VAT Gap Analysis and Kenya's Experience

Joseph Sirengo, MBS
Chief Manager, Research & Surveys
Kenya Revenue Authority

2025 ATI General Assembly
22nd – 24th July 2025, Addis Ababa, Ethiopia

Outline

1. Introduction: Kenya VAT System
2. VAT Revenue Performance
3. Study Objectives: Estimate the Current VAT Gap
4. Methodology: RA-GAP VAT Gap Estimation Model
5. VAT Gap Analysis Findings
6. Summary of Key Findings
7. Recommendations
8. Next Steps

Introduction: Kenya VAT System

- VAT was introduced in January 1990 to replace the sales tax system and is charged on the consumption of taxable goods and services supplied or imported into Kenya.

- **VAT Rates:**
  - **Standard VAT rate** of 16%.
  - **Zero Rate applicable to**: *Exports of goods and services, Pharmaceutical products and medical supplies, Educational materials, Fertilizers and agricultural pest control products, Supply of international transport services (air and sea).*

- **Reduced rate was abolished:**
  - Before 2014, a reduced VAT rate of 12% applied to diesel, fuel oil for generators and electricity.
  - A lower 8% VAT rate was introduced in 2018 for petroleum products but was increased to 16% in 2023.

Introduction: Kenya VAT System…

- The VAT registration threshold is **KES 5 million** in annual turnover.

- **Exempt Items**: Basic foodstuffs, Healthcare and medical supplies, Educational services, Agricultural and livestock inputs, Petroleum goods on transition

- **Withholding VAT System**:
  - Reintroduced in Sept. 2014 under the Finance Act, 2014. Requires appointed withholding agents to withhold a portion of VAT and remit it directly to KRA.
  - Initially, withholding VAT was 6% out of the 16% VAT levied on supplies.
  - The Finance Act, 2015 expanded its scope to include non-governmental agencies.
  - Currently, withholding VAT is 2% out of the 16% VAT levied on supplies.

VAT Revenue Performance

- Between 2017 and 2024, VAT revenue recorded fluctuations influenced by economic conditions and policy changes

Figure 1: VAT Revenue in Nominal Terms, 2017-2024

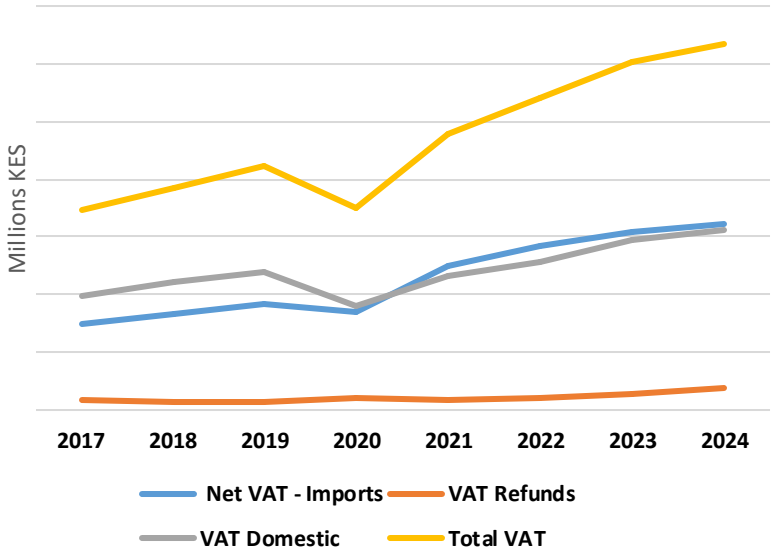
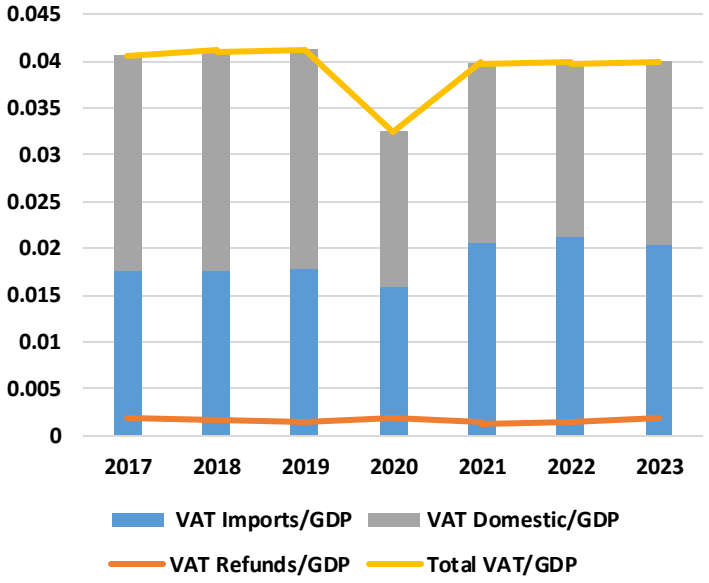


Figure 2: VAT Revenues to GDP, 2017-2023



Study Objective: Estimate the Current VAT Gap

❖ **Previous 2019 VAT Gap Analysis**

- The 2019 VAT Gap Analysis Report for Kenya provided a detailed examination of the country's VAT gap for the period between 2016 and 2017, using the top down approach of the Revenue Administration Gap Analysis Program (RA-GAP).

  - **Overall VAT gap in 2017**: 48% of the revenue potential; 10.2% of GDP.
  - **VAT compliance gap in 2017:** 4.2% of GDP. Significant compliance gaps were observed in the manufacturing, construction, wholesale and retail, transport and storage sectors.
  - **Policy Gap in 2017:** 6.1% of GDP
  - **VAT c-efficiency:** was relatively flat over the period 2009 - 2016 at around 0.31, which compares to the average c-efficiency for African countries over the same period of 0.34.

What is a Tax Gap?

- **Usual definition:** difference between actual and potential tax collections, given the current policy framework.

RA-GAP uses a broader definition: for VAT, the difference between actual and potential tax using a theoretical policy framework that assumes a single standard rate applied to all consumption.

Compliance gap

Difference between actual collections and potential collections given the current policy framework **(assuming perfect compliance)**

Policy gap

Difference between potential collections given the current policy framework and those under a comprehensive policy framework such as a single rate, broad base.

(given the current composition of GDP)

Methodology
RA-GAP VAT Gap Estimation Model

- RA-GAP VAT Gap Estimation Model used to estimate the VAT gap for the years 2017 to 2023 using accounts data from KNBS and tax administration data from KRA
- **IMF's RA-GAP** framework applies a **top-down approach** for estimating the VAT gap – ***VAT Gap Estimation Model developed runs on Excel and Python***

Estimate **potential VAT** revenues, using statistical data from national accounts (assuming no non-compliance) – KNBS Data

Calculate **actual VAT** collections from detailed taxpayer returns and payments data – KRA Data

