Comparative Aggregate Statistics

Aggregate statistics by economic and regional groups, as well as the International Monetary Fund's regional capacity development centers,[41] are tabulated in this annex for a selection of the indicators used in the analysis presented in Chapters 3 to 5. All statistics are drawn from published ISORA responses for FY22, except where indicated otherwise.

[41] Statistics for the Middle East Regional Technical Assistance Center (METAC) are not provided as only one METAC member completed ISORA 2023.

Annex Table 5.1. ISORA 2023 Participation, Revenue Collection, and Resource Ratios

	ISORA Completion	GDP per Capita (1000s USD)	General Government Revenue as Percent of GDP	Revenue Collected to GDP	Resource Ratios				
					FTEs per 1,000 Labor Force	Core Tax Returns per FTE	Operating Budget as Percent of Revenue Collected	Salary as Percent of Operating Budget	ICT Expenditure as Percent of Total Budget
All ISORA participants	166	7.9	30.4	17.3	0.9	731.5	0.8	71.7	5.8
Economic groups									
Advanced economies	37	49.1	40.1	24.0	1.6	1614.3	0.6	72.2	9.0
Emerging market economies	83	8.2	30.1	16.1	1.1	659.2	0.8	73.4	5.3
Low-income developing countries	46	1.6	23.2	13.2	0.3	168.9	1.1	63.5	4.8
Special groups									
Fragile and conflict-affected states	23 of 39	1.7	30.9	13.2	0.3	106.3	0.9	70.1	4.2
Small developing states	31 of 34	6.9	36.3	15.6	1.4	266.1	1.4	75.0	5.3
Regional groups									
Africa	40	1.5	20.9	11.6	0.3	120.4	1.7	69.5	4.2
Asia Pacific	37	5.7	31.8	14.5	0.7	432.6	0.7	70.8	5.4
Europe	43	30.2	40.9	25.3	1.7	1526.1	0.6	73.2	7.8
Middle East and Central Asia	11	3.9	26.8	16.6	0.7	450.9	0.6	78.4	1.6
Western Hemisphere	35	13.5	28.2	15.5	0.7	742.7	0.8	75.0	7.5

(*continued*)

Annex Table 5.1. ISORA 2023 Participation, Revenue Collection, and Resource Ratios (Continued)

	ISORA Completion	GDP per Capita (1000s USD)	General Government Revenue as Percent of GDP	Revenue Collected to GDP	Resource Ratios				
					FTEs per 1,000 Labor Force	Core Tax Returns per FTE	Operating Budget as Percent of Revenue Collected	Salary as Percent of Operating Budget	ICT Expenditure as Percent of Total Budget
RCDCs									
AFC	9 of 9	1.7	22.4	9.6	0.3	30.1	2.3	91.4	1.1
AFE	4 of 8	1.1	18.1	10.2	0.1	839.6	1.4	56.2	2.5
AFS	12 of 13	3.4	25.6	15.9	0.4	313.3	1.7	72.7	4.5
AFW	10 of 10	1.2	17.7	9.2	0.3	77.2	2.1	12.7	5.5
AFW2	6 of 6	1.3	17.4	9.2	0.3	97.4	1.7	65.4	6.5
CCAMTAC	8 of 9	6.6	29.3	20.5	0.9	408.4	0.6	77.2	1.8
PFTAC	15 of 15	4.9	46.1	15.4	1.2	193.5	1.0	71.5	1.4
SARTTAC	6 of 6	2.6	19.4	12.4	0.2	576.2	0.4	73.4	6.2
CAPTAC-DR	6 of 7	8.3	18.8	13.3	0.4	2436.9	0.6	62.7	0.4
CARTAC	17 of 20	17.4	29.9	15.0	2.3	235.6	1.7	75.0	7.5
Economies not in RCDCs	72	25.7	35.2	21.4	1.1	1526.1	0.6	72.6	7.7

Sources: CIAT, IMF, IOTA, and OECD; International Survey on Revenue Administration, https://isoradata.org; data tables for FY2018 to FY 2022; Thematic Tables A.0, A.18, A.46, A.50, A.54, A.59, E.1, E.2, D.1, and D.6; and *World Economic Outlook*.

Note: The indicator "ISORA completion" is presented as a count, "GDP per Capita" is calculated as a median, the indicators under "Resource Ratios" are calculated as medians, and the remaining indicators are averages. FTE = full-time equivalent; ICT = information and communications technology; ISORA = International Survey on Revenue Administration; RCDCs = regional capacity development centers.

Annex Table 5.2. FTE and Selected Staff Metrics

	FTEs by Function (percent)			Staff by Age (percent)			Staff by Gender (percent)		Female Executives (percent of executives)
	Taxpayer Services, Returns, Payment	Audit	Arrears	34 and under	35-54	55 and over	Female	Male	
All ISORA participants	29.3	24.9	11.5	26.1	56.1	17.9	52.3	47.7	40.4
Economic groups									
Advanced economies	32.2	29.0	10.5	18.2	51.3	30.5	60.5	39.5	46.6
Emerging market economies	26.2	26.1	12.3	28.0	55.7	16.3	56.6	43.4	44.9
Low-income developing countries	32.6	18.3	10.8	29.8	61.0	9.5	37.8	62.2	27.0
Special groups									
Fragile and conflict-affected states	35.8	20.1	10.6	25.7	61.4	13.3	41.6	58.4	36.4
Small developing states	27.6	21.5	12.7	36.2	53.5	10.3	58.4	41.6	51.7
Regional groups									
Africa	33.6	16.2	10.0	24.1	65.4	10.6	41.1	58.9	29.2
Asia Pacific	31.4	25.1	13.8	36.1	52.2	11.8	53.3	46.7	40.6
Europe	28.7	32.6	10.8	16.0	52.7	31.4	60.2	39.8	46.0
Middle East and Central Asia	30.7	26.5	8.4	36.6	50.8	12.5	28.9	71.1	17.0
Western Hemisphere	24.2	22.9	12.3	26.6	56.1	17.3	61.0	39.0	52.5
RCDCs									
AFC	42.2	13.5	11.5	17.1	66.0	13.7	40.6	59.4	26.9
AFE	15.4	23.6	4.9	30.0	64.6	5.4	41.8	58.2	31.8
AFS	28.2	22.7	9.3	26.8	66.0	8.2	51.4	48.6	34.7
AFW	38.9	9.9	13.0	27.4	64.0	11.0	31.8	68.2	27.5
AFW2	41.7	12.3	8.1	17.7	66.0	16.3	34.8	65.2	21.5
CCAMTAC	23.6	26.5	13.1	37.7	51.9	10.2	35.9	64.1	21.6
PFTAC	29.3	23.7	17.0	38.4	50.3	11.3	55.1	44.9	44.2
SARTTAC	31.6	34.5	12.5	43.4	50.8	5.8	45.8	54.2	25.6
CAPTAC-DR	26.6	24.4	9.8	30.8	51.8	17.4	55.7	44.3	54.2

(*continued*)

Annex Table 5.2. FTE and Selected Staff Metrics (Continued)

	FTEs by Function (percent)			Staff by Age (percent)			Staff by Gender (percent)		Female Executives (percent of executives)
	Taxpayer Services, Returns, Payment	Audit	Arrears	34 and under	35–54	55 and over	Female	Male	
CARTAC	24.4	17.3	12.1	30.4	57.5	12.2	67.9	32.1	60.8
Economies not in RCDCs	29.1	30.1	10.8	20.6	53.3	26.3	56.5	43.5	43.2

Sources: CIAT, IMF, IOTA, and OECD; International Survey on Revenue Administration, https://isoradata.org; data tables for FY2018 to FY 2022; Thematic Tables A.18, A.25, A.26, A.27, A.46, A.50, A.59, A.54, E.2, D.6, D.7, D.8, D.12, D.13, and D.16.

Note: All indicator values presented in the table are average values for the respective groups. ICT = information and communications technology; ISORA = International Survey on Revenue Administration; RCDCs = regional capacity development centers.

Annex Table 5.3. Large Taxpayer Office/Program and HNWI Unit/Program

	LTO/P					HNWI Unit/Program	
	Has LTO/P? (as percent of partic-ipants in group)	FTEs as Percent of Total FTEs	Revenue as Percent of Total Revenue	Number of Audits as Percent of Total Audits	Additional Assessments Raised through LTO/P as Percentage of Total Value of Additional Assessments Raised from Audits	Has HNWI Unit/ Program? (as percent of participants in group)	Part of LTO/P?
All ISORA participants	86.1	6.8	53.8	14.6	46.4	28.3	29 of 47
Economic groups							
Advanced economies	78.4	3.7	41.5	2.8	28.7	40.5	10 of 15
Emerging market economies	86.7	7.7	53.0	13.5	44.6	25.3	10 of 21
Low-income developing countries	91.3	7.8	63.1	26.2	65.8	23.9	9 of 11
Special groups							
Fragile and conflict-affected states	78.3	9.8	67.9	22.7	64.8	17.4	3 of 4
Small developing states	67.7	12.4	57.7	22.4	72.3	16.1	2 of 5

Annex Table 5.3. Large Taxpayer Office/Program and HNWI Unit/Program (Continued)

	LTO/P					HNWI Unit/Program	
	Has LTO/P? (as percent of partic-ipants in group)	FTEs as Percent of Total FTEs	Revenue as Percent of Total Revenue	Number of Audits as Percent of Total Audits	Additional Assessments Raised through LTO/P as Percentage of Total Value of Additional Assessments Raised from Audits	Has HNWI Unit/ Program? (as percent of participants in group)	Part of LTO/P?
Regional groups							
Africa	95.0	8.5	65.4	28.2	59.0	30.0	7 of 12
Asia Pacific	73.0	7.5	51.4	14.0	35.0	29.7	6 of 11
Europe	86.0	4.0	40.9	4.8	25.4	30.2	8 of 13
Middle East and Central Asia	100.0	5.0	63.7	6.1	71.9	0.0	0 of 0
Western Hemisphere	85.7	8.5	54.9	16.1	61.6	31.4	8 of 11
RCDCs							
AFC	88.9	7.8	70.6	51.5	48.0	33.3	2 of 3
AFE	100.0	6.5	63.1	8.7	62.7	50.0	2 of 2
AFS	91.7	6.1	65.4	8.2	45.9	25.0	1 of 3
AFW	100.0	12.6	66.3	33.7	68.4	30.0	2 of 3
AFW2	100.0	9.3	63.0	53.1	69.6	16.7	0 of 1
CCAMTAC	100.0	3.6	60.7	6.4	77.2	12.5	1 of 1
PFTAC	60.0	13.9	62.7	25.0	53.9	13.3	1 of 2
SARTTAC	83.3	5.0	35.5	13.6	40.0	33.3	1 of 2
CAPTAC-DR	100.0	7.1	59.7	14.1	58.1	16.7	1 of 1
CARTAC	70.6	11.4	54.5	22.5	88.4	17.6	2 of 3
Economies not in RCDCs	87.5	4.6	45.3	6.4	27.7	36.1	16 of 26

Sources: CIAT, IMF, IOTA, and OECD; International Survey on Revenue Administration, https://isoradata.org; data tables for FY18 to FY22; and Thematic Table A.0, A.39, A.34, A40, A.80, D.17, and D.18.

Note: The indicators "Has LTO/P? (as percent of participants in group)" and "Has HNWI Unit/Program? (as percent of participants in group)" are presented as percentages, "Part of LTO/P?" is reported as a count, and all other indicators are averages. FTE = full-time equivalent unit; HNWI = high-net-wealth individual; ISORA = International Survey on Revenue Administration; LTO/P = large taxpayer office/program; RCDCs = regional capacity development centers.

Annex Table 5.4. On-Time Filing, On-Time Payment, and Registration

	Percent of Returns Received on Time				Percent of Payments Received on Time				Active Taxpayers (percent)		
	PIT	CIT	VAT	Employer Withholding	PIT	CIT	VAT	Employer Withholding	PIT to Labor Force	CIT to Labor Force	VAT to Labor Force
All ISORA participants	65.3	58.5	76.1	68.1	69.0	81.0	81.2	81.5	33.2	4.3	3.5
Economic groups											
Advanced economies	91.7	81.4	87.5	88.9	83.3	88.1	86.1	90.1	122.8	10.7	15.9
Emerging market economies	59.9	54.6	75.9	67.3	63.9	80.9	82.5	85.0	28.2	4.4	3.4
Low-income developing countries	47.4	45.9	62.7	54.4	63.1	74.0	72.0	65.2	0.9	0.3	0.2
Special groups											
Fragile and conflict-affected states	66.3	51.7	64.9	64.1	87.4	90.9	84.1	94.0	1.0	0.4	0.2
Small developing states	43.4	36.8	75.3	65.8	49.4	70.9	84.4	87.9	20.1	5.4	2.2
Regional groups											
Africa	41.1	42.3	58.6	49.8	55.1	75.1	74.2	69.2	0.4	0.4	0.2
Asia Pacific	57.9	48.9	67.1	61.0	83.7	88.3	82.0	84.9	28.2	4.4	2.9
Europe	91.5	80.8	89.5	85.1	82.1	89.4	86.6	90.7	112.7	10.0	11.7
Middle East and Central Asia	81.6	76.9	83.9	70.1	69.8	70.5	66.0	61.9	19.4	1.5	0.9
Western Hemisphere	52.3	49.7	76.0	70.1	54.0	75.0	83.2	82.8	36.2	4.8	3.9
RCDCs											
AFC	73.9	77.1	75.4	83.8	70.0	75.3	91.0	82.7	0.3	0.1	0.1
AFE	21.4	21.8	81.8	56.0	57.3	87.9	83.3	87.1	2.7	1.0	0.2
AFS	30.8	23.3	44.9	35.7	60.8	71.4	56.7	62.0	14.8	5.5	1.3
AFW	50.1	58.7	56.9	42.2	52.1	65.6	67.3	39.4	0.4	0.1	0.1
AFW2	30.5	44.0	65.9	54.1	50.7	84.1	85.5	76.1	0.7	0.3	0.3

Annex Table 5.4. On-Time Filing, On-Time Payment, and Registration (Continued)