Potential VAT – actual VAT = **VAT gap**

VAT Legislation and Policy Parameters

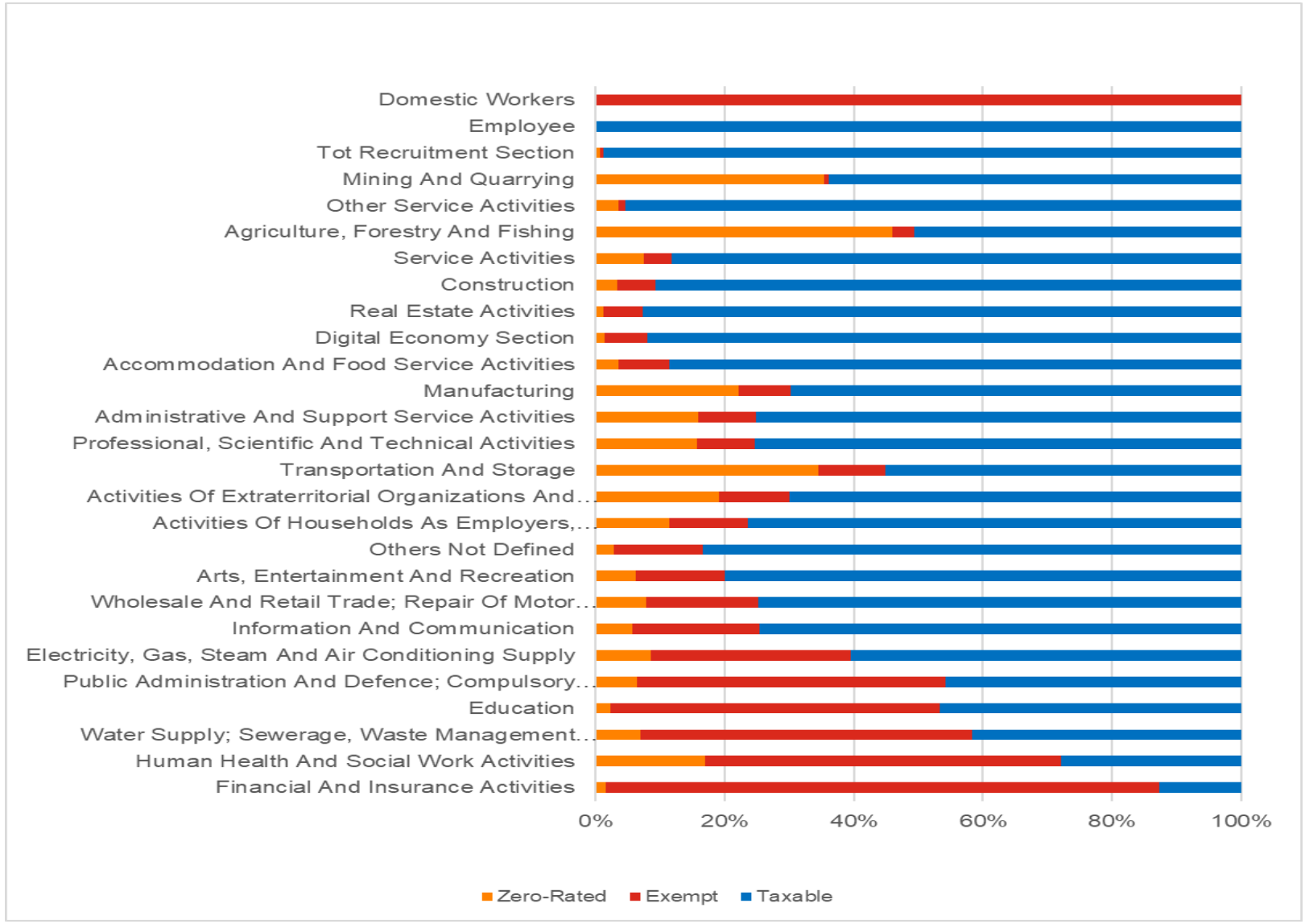
- The standard VAT rate is 16% for all years from 2017 to 2023, with exception of 2020 when it was reduced to 14%.

- The registration threshold for VAT is KES 5 million, around US$ 40,000. Kenya's GDP per capita ~ 1,800 US dollars, meaning that a significant part of production is not subject to VAT and needs careful modelling.

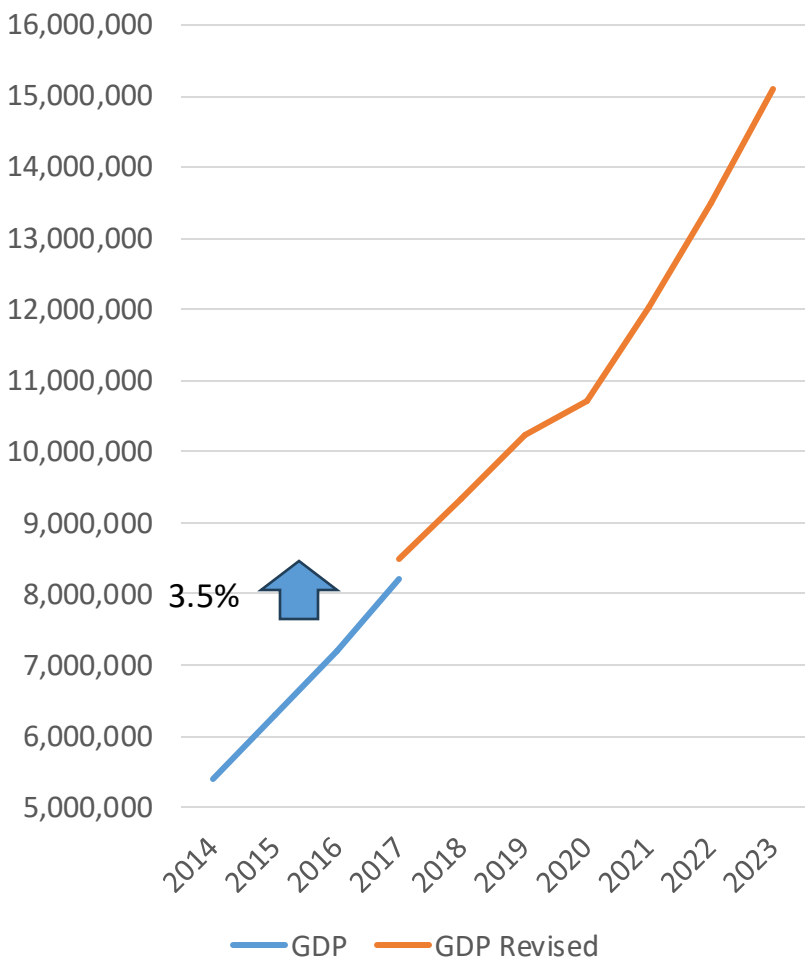
- Kenya's VAT system is characterized by numerous exempt and zero-rated products that influence potential VAT.

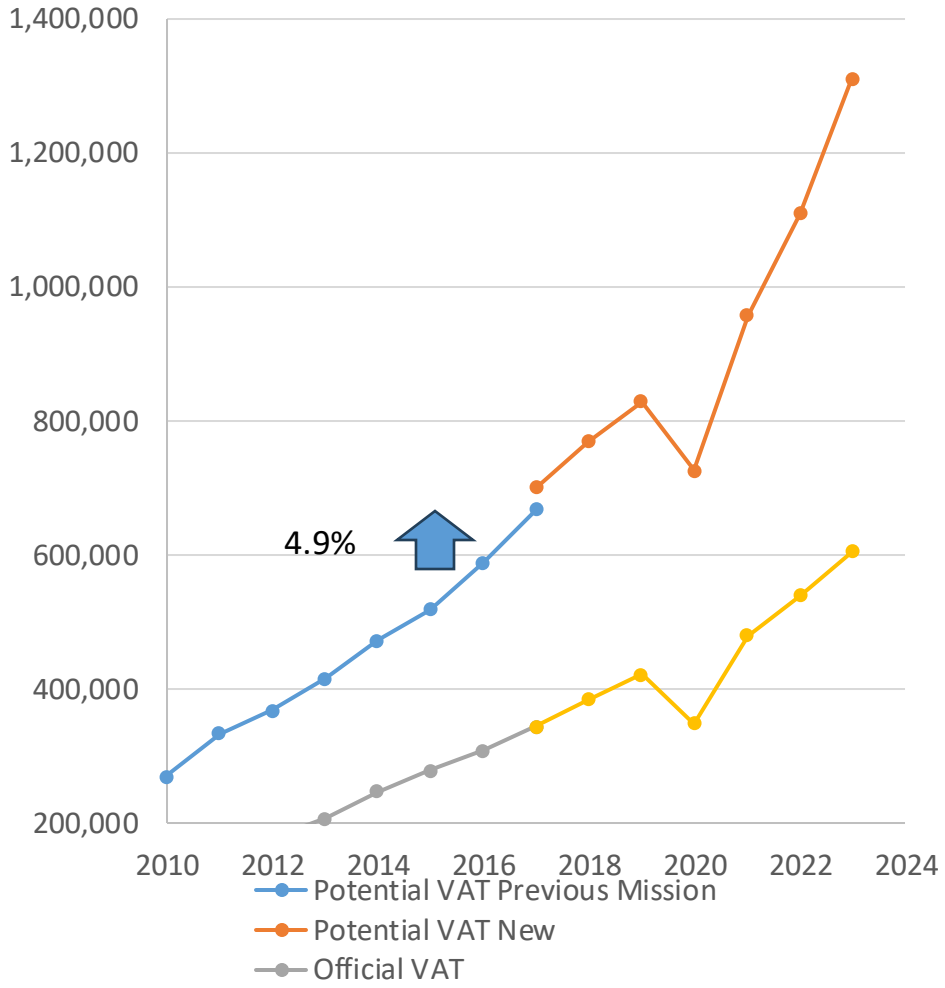
- Export processing zones (EPZ) needed re-calibration of policy parameters.