	Percent of Returns Received on Time				Percent of Payments Received on Time				Active Taxpayers (percent)		
	PIT	CIT	VAT	Employer Withholding	PIT	CIT	VAT	Employer Withholding	PIT to Labor Force	CIT to Labor Force	VAT to Labor Force
CCAMTAC	91.5	87.0	89.2	83.2	76.8	68.3	65.2	70.7	20.9	3.0	1.1
PFTAC	42.6	33.8	57.0	55.3	84.6	95.9	94.4	96.6	6.3	4.3	1.3
SARTTAC	46.8	41.0	62.3	57.9	71.7	62.5	78.2	82.9	15.9	0.2	3.1
CAPTAC-DR	58.8	69.6	56.1	74.2	73.6	78.6	89.0	85.9	15.2	3.8	6.7
CARTAC	31.8	26.9	86.2	66.7	39.2	65.8	84.2	86.8	62.4	5.5	2.2
Economies not in RCDCs	86.2	76.6	87.1	83.8	78.6	89.6	84.6	86.4	103.7	8.5	11.7

Source: CIAT, IMF, IOTA, and OECD; International Survey on Revenue Administration, https://isoradata.org; data tables for FY2018 to FY2022. Thematic Table A.42, A.41, A.44, E.2, D.23, D.22, D.25, D.24, D.36, D.37, D.39, and D.38.

Note: The indicator under "Active Taxpayers (percent)" are calculated as medians, and the remaining indicators are averages. CIT = corporate income tax; ISORA = International Survey on Revenue Administration; PIT = personal income tax; RCDCs = regional capacity development centers; VAT = value-added tax.

Annex Table 5.5. Electronic Filing and Electronic Payment

	Number Where E-Filing Is Available				E-Filing Rate (percent)			E-Payment Availability (as percent of partici-pants in group)	E-Payment (percent, by value)
	PIT	CIT	VAT	PAYE	PIT	CIT	VAT		
All ISORA participants	134 of 159	137 of 160	132 of 148	133 of 155	85.6	88.3	90.5	89.8	75.5
Economic groups									
Advanced economies	37 of 37	37 of 37	35 of 35	34 of 34	86.6	93.0	97.7	91.9	87.8
Emerging market economies	63 of 76	66 of 77	65 of 71	65 of 76	84.4	86.5	86.7	91.6	69.1
Low-income developing countries	34 of 46	34 of 46	32 of 42	34 of 45	86.9	84.5	85.8	84.8	76.8
Special groups									
Fragile and conflict-affected states	14 of 23	13 of 22	11 of 19	12 of 22	44.4	49.0	45.6	82.6	56.4
Small developing states	19 of 30	20 of 29	17 of 24	19 of 29	45.1	39.3	43.3	83.9	44.6
Regional groups									
Africa	31 of 40	30 of 40	30 of 38	30 of 39	88.0	88.4	88.1	82.5	81.5
Asia Pacific	25 of 35	27 of 35	22 of 27	24 of 33	81.1	78.2	84.7	89.2	61.0
Europe	42 of 42	42 of 42	42 of 42	42 of 42	86.1	97.7	98.6	90.7	96.2
Middle East and Central Asia	9 of 10	11 of 11	11 of 11	10 of 10	99.9	80.4	80.4	90.9	84.4
Western Hemisphere	27 of 32	27 of 32	27 of 30	27 of 31	84.4	81.7	80.9	97.1	58.7
RCDCs									
AFC	5 of 9	5 of 9	5 of 8	5 of 9	No data	No data	No data	55.6	35.8
AFE	4 of 4	3 of 4	4 of 4	4 of 4	100.0	100.0	100.0	75.0	95.0
AFS	10 of 12	10 of 12	10 of 12	10 of 12	77.0	77.5	78.7	100.0	84.8
AFW	7 of 10	8 of 10	8 of 10	7 of 9	100.0	67.3	67.3	80.0	66.8
AFW2	5 of 6	5 of 6	4 of 5	5 of 6	84.7	91.9	92.9	100.0	99.2

Annex Table 5.5. Electronic Filing and Electronic Payment (Continued)

	Number Where E-Filing Is Available				E-Filing Rate (percent)			E-Payment Availability (as percent of participants in group)	E-Payment (percent, by value)
	PIT	CIT	VAT	PAYE	PIT	CIT	VAT		
CCAMTAC	8 of 8	8 of 8	8 of 8	8 of 8	100.0	100.0	100.0	87.5	100.0
PFTAC	5 of 14	6 of 13	4 of 9	6 of 14	73.5	52.3	59.0	85.7	43.3
SARTTAC	6 of 6	5 of 6	5 of 5	5 of 6	72.5	95.1	90.7	83.3	78.3
CAPTAC-DR	6 of 6	6 of 6	6 of 6	6 of 6	98.5	99.7	100.0	100.0	82.0
CARTAC	9 of 14	9 of 14	10 of 13	10 of 14	49.3	42.1	43.6	100.0	34.0
Economies not in RCDCs	68 of 69	71 of 71	67 of 67	66 of 66	87.8	95.3	98.2	91.8	88.0

Source: CIAT, IMF, IOTA, and OECD; International Survey on Revenue Administration, https://isoradata.org; data tables for FY2018 to FY2022; Thematic Table D.26, D.27, and A.71.

Note: The indicators under "Number Where E-Filing Is Available" are presented as counts, and "E-Payment (percent, by value)" is calculated as a percentage, and all other indicators are averages. CIT = corporate income tax; ISORA = International Survey on Revenue Administration; PAYE = pay as you earn; PIT = personal income tax; RCDCs = regional capacity development centers; VAT = value-added tax.

Annex Table 5.6. Arrears and Audit

	Arrears As Percent of Revenue Collected	Audit Assessments Raised As Percent of Revenue Collected
All ISORA participants	18.3	4.2
Economic groups		
Advanced economies	8.0	2.3
Emerging market economies	31.3	3.5
Low-income developing countries	14.7	7.5
Special groups		
Fragile and conflict-affected states	34.3	4.1
Small developing states	57.8	2.6
Regional groups		
Africa	27.3	7.5
Asia Pacific	12.9	3.1
Europe	10.2	2.6
Middle East and Central Asia	14.9	4.6
Western Hemisphere	47.4	4.2
RCDCs		
AFC	41.3	15.8
AFE	31.1	16.5
AFS	29.0	4.7
AFW	13.8	6.6
AFW2	11.0	4.0
CCAMTAC	12.0	3.6
PFTAC	19.0	1.2
SARTTAC	65.9	6.7
CAPTAC-DR	34.1	12.6
CARTAC	78.2	1.7
Economies not in RCDCs	9.8	3.0

Sources: CIAT, IMF, IOTA, and OECD; International Survey on Revenue Administration, https://data.rafit.org; data tables for FY2018 to FY2022; Thematic Table D.41 and D.46.

Note: The indicator "Arrears as Percent of Revenue Collected" is the median of the group, and "Audit Assessments Raised as Percent of Revenue Collected" is an average. ISORA = International Survey on Revenue Administration; RCDCs = regional capacity development centers.