Proportion of Exempt, Zero-Rated and Taxable Commodities, 2023



Potential VAT and National Accounts Data: New VAT Gap Estimate Not Comparable to 2019





Model Estimation

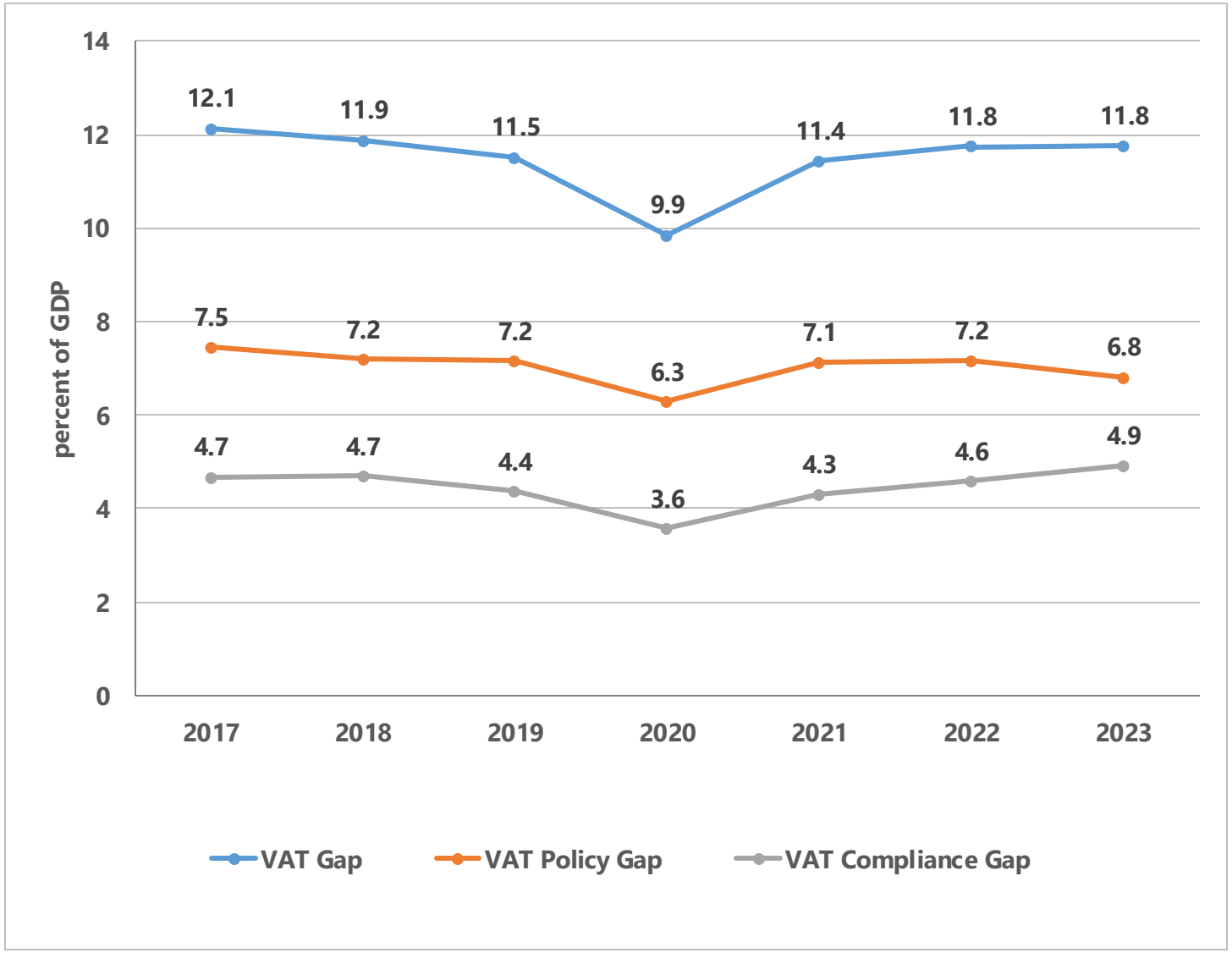
- Execution of the VAT gap model provided the estimation of time series of VAT gap from 2017 to 2023, providing compliance gap and policy gap.

- Newly developed Python Model was tested on model workbooks and exactly same results obtained as original Excel model.

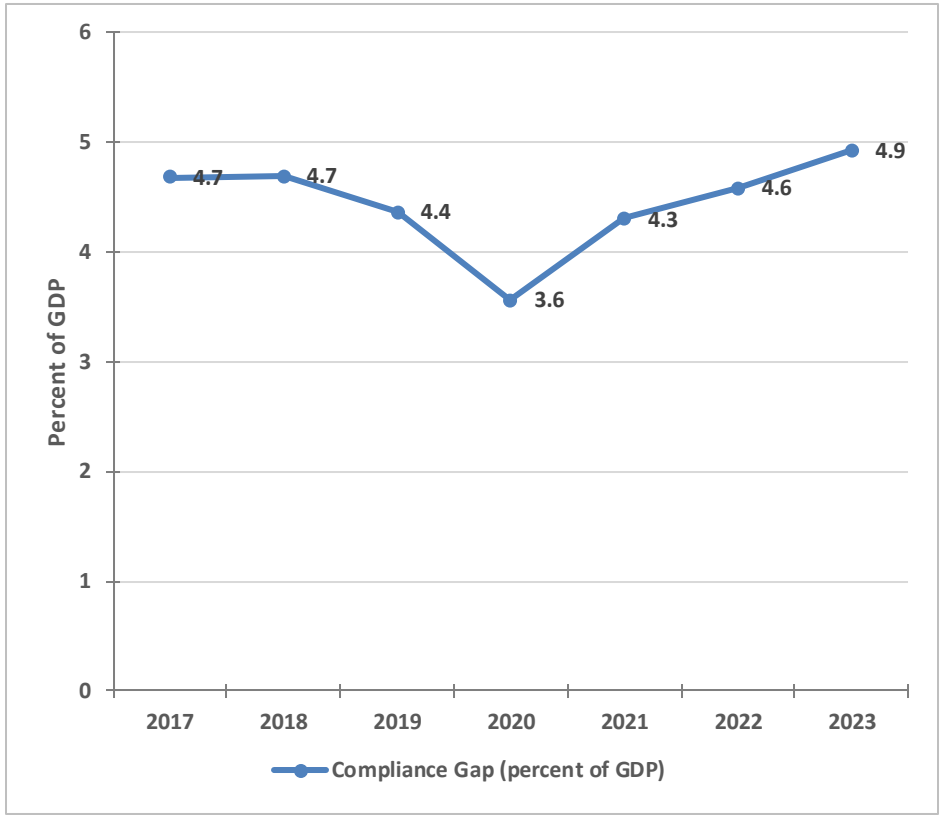
- Possible differences in classification of taxpayers by sector of economic activity carried out by KRA and KNBS.

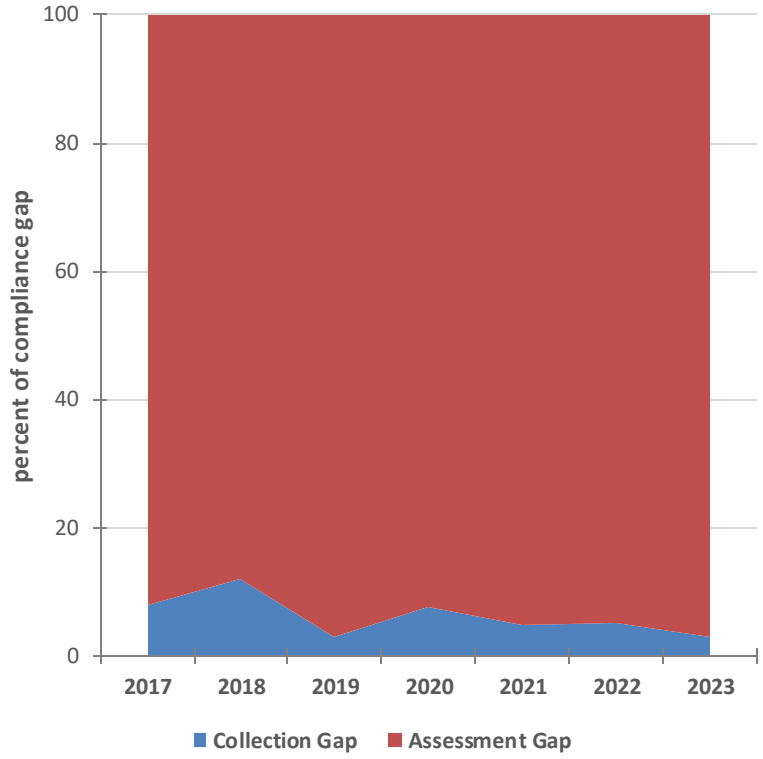
VAT Gap Analysis
Findings

Estimated VAT Gap (%GDP)



VAT Compliance Gap

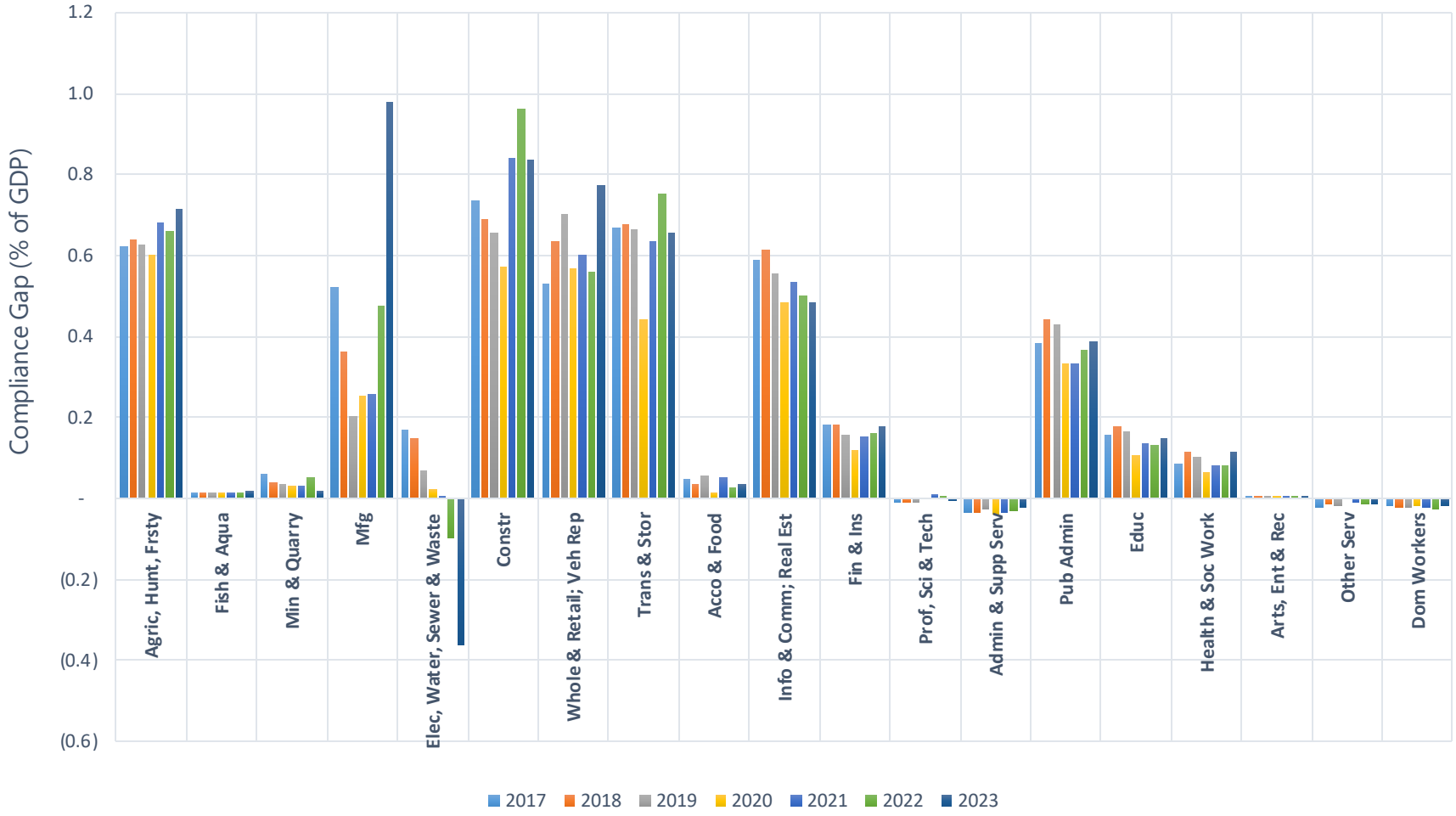




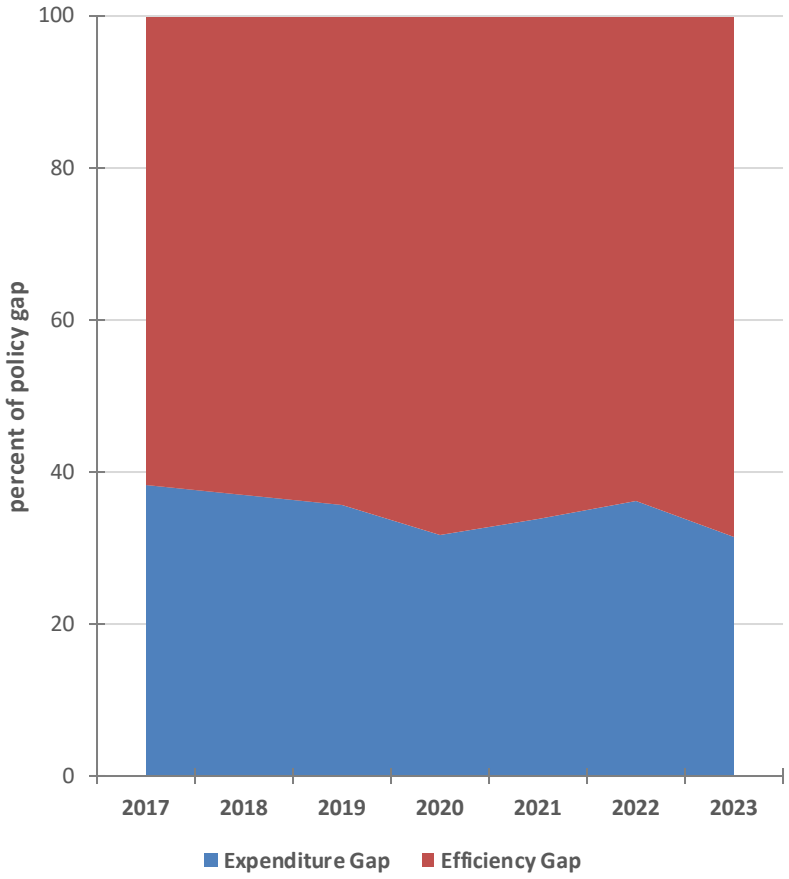
Collections gap: the difference between actual VAT collections and the total amount of VAT declared or assessed as due from taxpayers

Assessment gap: the difference between the amount of VAT declared or assessed and the potential VAT

VAT Compliance Gap by Sector



Policy Gap



- **Policy Gap:** Still higher than compliance gap. *Averaged 7.5% during 2017 – 2023; dropped from 7.2% in 2022 to 6.8% in 2023, largely due to the VAT policy changes implemented through Fin Act 2023.*

- **Expenditure gap:** difference between the potential VAT where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained, and the potential VAT given the current policy framework.

- **Efficiency gap (Non-taxable gap):** difference between the potential VAT if all final consumption were taxed at the current standard rate and the potential VAT where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained.

Comparative Analysis

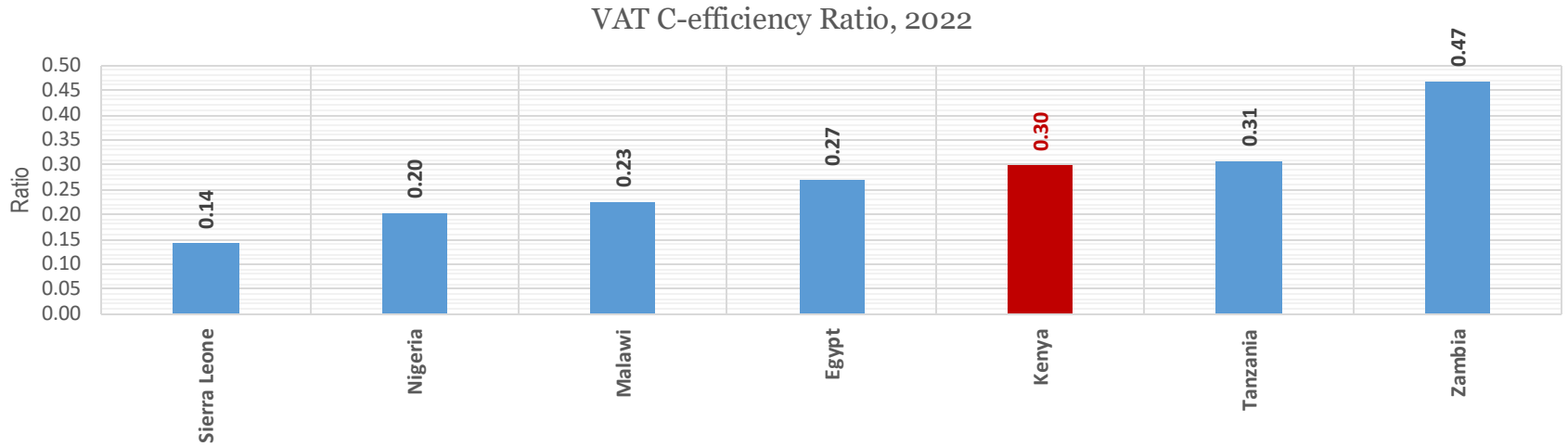
- VAT C-efficiency is a critical indicator of a country's VAT system performance, measuring the actual VAT revenue collected relative to the theoretical potential if all final consumption were taxed at the standard rate without exemptions
- Kenya's c-efficiency ratio has remained notably low, fluctuating between 0.27 and 0.30 over the past seven years. Compared to South Africa's pre- and post-2007 trends.