Annex Table 5.7. The Seven Indices and Data Availability Rate

	Indices							Data Availability
	Compliance Management	Digitalization	Governance	HR Management and Development	Management Autonomy	Public Trust	Taxpayer Services	
All ISORA participants	61.8	56.7	73.0	63.0	71.6	46.7	62.9	81.0
Economic groups								
Advanced economies	70.1	75.4	83.0	81.0	84.2	63.6	74.3	86.5
Emerging market economies	59.2	52.7	69.6	58.6	68.7	41.5	58.9	83.0
Low-income developing countries	59.8	49.1	71.3	56.5	66.7	42.6	61.1	73.0
Special groups								
Fragile and conflict-affected states	52.7	40.7	60.2	46.4	51.9	34.6	50.5	70.4
Small Developing States	48.9	33.4	54.9	43.7	53.4	26.6	43.8	84.5
Regional groups								
Africa	60.2	48.2	71.0	57.0	69.5	43.6	58.9	71.6
Asia Pacific	57.9	49.2	69.0	61.3	66.9	39.1	59.1	79.3
Europe	67.8	71.2	81.8	74.5	80.8	61.4	72.0	85.6
Middle East and Central Asia	65.8	65.0	79.5	66.7	76.4	48.5	71.3	79.7
Western Hemisphere	58.9	54.2	66.8	56.5	66.1	39.6	57.8	88.4
RCDCs								
AFC	56.5	34.8	52.5	32.0	48.1	25.9	41.1	51.9
AFE	79.0	63.8	89.3	85.5	89.8	51.4	84.9	82.2
AFS	55.2	48.9	77.7	68.5	81.2	50.8	63.1	78.5

(*continued*)

Annex Table 5.7. The Seven Indices and Data Availability Rate (Continued)

	Indices							Data Availability
	Compliance Management	Digitalization	Governance	HR Management and Development	Management Autonomy	Public Trust	Taxpayer Services	
AFW	57.8	48.1	64.4	41.8	55.2	38.7	55.7	67.3
AFW2	66.8	57.7	83.5	77.7	84.6	58.0	64.4	87.9
CCAMTAC	68.2	73.7	81.5	62.0	78.2	52.5	76.3	83.2
PFTAC	47.4	27.6	57.1	47.9	54.8	23.5	40.6	83.7
SARTTAC	55.6	42.9	60.0	43.0	56.8	48.1	55.4	80.2
CAPTAC-DR	59.4	61.9	79.9	56.7	71.0	59.9	71.7	87.5
CARTAC	46.8	35.6	50.7	41.3	54.7	16.8	39.1	87.4
Economies not in RCDCs	69.1	71.4	82.4	77.0	81.1	58.7	73.9	83.6

Source: Seven indices on tax administration topics have been developed by the authors as tools to assist ISORA users. Each index is an attempt to distill a large amount of data into a format suitable for comparisons between and among participants or groups of participants. Details on these example indices are provided in Annex 7.

Note: All indicator values presented in the table are average values for the respective groups. HR = human resources; ISORA = International Survey on Revenue Administration; RCDCs = regional capacity development centers.

Annex 6. Indices Using International Survey on Revenue Administration (ISORA) Data

This annex provides high-level comparative information on indices constructed using ISORA data to aid users of these indices and those interested in constructing their own indices for other analyses.

Indices for analysis of tax administration were created even prior to ISORA. There is an example of the use of data from a precursor survey to ISORA to create an index: Using the survey conducted by the Organisation for Economic Co-operation and Development of 56 countries (OECD 2015), Crivelli (2019) constructed a "tax administration strength" index using data for FY 2013 and determined the relationship between 15 components of the index and tax efficiency indicators for countries in Europe.

Table A6.1 describes various indices and sets of indices developed for comparative analysis of tax administration from ISORA.

Annex Table 6.1. Use of ISORA Data in Indices

Index Origin: Institution, Authors, and Publication	ISORA Data Used	Nature of Indices/Index	Purpose/How Used
IMF: Crandall, Gavin, and Masters (2019)	ISORA 2016. 39 categorical and yes/no data points for FY 2015.	Four independent indices, composed of equally weighted components, covering the following: • meeting performance standards • management and HR autonomy • public accountability • service orientation	Comparison of groups of tax administrations, by for example, income, institutional arrangements, small states, and fragile states.
OECD (2019)	ISORA 2018. 15 yes/no data points for FY 2017.	Innovation index, composed of equally weighted data points	Calculated and presented as innovation level benchmark for 58 administrations for FY 2017.
IMF: Chang and others (2020)	ISORA 2016 and 2018. 66 yes/no data points used for FY 2014 to FY 2017.	OSI, composed of seven equally weighted subindices: • compliance risk management • use of third-party data • degree of digitalization • service orientation • public accountability • autonomy • LTO/P (existence thereof)	Used to identify a positive relationship between tax administration strength (as measured by the OSI) and the subindices (individually) and revenue collected by the tax administration, taking tax policy changes and macroeconomic factors into account.

(*continued*)

Annex Table 6.1. Use of ISORA Data in Indices (Continued)

Index Origin: Institution, Authors, and Publication	ISORA Data Used	Nature of Indices/Index	Purpose/How Used
IMF: Crandall, Gavin, and Masters (2021)	ISORA 2018.	Seven indices, composed of weighted elements: • management and human resources autonomy • public accountability • general management • human resources management • service orientation • compliance risk-management foundations • degree of digitalization	Comparison of groups of tax administrations, by for example, income, institutional arrangements, small states, fragile states. Examined correlations with performance measures (on-time filing, arrears) and efficiency measures (taxpayers per FTE, cost of collection).
CIAT: Díaz de Sarralde Miguez and Morán (2022)	ISORA 2020. 9 categorical and 7 yes/no data points; 14 quantitative indicators constructed from numerical responses.	INDITEC, with four equally weighted subindices: • technological innovation • compliance improvement • operational digitalization • resources and budget (INDICTEC2 is constructed from the first three subindices.)	Developed as a tool for benchmarking tax administrations internationally. Comparisons of scores of groups of tax administrations (by area, income group, organizational membership, and individual CIAT members.
OECD, *Tax Administration* (2024)	ISORA 2023 High-level description provided: Weighted averages of responses to categorical and yes/no questions to create two sets of indices.	*Control and other oversight features:* • preparation of documents • publication of documents • oversight features *People management:* • talent recruitment and retention • learning and development • staff motivation and performance • diversity management	Presented to provide a high-level picture of (1) control and other oversight features and (2) people management. Distribution of scores for each index presented for comparison to identify relative strengths and weaknesses in tax administration in FY22. Scores for individual administrations not provided.
CIAT: Garcimartín and Díaz de Sarralde Miguez (2025)	ISORA 2023. 156 variables, mostly "yes/no" data points (seven quantitative indicators mapped to three-point scale).	IFIAT, compiled from five (composite) dimensions using weights determined from principal component analysis: • management autonomy • governance: control and planning • personnel management • taxpayer relations • available resources	Create a measure of the institutional strength of tax administrations, as a tool for identifying best practices and international comparisons. Group statistics and individual scores tabulated. Correlation with three performance indicators calculated.