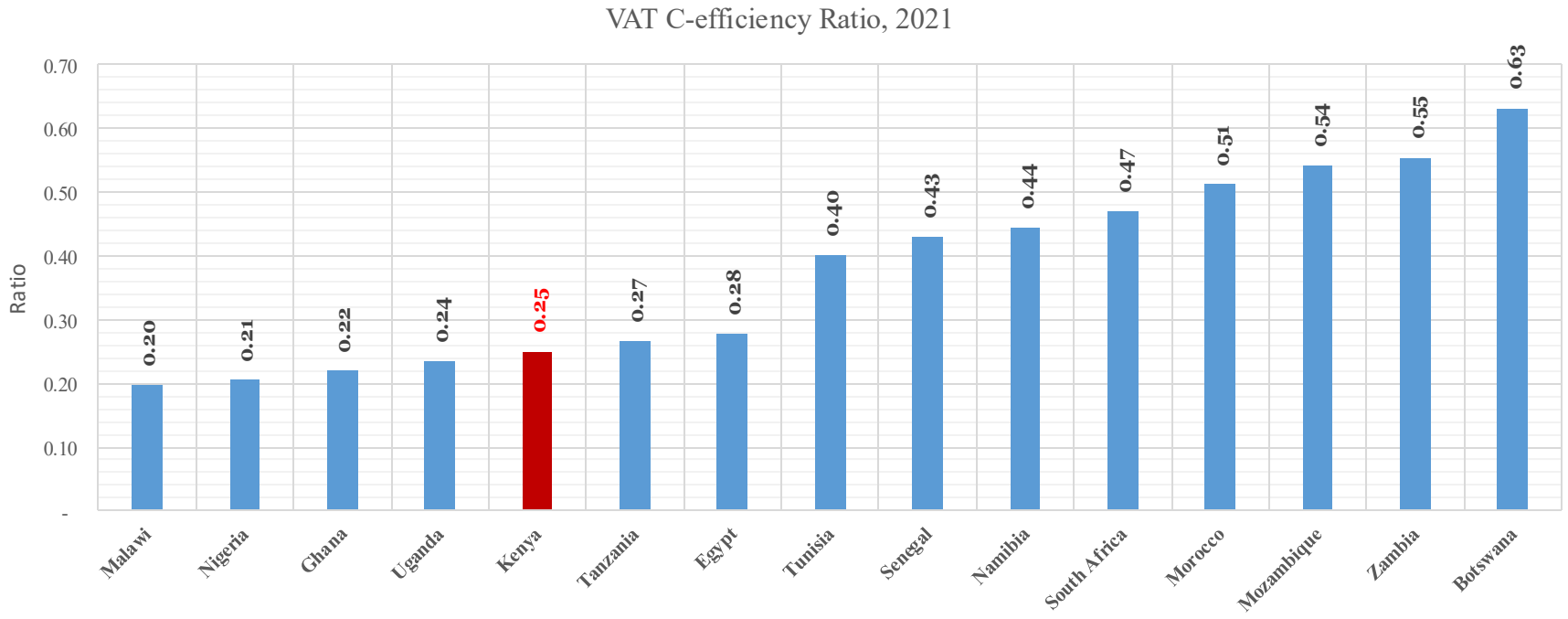
C-efficiency in Kenya, 2017 - 2023

Year	C-Efficiency	Reciprocal Tax Gap
2017	0.29	0.23
2018	0.30	0.23
2019	0.30	0.24
2020	0.27	0.25
2021	0.30	0.24
2022	0.30	0.24
2023	0.29	0.24

Source: KRA and IMF staff computations

Comparison with other African Countries





Summary of Key Findings

- Implementation of VAT gap reduction strategy among other compliance enhancement measures following the initial VAT gap analysis in 2018 resulted in reduction of the compliance gap but this was disrupted in 2020, during the COVID pandemic.
- Disruption of business activities, change in business models, job losses and transition to informal activities, growth of sectors where informality is prevalent in the post-COVID period etc, have constrained efforts to revert to the pre-COVID trend.
- Significant compliance gaps are observed in manufacturing, construction, wholesale and retail trade, agriculture, transportation and storage; Information & Communication, and real estate sectors.
- Policy gap remains higher than the compliance gap and significant at 6.8 per cent of GDP in 2023: Need for further deep dive analysis of the policy gap and review of the tax expenditures.

Recommendations

- Quality of the KRA & KNBS databases enabled a reliable estimation of the VAT gap and its components. To further enhance the accuracy of this estimation, the following actions are recommended:

1. **Refine estimates of Non-Registered Production**: Fine-tune the estimated share of production falling below the VAT registration threshold.
2. **Harmonize Sector Classifications**: Improve the classification of taxpayers by sector by aligning and harmonizing definitions used by KRA and KNBS.
3. **Enhance Data Infrastructure:** Regularly update and maintain comprehensive databases related to VAT payments, imports and refunds.
4. **Integrate New Supply and Use Tables:** Adopt the updated SUT for VAT gap estimation as soon as they are finalized by KNBS.

Recommendations…

5. Strengthen Policy-Administration Linkages: The National Treasury may consider seeking support from a joint team of experts in tax policy and revenue administration to bridge the gap between the VAT policy model and the RA-GAP VAT gap estimation framework. This includes:

- Incorporating a detailed decomposition of the policy gap, with particular emphasis on the expenditure gap.
- Generating sector- or commodity-level policy gap estimates to enrich Treasury's fiscal analysis.

6. Support Compliance Strategies: Utilise the refined VAT gap estimates to inform the design of targeted Compliance Improvement Plans (CIPs) within a structured Compliance Risk Management (CRM) framework. These estimates can also be used to enhance tax audit case selection and resource allocation for enforcement.

Next Steps

- FY 2025/26 - Develop a Strategy to be implemented by the KRA Departments to reduce the VAT gap going forward

THANK YOU.

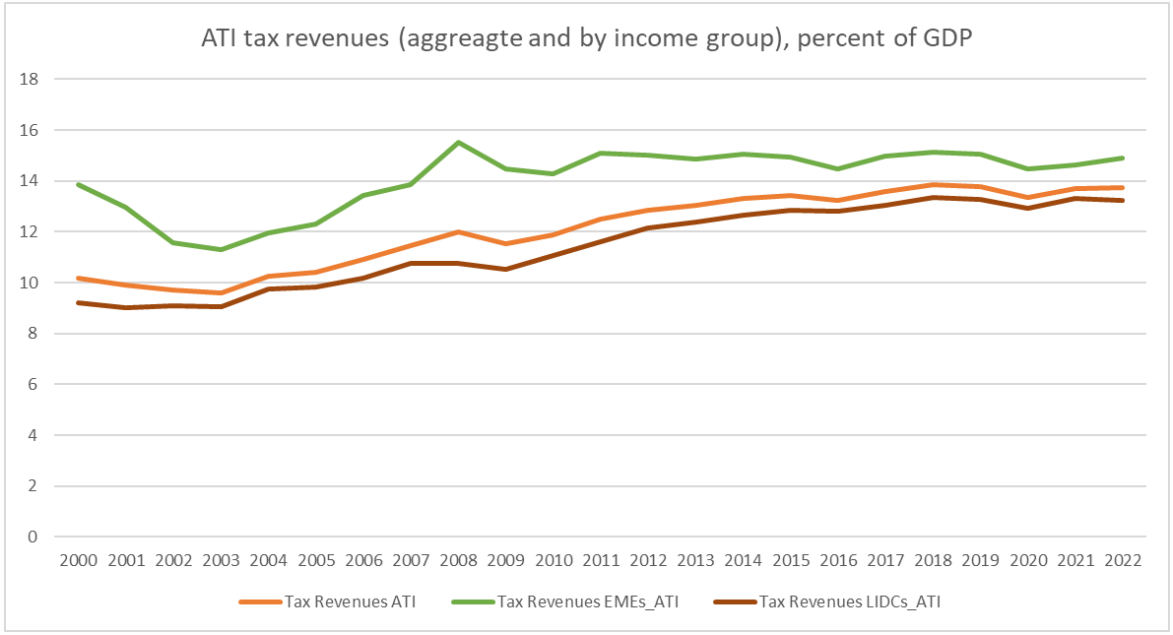
Domestic Resource Mobilization in the ATI Membership