Annex Table 6.1. Use of ISORA Data in Indices (Continued)

Index Origin: Institution, Authors, and Publication	ISORA Data Used	Nature of Indices/Index	Purpose/How Used
IMF: Atsebi, Gueorguiev, and Nose (2025)	ISORA 2023, as well as earlier vintages. 193 categorical and "yes/no" data points.	OSI: compiled from nine subindices. Elements within the subindices are weighted, as are the nine subindices, using a Delphi approach. The nine subindices are as follows: • compliance risk management • use of third-party data • degree of digitalization • service orientation • public accountability • autonomy • LTO and HNWI • tax enforcement • human resources management and development	Develop a more granular OSI for use in estimating the revenue gains from tax administration reforms, which can be defined across five fiscal years (FY 2014 to FY 2017, FY 2022). Analysis undertaken using the OSI to estimate revenue gains and the impact of other factors on revenue yields.
This paper *(indices also used in G20 Background Note)* (IMF, 2025)	ISORA 2023. 239 categorical or "yes/no" data points.	Seven indices compiled from weighted components are as follows: • compliance management • digitalization • governance • human resources management and development • management autonomy • public trust • taxpayer services The simple unweighted average of these indices (normalize to a 1-to-100 scale) is also calculated.	Comparative analysis of groups of tax administrations. Exploration of the relationship between the indices and tax administration resourcing and performance.

Source: Authors' compilation.

Note: CIAT = Inter-American Center of Tax Administrations; FTE = full-time equivalent; FY = fiscal year; HR = human resources; HNWI = high-net-wealth individual; IFIAT = Institutional Strength Index of Tax Administrations; IMF = International Monetary Fund; INDITEC = Innovation, Digitalization and Technology Index; ISORA = International Survey on Revenue Administration; LTO = large taxpayer office; LTO/P = large taxpayer office/program; OECD = Organisation for Economic Co-operation and Development; OSI = Operational strength index.

Annex 7. Structure of the Seven Fiscal Year (FY) 2022 Indices and Examples of Responses by Economic Grouping

The first seven tables provide the index components and associated weightings for the indices used in the analysis in Chapter 5. The references are to the questions in the International Survey on Revenue Administration 2023 questionnaire, which was organized into 12 forms. The questionnaire is available on the International Survey on Revenue Administration portal (http://isoradata.org).

The eighth (and final) table provides the percentage of positive responses to index elements where the largest differences are observed between tax administrations in advanced economies and lower-income developing countries.

Annex Table 7.1. Compliance Management

Component	Form	Question	Weight
Formal strategy and approach			
Does the administration have a formal compliance risk-management strategy?	EP	P6 a)	3
Is there a formal approach for assessing and prioritizing key compliance risks for two or more of the following?	EP	P6 b)	3
i) Return filing	EP	P6 b) i)	
ii) Payment processing	EP	P6 b) i)	
iii) Collection enforcement	EP	P6 b) i)	
iv) Verification/audit	EP	P6 b) i)	
v) Taxpayer services	EP	P6 b) i)	
Does the administration's general approach to compliance include the following?	EP	P11 a)	
(i) Providing a proportionate response to noncompliance	EP	P11 a) i)	0.5
(ii) Providing opportunities for taxpayers to correct mistakes or omissions in tax returns voluntarily	EP	P11 a) ii)	0.5
(iii) Ensuring taxpayers benefit if they make early disclosure of errors or omissions and if they fully cooperate with the administration	EP	P11 a) iii)	0.5
(iv) Reminding and encouraging taxpayers to fulfill all tax obligations	EP	P11 a) iv)	0.5
Does the administration make key compliance risks public regularly?	EP	P6 c)	2
Does the administration make reports of outcomes in addressing compliance risks public regularly?	EP	P6 e)	2
Are tax gaps produced for any tax type?	EP	P10	2

Annex Table 7.1. Compliance Management (Continued)

Component	Form	Question	Weight
Data used in managing compliance			
Are electronic invoices used to monitor compliance?	G	Q4 a)	1
Are there computer-based systems for managing the following third-party data?	GP	P11	
(i) Customs data	GP	P11 a)	0.5
(ii) Data from stock exchanges	GP	P11 b)	0.5
(iii) Data from the Social Security Agency	GP	P11 c)	0.5
(iv) Data from online (internet-based) vendors	GP	P11 d)	0.5
(v) Data from Utilities (for example, electricity)	GP	P11 e)	0.5
(vi) Data on property ownership and sales	GP	P11 f)	0.5
Does your administration undertake fully automated compliance checks (that is, without human intervention) based on data matching or analysis?	FP	P4 a)	1
Are the following payments to individuals reported to the administration?	GP	P10	
(i) Wage and salary	GP	P10 a)	1
(ii) Dividends	GP	P10 b)	0.5
(iii) Interest	GP	P10 c)	0.5
(iv) Rents	GP	P10 d)	0.5
(v) Specified business income	GP	P10 e)	0.5
(vi) Royalties, patents	GP	P10 f)	0.5
(vii) Proceeds of sales/purchase of shares	GP	P10 g)	0.5
(viii) Proceeds of sales/purchases of real estate	GP	P10 h)	0.5
(ix) Other income	GP	P10 i)	0.5
Are automated verifications undertaken?	F	Q8 b)	1
Segmentation and structure			
Does the administration have a large taxpayer office/program?	A	Q3 a)	2
Does the administration have an office/program to manage HNWI?	A	Q3 b)	2
Does the administration have specialized audit staff for international tax issues?	EP	P9 a)	1
Does the administration enter into APAs?	EP	P9 b)	1
Interventions and audits			
Does the tax administration have, or is it developing, a formal framework for compliance interventions?	EP	P11 b)	2

(*continued*)

Annex Table 7.1. Compliance Management (Continued)

Component	Form	Question	Weight
Does the administration undertake any of the following interventions before returns are filed?	EP	P12	
(i) Facilitating taxpayer access to third-party data already collected by the tax administration	EP	P12 a)	0.5
(ii) Targeting campaigns to encourage compliance	EP	P12 b)	0.5
(iii) Reminding taxpayers of filing deadlines	EP	P12 c)	0.5
(iv) Providing information on predetermined compliance interventions	EP	P12 d)	0.5
Does the administration undertake any of the following interventions after returns have been filed, but before any formal audit action has been triggered?	EP	P13	
(i) Identifying inconsistencies in returns through crossmatching of data from third-party sources	EP	P13 a)	1
(ii) Identifying anomalies or outliers through data analytics in order to prompt taxpayer disclosure	EP	P13 b)	1
(iii) Risk reviews	EP	P13 c)	1
(iv) Requesting further information	EP	P13 d)	1
Which types of audits does the administration undertake after filing?	EP	P15 a)	
(i) Desk audits	EP	P15 a) i)	1
(ii) Single-issue audits	EP	P15 a) ii)	1
(iii) Limited-scope audits	EP	P15 a) iii)	1
(iv) Comprehensive audits	EP	P15 a) iv)	1
(v) Avoidance and evasion investigations	EP	P15 a) v)	1
Which of the following indicators are used to measure the effectiveness of enforcement (audit) actions?	EP	P15 b)	
(i) Audit coverage (percentage of taxpayers affected)	EP	P15 b) i)	1
(ii) Value of additional assessments raised through audit	EP	P15 b) ii)	1
(iii) Percentage of audits that yield a positive result	EP	P15 b) iii)	1
Does the administration measure the effectiveness of any of the interventions checked?	EP	P14 a)	1
Does the administration have standards for auditor productivity?	EP	P15 c)	1
Are random audits conducted?	FP	P5 a)	1
Penalties and sanctions			
Does the administration apply administrative sanctions for taxpayer nondisclosure?	FP	P7 a)	1
Is there a common administrative penalty framework for this offense (nondisclosure) across the major tax types (that is, CIT, PIT, and VAT)?	FP	P7 b) i)	0.5

Annex Table 7.1. Compliance Management (Continued)

Component	Form	Question	Weight
Do the penalties imposed generally take account of taxpayers' culpability (that is, degree of blame)?	FP	P7 b) ii)	0.5
Is the administration empowered to make public details of some/all taxpayers subject to administrative penalties imposed for this offense (nondisclosure)?	FP	P7 b) iv)	0.5
Weighted maximum score			52.5

Source: Authors.
Note: CIT = corporate income tax; HNWI = high-net-wealth individual; PIT = personal income tax; VAT = value-added tax.

Annex Table 7.2. Digitalization

Component	Form	Question	Weight
Innovation and advanced technologies			
Are any of the following innovative technologies in place?	G	Q7	
(i) Distributed ledger technology/blockchain	G	Q7 a)	0.3
(ii) AI, including machine learning	G	Q7 b)	0.3
(iii) Cloud computing	G	Q7 c)	0.3
(iv) Data science/analytics tools	G	Q7 d)	0.3
(v) RPA	G	Q7 e)	0.3
(vi) APIs	G	Q7 f)	0.3
(vii) Whole-of-government identification systems	G	Q7 g)	0.3
(viii) Digital identification technology (for example, biometrics, voice identification)	G	Q7 h)	0.3
(ix) Virtual assistants (for example, chatbots)	G	Q7 i)	0.3
Does the administration identify inconsistencies in returns through crossmatching of data from third-party sources?	EP	P13 a)	2
Does the administration identify anomalies or outliers through data analytics in order to prompt taxpayer disclosure?	EP	P13 b)	2
Does the administration undertake fully automated compliance checks (that is, without human intervention) based on data matching or analysis?	FP	P4 a)	2
(i) If "yes," are potential compliance issues automatically communicated to the taxpayer?	FP	P4 b)	1
Does the administration make use of predictive modeling to formally initiate a verification/audit intervention?	FP	P6 b)	2
Are automated verifications undertaken?	F	Q8 b)	2
Registration, filing, and payment			
Is an e-registration channel available?	G	Q1 i)	1

(*continued*)

Annex Table 7.2. Digitalization (Continued)

Component	Form	Question	Weight
Are e-filing channels used for any of the tax types?	F	Q2 d) ii)–iv)	3
Does the administration provide the percentage of electronic payments in number and value?	F	Q5	3
Does the administration prefill any income or expense items in tax returns?	G	Q3	2
Digital services			
Which of the following web-based services are available?	GP	P3	
(i) Tax calculators	GP	P3 a)	0.3
(ii) Requesting extensions of deadlines	GP	P3 b)	0.3
(iii) Asking for tax payment arrangements	GP	P3 c)	0.3
(iv) Secure communication with taxpayers	GP	P3 d)	0.3
(v) Filing tax-related objections	GP	P3 e)	0.3
(vi) Uploading data files onto the tax administration's system	GP	P3 f)	0.3
(vii) A taxpayer portal that provides a "whole-of-taxpayer" view across the major taxes	GP	P3 g)	0.3
(viii) Ability to view taxpayer information from third parties	GP	P3 h)	0.3
Does the administration provide mobile applications to access taxpayer account information?	GP	P3 i)	0.3
Does the administration provide special services for digitally disadvantaged taxpayers?	GP	P2 f)	1
Third-party data management			
Are there computer-based systems for managing the following third-party data?	GP	P11	
(i) Customs data	GP	P11 a)	0.5
(ii) Data from stock exchanges	GP	P11 b)	0.5
(iii) Data from the Social Security Agency	GP	P11 c)	0.5
(iv) Data from online (internet-based) vendors	GP	P11 d)	0.5
(v) Data from Utilities (for example, electricity)	GP	P11 e)	0.5
(vi) Data on property ownership and sales	GP	P11 f)	0.5
Does the administration receive data from devices that register transactions?	G	Q5 a)	2
Does the administration facilitate taxpayer access to third-party data already collected before filing?	EP	P12 a)	1
Weighted maximum score			33

Source: Authors.
Note: AI = Artificial intelligence; APIs = Application programming interfaces; RPA = Robotic process automation.

Annex Table 7.3. Governance

Component	Form	Question	Weight
Does the tax administration:			
(i) Produce its strategic plan?	CP	P5 a)	3
(ii) Produce its annual business/operations plans?	CP	P5 b)	3
(iii) Produce a formal set of service delivery standards?	CP	P5 d)	3
(iv) Produce its annual report?	CP	P5 c)	3
Compliance and engagement with taxpayers			
Does the administration have a formal compliance risk-management strategy?	EP	P6 a)	3
Does the administration make key compliance risks public regularly?	EP	P6 c)	2
Does the administration make reports of outcomes in addressing compliance risks public regularly?	EP	P6 e)	2
Does the administration have a formal taxpayer service and assistance strategy?	GP	P6 a)	3
Does the administration publish the results of taxpayer satisfaction surveys for:	GP	P7	
(i) Individual taxpayer?	GP	P7 a)	2
(ii) Business taxpayer?	GP	P7 b)	2
Does the administration have a document that formally sets out taxpayer rights?	GP	P4 a)	3
Does the administration have a specific mechanism for managing taxpayer complaints:	GP	P5	
(i) Internal?	GP	P5 a)	2
(ii) External?	GP	P5 b)	2
Are rulings provided to taxpayers?	GP	P9 a)	3
Authority and strategy regarding staff			
Does the tax administration publish its organizational chart?	CP	P7 a)	2
Is a formal diversity policy included in the administration's HRM approach?	DP	P6 h)	3
Does the administration have the authority in regard to most staff, to:			
(i) Make appointments of new staff?	DP	P1 b)	3
(ii) Decide on promotion of existing staff?	DP	P1 c)	3
(iii) Decide skills and qualifications required for appointment or promotion?	DP	P1 d)	2
(iv) Terminate employment?	DP	P1 g)	3
(v) Apply disciplinary sanctions?	DP	P1 h)	3
Does the administration have an HR strategy?	DP	P6 a)	3

(*continued*)

Annex Table 7.3. Governance (Continued)

Component	Form	Question	Weight
Does the administration have a public service–wide code of conduct that applies to its staff?	CP	P4 c)	2
Does the administration have its own code of conduct?	CP	P4 d)	
Authority			
Does the administration determine its own internal structure?	CP	P3 a)	3
Does the administration exercise discretion over the operating budget?	CP	P3 b)	3
Does the administration exercise discretion over the capital budget?	CP	P3 c)	2
Does the administration establish performance standards?	CP	P3 d)	3
Does the administration have an internal audit (assurance) function?	CP	P4 b)	3
Does the administration have an integrity strategy?	CP	P4 e)	3
Weighted maximum score			77

Source: Authors.
Note: HR = human resources; HRM = human resources management.