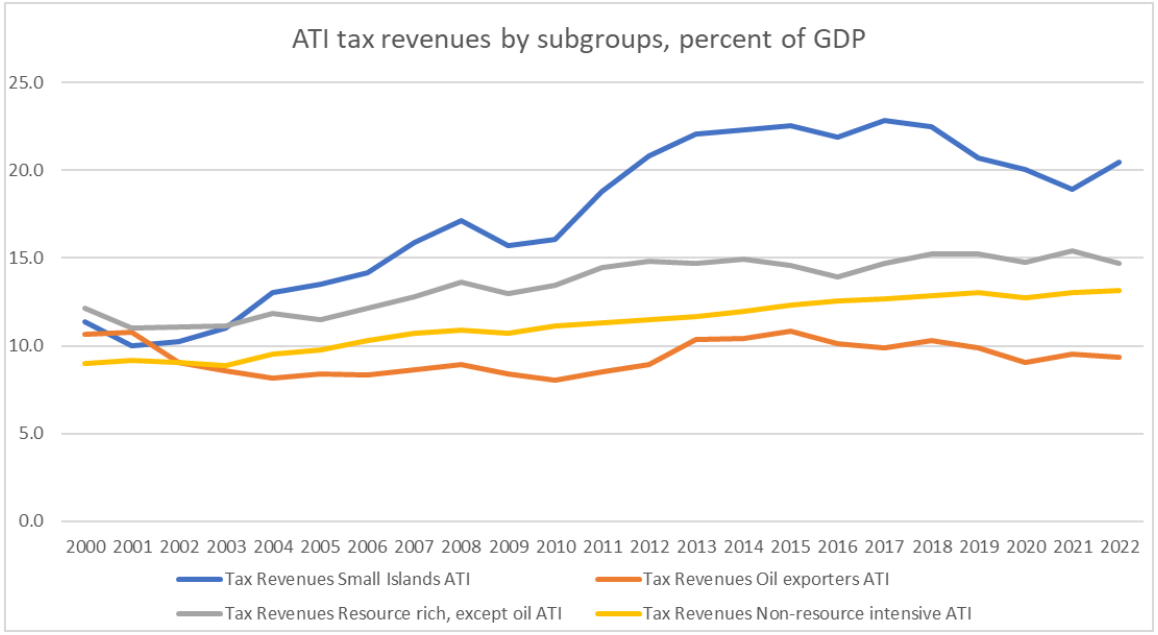
Miguel Pecho, Patricio Barra, Juan Carlos Benítez, Supriyo De, Elizabeth Gavin, Stefano Pisani and Umuhire Ingabire Grace

JULY 24, 2025

Speaker: Shan Zhong

Average tax revenue in the ATI membership has risen from 10.2 percent of GDP in 2000 to 13.7 percent in 2022



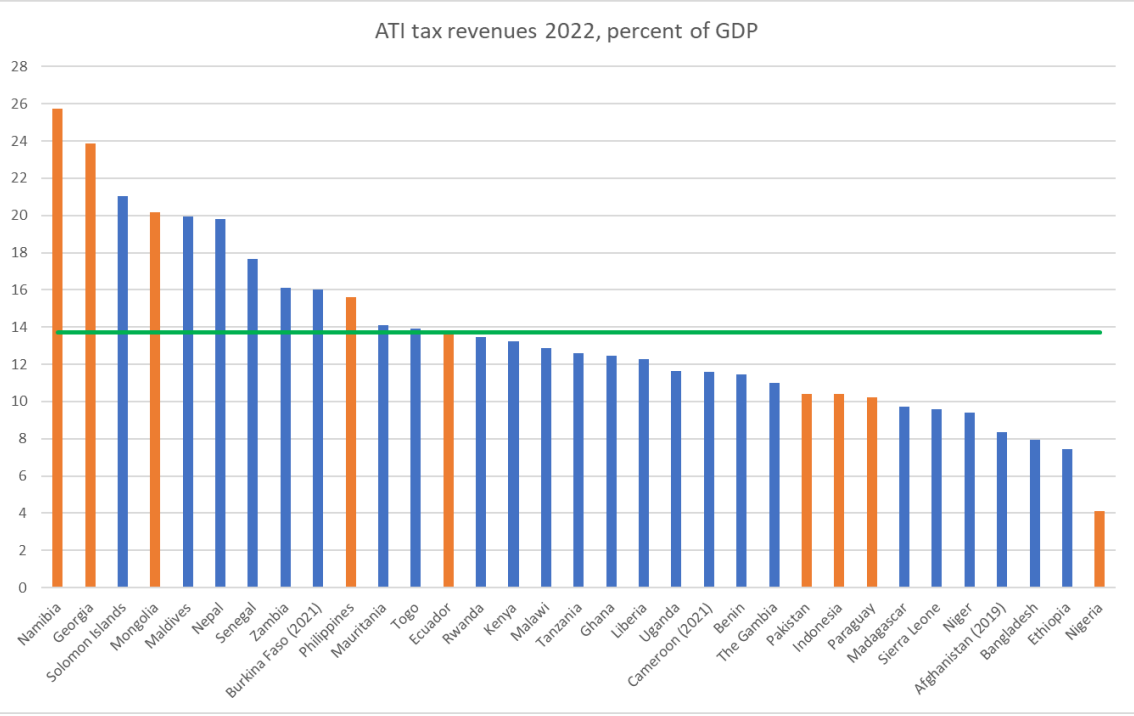


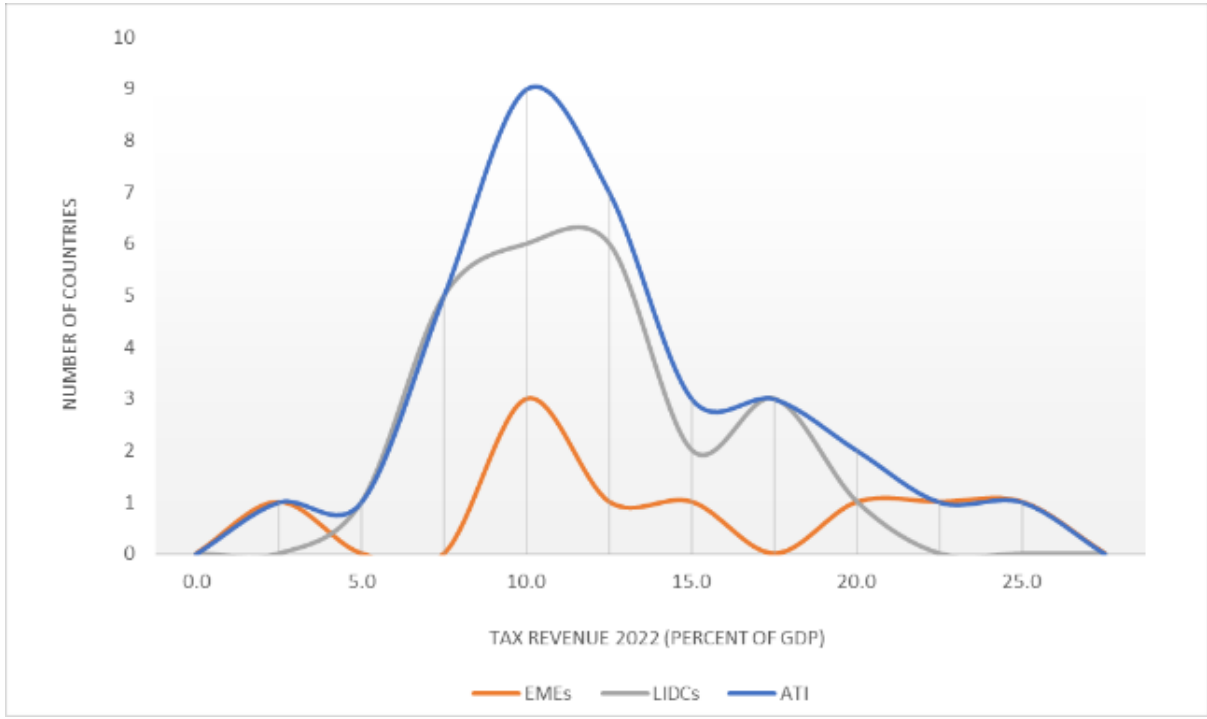
Average tax revenue for ATI's LIDCs increased by 4 percentage points of GDP, while average tax revenue for ATI's EMEs increased by 1.1 percentage points of GDP

The evolution of average tax revenues among different subgroups within the ATI membership reveals certain differences (small islands, resource rich, oil exporters).