Annex Table 7.4. Human Resources Management and Development

Component	Form	Question	Weight
Formal strategies and policies			
Does the administration have an HR strategy/multiyear work force plan?	DP	P6 a)	3
Does the administration have a training strategy in place?	DP	P6 b)	2
Are there specific leadership and talent management programs?	DP	P6 f) i)	2
Does the administration have a diversity policy?	DP	P6 h)	3
Does the administration have a staffing plan?	DP	P6 d)	2
Does the administration have a recruitment plan?	DP	P6 d) i)	2
Does the administration have policies for flexible working arrangements?	DP	P6 e)	1
Does the administration have a time-reporting system?	DP	P6 g)	1
Does the administration have a formal program(s) to support new staff?	DP	P6 c)	1
Is there a formal induction program for new staff?	DP	P6 c) i)	1
Is there a formal mentoring program for new staff?	DP	P6 c) ii)	1
Is there a formal training cycle process?	DP	P6 b) i)	1
Is there a specific training plan?	DP	P6 b) ii)	1
Does the administration assess current and future capability needs?	DP	P7	1
Does a formal plan exist to address gaps in staff capability?	DP	P7 iv)	1
Is knowledge transfer personalized, that is, one-to-one knowledge transfer?	DP	P6 f) ii)	1

Annex Table 7.4. Human Resources Management and Development (Continued)

Component	Form	Question	Weight
Is knowledge transfer documented, that is, converting knowledge into products, such as documents or videos that can be consumed by many?	DP	P6 f) iii)	1
Does the administration have either one of:			1
(i) A public service–wide code of conduct that applies to its staff?	CP	P4 c)	
(ii) Its own code of conduct?	CP	P4 d)	
Can staff work flexible working hours?	DP	P6 e) i)	1
Can staff work from home/elsewhere occasionally?	DP	P6 e) ii)	1
Can staff work from home/elsewhere regularly?	DP	P6 e) iii)	1
Can executives work part-time?	DP	P6 e) iv)	1
Staff engagement			
Does the administration periodically survey staff on diversity and inclusion?	DP	P5 b)	1
Does the administration periodically survey staff? For "yes", must include all of the following elements:			2
(i) Assess staff engagement	DP	P5 a) i)	
(ii) Share results with staff	DP	P5 a) ii)	
(iii) Engage staff in action plans	DP	P5 a) iii)	
Authorities of the administration			
Can the administration:			
(i) Make appointments of new staff?	DP	P1 b)	3
(ii) Decide on promotion of existing staff?	DP	P1 c)	3
(iii) Decide skills and qualifications required for appointment or promotion?	DP	P1 d)	2
(iv) Terminate employment?	DP	P1 g)	3
(v) Apply disciplinary sanctions?	DP	P1 h)	3
Performance management			
Does the administration have staff performance management system that includes all the following elements?			2
(i) Individual plans	DP	P3 a)	
(ii) Specific objectives	DP	P3 b)	
(iii) Annual evaluation	DP	P3 c)	

(*continued*)

Annex Table 7.4. Human Resources Management and Development (Continued)

Component	Form	Question	Weight
Is performance linked to pay? must include both:	DP	P4	1
(i) More pay for good performance	DP	P4 a)	
Either one of:			
(i) Reduced pay for poor performance	DP	P4 b)	
(ii) Denial of increment for poor performance	DP	P4 c)	
Weighted maximum score			50

Source: Authors.
Note: HR = human resources.

Annex Table 7.5. Management Autonomy

Component	Form	Question	Weight
Does the tax administration:			
Determine (design) its own internal structure?	CP	P3 a)	3
Exercise discretion over the operating budget?	CP	P3 b)	3
Exercise discretion over the capital budget?	CP	P3 c)	2
Establish performance standards?	CP	P3 d)	2
Can the tax administration:			
Determine work requirements?	DP	P1 a)	2
Make appointments of new staff?	DP	P1 b)	3
Decide on promotion of existing staff?	DP	P1 c)	3
Decide skills and qualifications required for appointment or promotion?	DP	P1 d)	2
Place staff within a salary range?	DP	P1 f)	1
Terminate employment?	DP	P1 g)	3
Apply disciplinary sanctions?	DP	P1 h)	2
Are pay scales at the administration independent of civil/public sector pay scales?	DP	P2	1
Weighted maximum score			27

Source: Authors.

Annex Table 7.6. Public Trust

Component	Form	Question	Weight
Does the tax administration:			
Publish its strategic plan?	CP	P5 a)	3
Publish its annual business/operations plans?	CP	P5 b)	3
Publish its annual report?	CP	P5 c)	3
Publish a formal set of service delivery standards?	CP	P5 d)	3
Make key compliance risks public regularly?	EP	P6 c)	2

Annex Table 7.6. Public Trust (Continued)

Component	Form	Question	Weight
Make reports of outcomes in addressing compliance risks public regularly?	EP	P6 e)	2
Publish the results of taxpayer satisfaction surveys for:			
(i) Individuals?	GP	P7 a)	0.5
(ii) Businesses?	GP	P7 b)	0.5
Have a document that formally sets out taxpayer rights?	GP	P4 a)	3
Have a specific mechanism for managing taxpayer complaints:	GP	P5	
(i) Internal?	GP	P5 a)	1
(ii) External?	GP	P5 b)	1
Publish periodic estimates of the tax gap?	EP	P10	1
Publish a formal strategy to reduce compliance burden?	GP	P13 b) vi)	2
Publish its organizational chart?	CP	P7 a)	2
Weighted maximum score			27
Source: Authors.			

Annex Table 7.7. Taxpayer Services

Component	Form	Question	Weight
Strategy and rights			
Does the administration have a formal set of service delivery standards?	CP	P5 d)	2
Does the administration have a formal taxpayer service and assistance strategy?	GP	P6 a)	3
Are taxpayer rights set out in a formal document?	GP	P4 a)	3
Complaints and rulings			
Is there a specific internal mechanism for managing taxpayer complaints?	GP	P5 a)	2
Is there a specific external mechanism for managing taxpayer complaints?	GP	P5 b)	
Are rulings provided to taxpayers?	GP	P9 a)	3
Taxpayer compliance burden			
Does the administration evaluate taxpayer compliance burden?	GP	P13 a)	1
Are perceptions of compliance burdens measured?	GP	P13 b) ii)	0.5
Is the compliance burden monitored for different taxpayer segments?	GP	P13 b) iv)	0.5
Is there a formal strategy to reduce compliance burdens?	GP	P13 b) v)	1
Education and accommodation			
Are educational services provided to children, youth, and students?	GP	P8 a) i)	1

(*continued*)

Annex Table 7.7. Taxpayer Services (Continued)