In 2022, the distribution of tax-to-GDP ratios shows tax revenues in the ATI membership are centered around 10 percent

- Average tax-to-GDP ratio reaches 13.7 percent in 2022
- However, most of ratios within the ATI membership cluster are around 10 percent, suggesting that the average is being influenced by the higher ratios of a select few countries



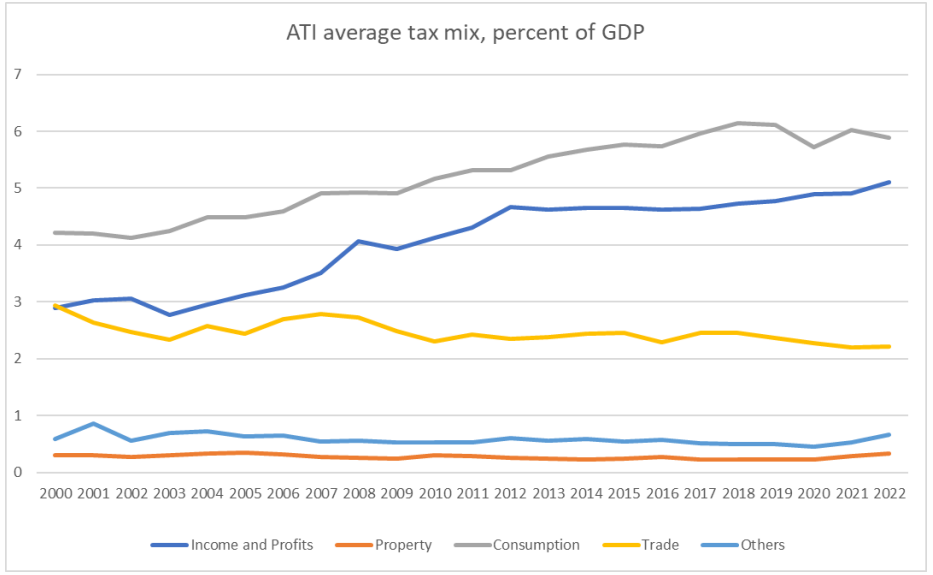


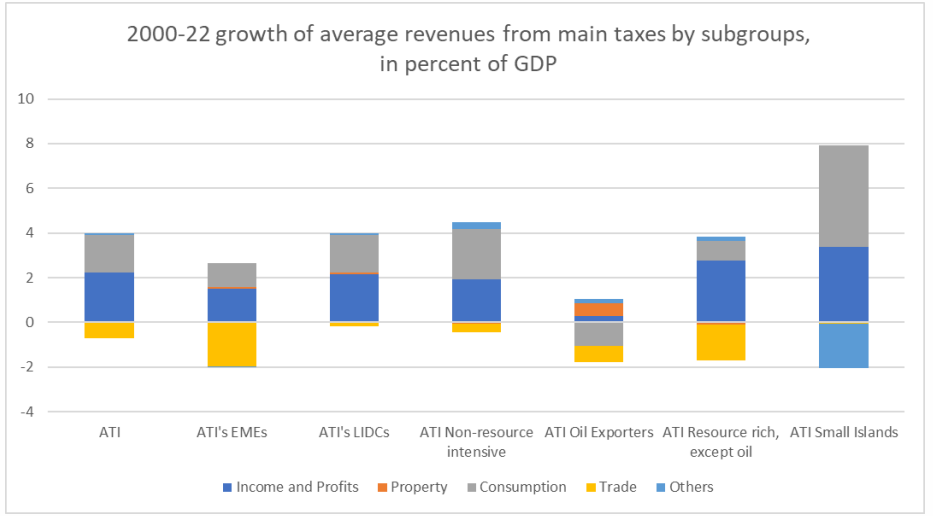
The growth in ATI's tax revenue has been primarily driven by income and profit taxes

- Over the past 22 years, the average revenue from income and profits taxes (PIT, CIT, PAYE, capital gains taxes, income tax withholding) has risen by 2.2 percentage points of GDP

- While average revenue from consumption taxes (VAT/sales taxes, excise taxes) has increased by 1.7 percentage points

- All subgroups exhibit similar growth trends in main revenue streams, with the exception of oil-rich countries.





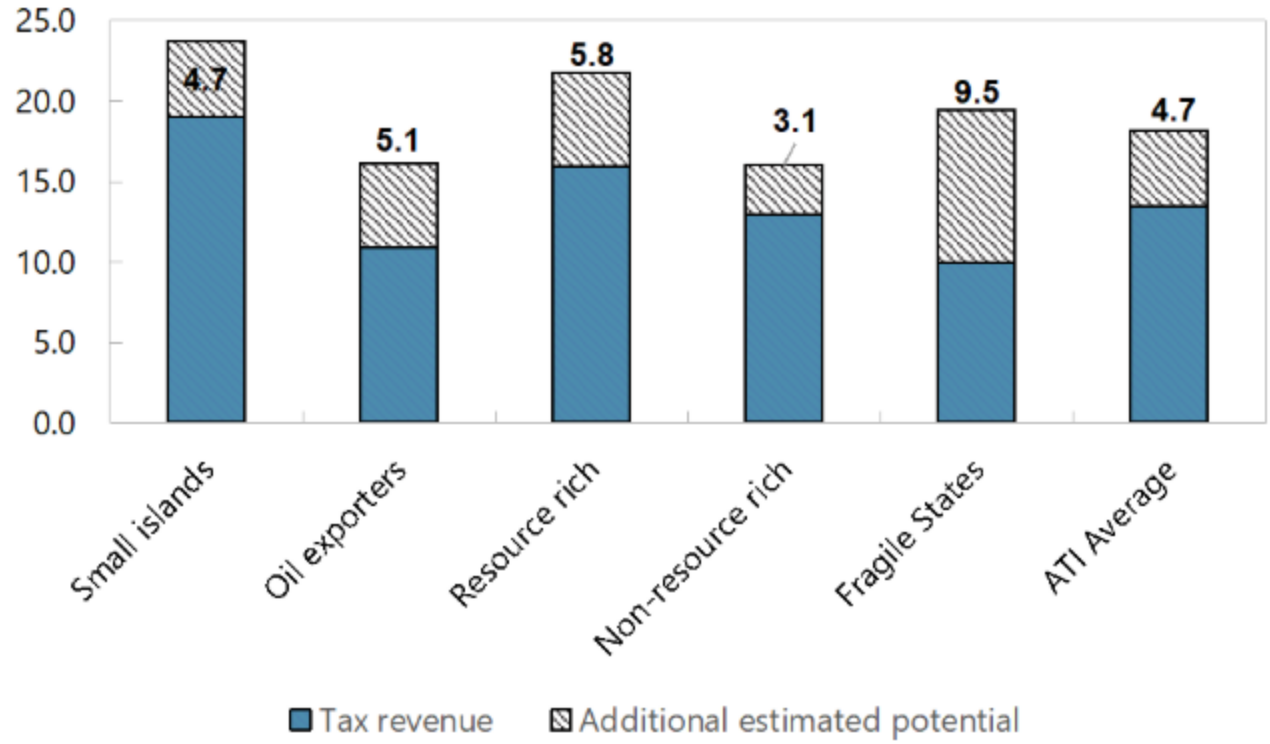
Despite the progress seen over the past 22 years, tax revenues in most ATI partner states seems insufficient to finance their public spending needs

- Urgent need to further increase tax revenues through more robust tax designs and additional tax administration effectiveness.
- A minimum level of revenue collection (app. 13 percent revenue-to-GDP) to sustained economic development [Gaspar et al. (2016)]
- Some ATI member countries below this average, while others near the threshold.
- How much more revenue can ATI countries credibly raise given their current economic and institutional capabilities?

There is untapped tax potential across ATI member countries

- On average the group comprised by ATI countries could potentially collect 4.7 percentage points in additional revenue.
- This is the average amount of revenue countries could aspire to mobilize by improving tax policy design and investing in improving revenue administration capacity to improve compliance and enforcement.
- These estimates are based on a cross-country comparison accounting for the economic and institutional characteristics (intended to proxy for revenue administration capabilities) of each country

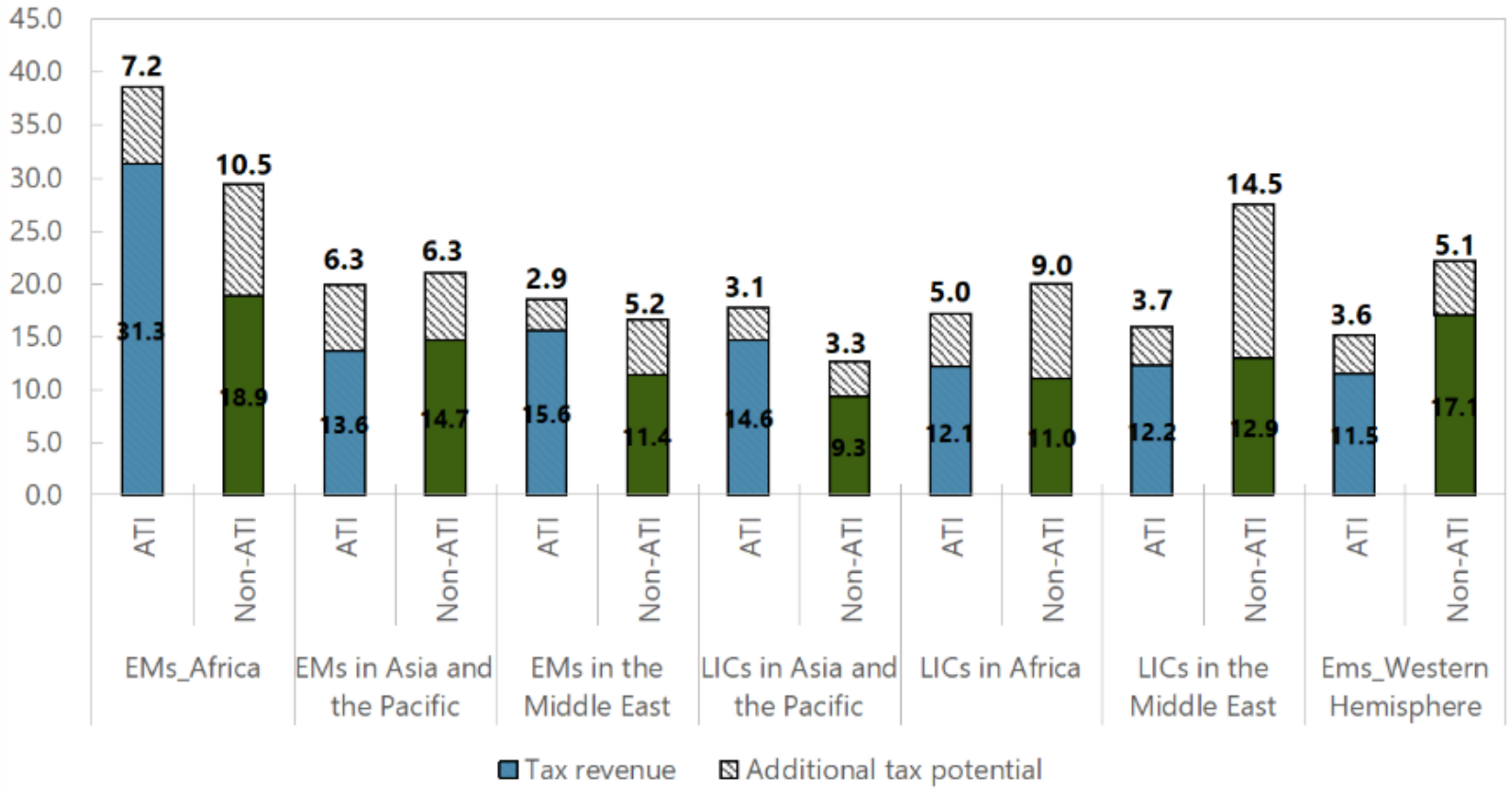
Figure 1. Tax Revenue and Additional Potential in ATI Selected Groups (2020)



Source: IMF Staff estimates based on Benítez, et al. (2023)
Note: Group tax revenue averages exclude countries with insufficient data to estimate tax potential.

There is untapped tax potential across ATI member countries (2)

Figure 2. Tax Revenue and Additional Potential by Region and ATI Membership



Source: IMF Staff estimates based on Benítez, et al. (2023)
Note: Group tax revenue averages exclude countries with insufficient data to estimate tax potential.

The gap to reach the tax potential is explained by *tax policy choices* and the *level of tax compliance*

- Revenue mobilization efforts to close the gap should focus on strengthening the domestic taxes.

- Countries that have successfully mobilized revenue have simplified their tax system and have eliminated small inefficient taxes and focused on a few core taxable bases

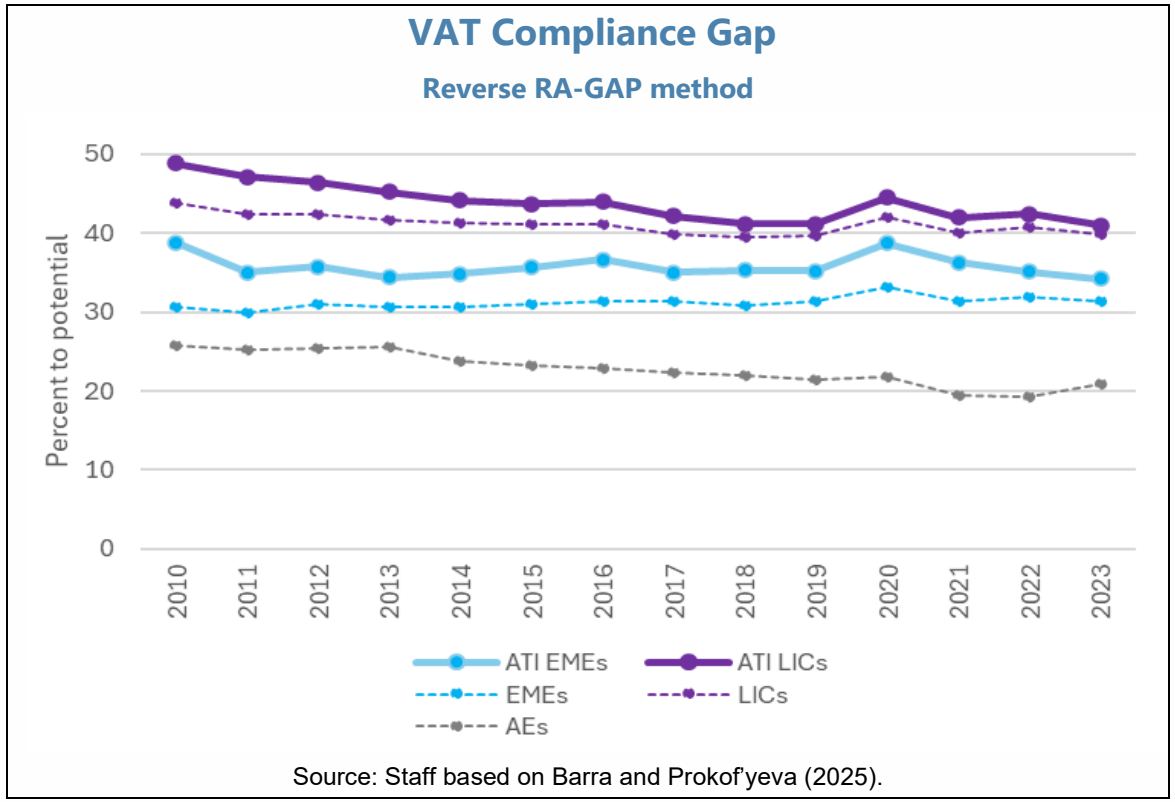
- In addition, these countries have broadened these tax bases, often without increasing tax rates. Broadening tax bases first implies streamlining ineffective tax expenditures

- Second, broadening tax bases means coping with compliance gaps.

  Low-income countries that significantly increased revenue have undertaken key measures to improve revenue administration:
  - ✓ Establishing risk-based auditing,
  - ✓ Strengthening good governance and human resource policy
  - ✓ Modernizing information technology systems within the administration
  - ✓ Strengthening taxpayer segmentation.

Compliance gap in ATI countries indicates an opportunity to mobilize additional resources

- Average VAT compliance gap for ATI countries is systematically higher than that for the rest of the world.
- However, the average ATI LICs compliance gap shows a reduction from 2010, when its level reached 49 percent to potential, to 2023 when the level is around 40 percent to potential, closing the difference to overall average LICs compliance gap.
- A similar trend could be observed in the average ATI EMs compliance gap, from 39 to 34 percent to potential, but the values are still over the overall average EMs compliance gap.
- AEs (not included here) compliance gap is appreciably lower than those levels, reaching 21 percent in 2023.



Source: Staff based on Barra and Prokof'yeva (2025).

Does tax administration matter for revenue collection?

- Tax collected by administrations is positively correlated with their average index score of Tax Adm operational strength (based on ISORA*), a measure of the extent of sound tax administration practices and foundation
- All seven Tax Adm operational strength sub-indexes are positive correlated with tax effort and negatively correlated with the VAT compliance gap

Correlation between the ISORA indices and measures of tax administration effectiveness

Measure	Public Trust	Management Autonomy	Taxpayer Services	HR Management and Development	Compliance Management	Digitalization	Governance	Average of all indices
Tax effort	0.29	0.33	0.27	0.45	0.15	0.35	0.30	0.41
VAT compliance gap (percent of potential)	-0.29	-0.20	-0.02	-0.13	-0.12	-0.37	-0.19	-0.24

ATI Project - Applying the IMF's RA-GAP tool for self-assessing VAT compliance gaps in ATI countries: Kenya, Namibia, Rwanda, and Uganda

- The IMF, ATI, and the country's revenue administrations that are part of the **ATI Tax Gap Community of Practices** developed a joint project to assess VAT compliance gaps under a collaborative modality with countries specially invited for that purpose.
- The estimation efforts took place between December 2024 and May 2025 through an innovative self-assessment modality.
- This modality involved IMF and ATI experts to train officials from participant countries by remote assistance activities, to enable them for compiling information, running the model, and obtaining results.
- The VAT gap self-assessment project was based on the IMF's RA-GAP integrated production-consumption methodology. Participating country officials were required to complete the online VGAPx course to understand and apply the methodology.
- The process also involved engaging highly experienced officials from national statistics institutions and customs. The compiled information included Supply and Use Tables of the economy, key macroeconomic aggregates, VAT declarations, payments, and refunds and detailed information on the VAT design of each country.