Component	Form	Question	Weight
Are educational services provided to new businesses?	GP	P8 a) ii)	1
Has the administration implemented any taxpayer education or awareness campaigns targeting a particular gender?	GP	P8 b)	1
Are free tax services (including accounting and benefit information) provided for lower-income individuals?	GP	P8 a) iii)	1
Are free tax services provided for new businesses?	GP	P8 a) iv)	1
Is special provision made for taxpayers with disabilities?	GP	P2 a)	1
Are special services provided for digitally disadvantaged taxpayers?	GP	P2 f)	1
Are services (telephonically) provided in languages other than the official languages?	GP	P2 d)	0.5
Are services (on the web or apps) provided in languages other than the official languages?	GP	P2 e)	0.5
Technology in service			
Does the administration use virtual assistants (for example, chatbots)?	G	P7 i)	1
Does the administration use whole-of-government identification systems?	G	P7 g)	1
Does the administration use social media to distribute information?	GP	P2 b)	0.5
Does the administration use social media interactively?	GP	P2 c)	0.5
Does the administration provide the following online services?			
(i) Tax calculators	GP	P3 a)	0.3
(ii) Requesting extensions of deadlines	GP	P3 b)	0.3
(iii) Asking for tax payment arrangements	GP	P3 c)	0.3
(iv) Secure communication with taxpayers	GP	P3 d)	0.3
(v) A taxpayer portal that provides a "whole-of-taxpayer" view across the major taxes	GP	P3 g)	0.3
(vi) Ability to view taxpayer information captured from third parties (for example, employers, financial institutions, and so on)	GP	P3 h)	0.3
(vii) Mobile applications (this includes commercial arrangements with third parties who may provide applications for the administration)	GP	P3 i)	0.3
(viii) Filing tax-related objections	GP	P3 e)	0.3
(ix) Uploading data files onto the tax administration's system	GP	P3 f)	0.3
Analysis of service			
Does the administration conduct taxpayer satisfaction surveys for:			
(i) Individuals?	GP	P7 a)	1
(ii) Businesses?	GP	P7 b)	1

Annex Table 7.7. Taxpayer Services (Continued)

Component	Form	Question	Weight
(iii) Intermediaries?	GP	P7 c)	0.5
Has the administration undertaken any analysis of taxpayer satisfaction based on gender?	GP	P7 e)	0.5
Does the administration use statistics about service channel usage to:			
(i) Encourage service adoption by taxpayers (for example, promote self-service)?	GP	P1 a)	0.5
(ii) Create new or improved services?	GP	P1 b)	0.5
(iii) Anticipate service demand to adjust staff allocation?	GP	P1 c)	0.5
(iv) Reduce ICT service disruption?	GP	P1 d)	0.5
Does the administration keep track of incoming service contacts?	G	Q2 a)	1
Registration, filing, and payment			
Does the administration offer more than one registration channels?	G	Q1	1
Does the administration provide some level of electronic filing (across tax types)?	F	Q2 d)	2
Does the administration provide some level of electronic payments (across tax types)?	F	Q5	2
Does the administration offer some level of income/expense prefilling?	G	Q3	1
Weighted maximum score			42

Source: Authors.
Note: ICT = information and communications technology.

Annex Table 7.8. Index Elements Exhibiting the Largest Differences in Response by AEs and LIDCs

(In percent of responses)

Index Element	Index	AE Score Rate	EME Score Rate	LIDC Score Rate	AE-LIDC Percentage Point Difference
Offering some level of income/expense prefilling	TS	81.1	36.1	10.9	70.2
Does the administration enter into APAs?	CM	91.9	41.0	28.3	63.6
Does the administration prefill any income or expense items in tax returns?	DG	81.1	41.0	19.6	61.5
Technologies implemented: data science/analytics tools	DG	86.5	31.3	26.1	60.4
Have policies for flexible working arrangements?	HRMD	97.3	51.8	37.0	60.3
Have systems for importing, storing, and managing the third-party data: data from the Social Security Agency?	CM, DG	86.5	39.8	30.4	56.1
Is special provision made for taxpayers with disabilities?	TS	91.9	54.2	37.0	54.9

(*continued*)

Annex Table 7.8. Index Elements Exhibiting the Largest Differences in Response by AEs and LIDCs (Continued)

Index Element	Index	AE Score Rate	EME Score Rate	LIDC Score Rate	AE-LIDC Percentage Point Difference
Does the administration have specialized audit staff for international tax issues?	CM	89.2	48.2	41.3	47.9
Does the administration facilitate taxpayer access to third-party data already collected before filing?	CM, DG	78.4	45.8	32.6	45.8
Technologies implemented: whole-of-government identification systems	TS	75.7	30.1	30.4	45.2
Are services (on the web or app) provided in languages other than the official languages?	TS	81.1	41.0	37.0	44.1
Have systems for importing, storing, and managing the third-party data: data on property ownership and sales?	CM, DG	78.4	54.2	34.8	43.6
Annual report—produced (published)	PT	89.2	54.2	45.7	43.5
Are automated verifications undertaken?	CM, DG	86.5	43.4	43.5	43.0
Technologies implemented: virtual assistants (for example, chatbots)	TS	62.2	25.3	19.6	42.6
Is an e-registration channel available?	DG	94.6	66.3	52.2	42.4
Online services: tax calculators	TS, DG	86.5	62.7	45.7	40.8
Educational services to new businesses	TS	56.8	77.1	67.4	-10.6
Payments to individuals reported to the administration: proceeds of sales/purchases of real estate	CM	43.2	36.1	54.3	-11.1
Have systems for importing, storing, and managing the third-party data: customs data?	CM, DG	75.7	73	87.0	-11.3
Payments to individuals reported to the administration: proceeds of sales/purchase of shares	CM	45.9	34.9	58.7	-12.7
Does the administration have a large taxpayer office/ program?	CM	78.4	86.7	91.3	-12.9
Payments to individuals reported to the administration: other income	CM	40.5	47.0	54.3	-13.8
Have systems for importing, storing, and managing the third-party data: data from utilities (for example, electricity)?	CM, DG	16.2	28.9	30.4	-14.2
Free tax services (including accounting and benefit information) for lower-income individuals	TS	37.8	32.5	54.3	-16.5
Pay scales at the administration are not tied to civil/ public sector pay scales	MA	13.5	20.5	32.6	-19.1

Annex Table 7.8. Index Elements Exhibiting the Largest Differences in Response by AEs and LIDCs (Continued)

Index Element	Index	AE Score Rate	EME Score Rate	LIDC Score Rate	AE-LIDC Percentage Point Difference
Has the administration implemented any taxpayer education or awareness campaigns targeting a particular gender?	TS	2.7	10.8	26.1	-23.4
Free tax services for new businesses	TS	32.4	44.6	63.0	-30.6
Are electronic invoices used to monitor compliance?	CM	16.2	47.0	50.0	-33.8
Payments to individuals reported to the administration: rents	CM	32.4	51.8	71.7	-39.3

Source: Authors' calculations.

Note: AE = advanced economy; APA = Advance Pricing Agreement; CM = compliance management; EME = emerging market economy; DG = Digitalization; HRMD = human resources management and development; LIDC = low-income developing country; MA = management autonomy; PT = public trust; TS = taxpayer services.

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