

Interpreting and implementing findings

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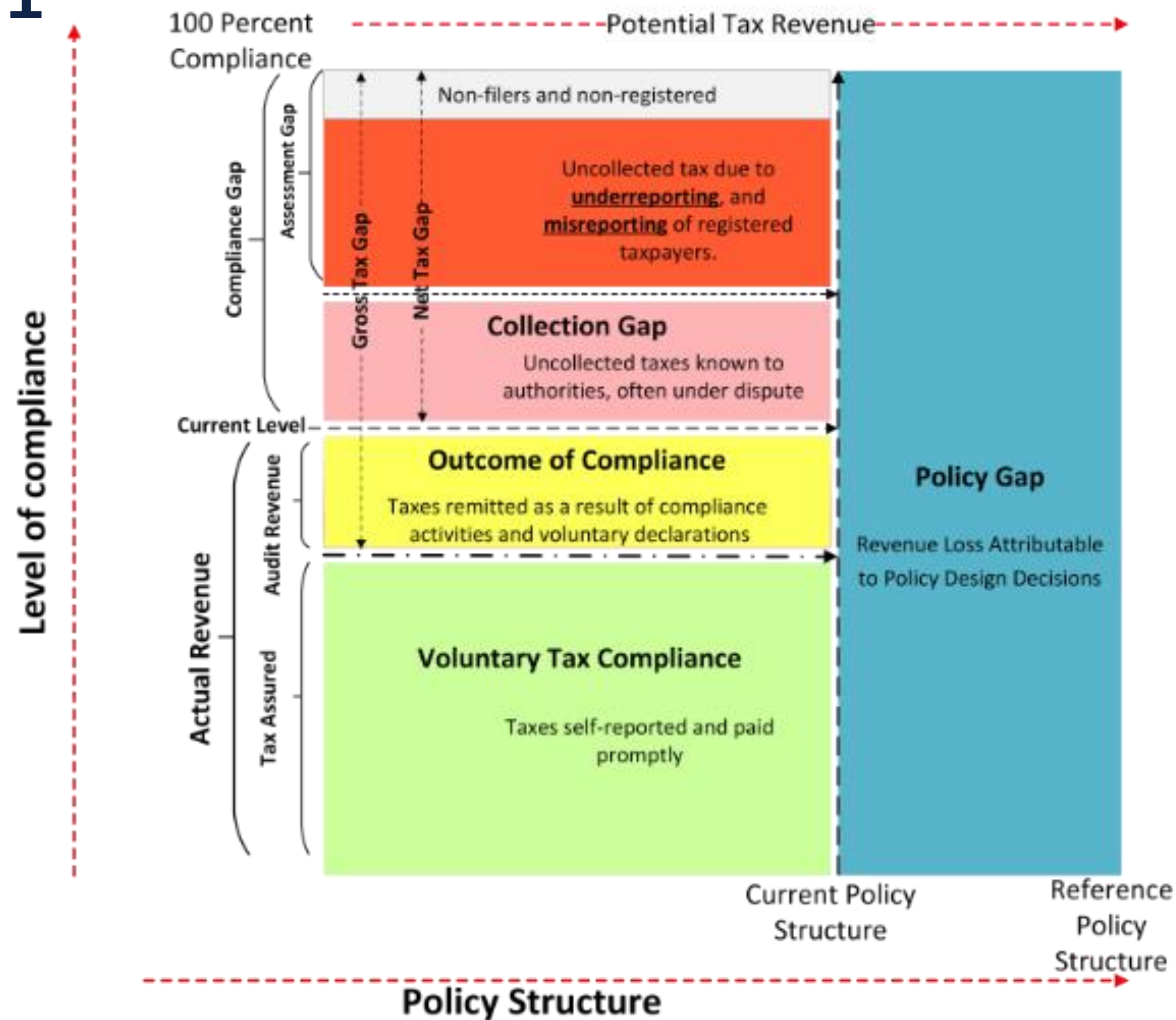


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Outline

1. Recap
2. Interpreting the tax gap
3. Important considerations
4. Replication
5. Using tax gap estimation results in Compliance Risk Management
6. Q&A

Recap - Day 1



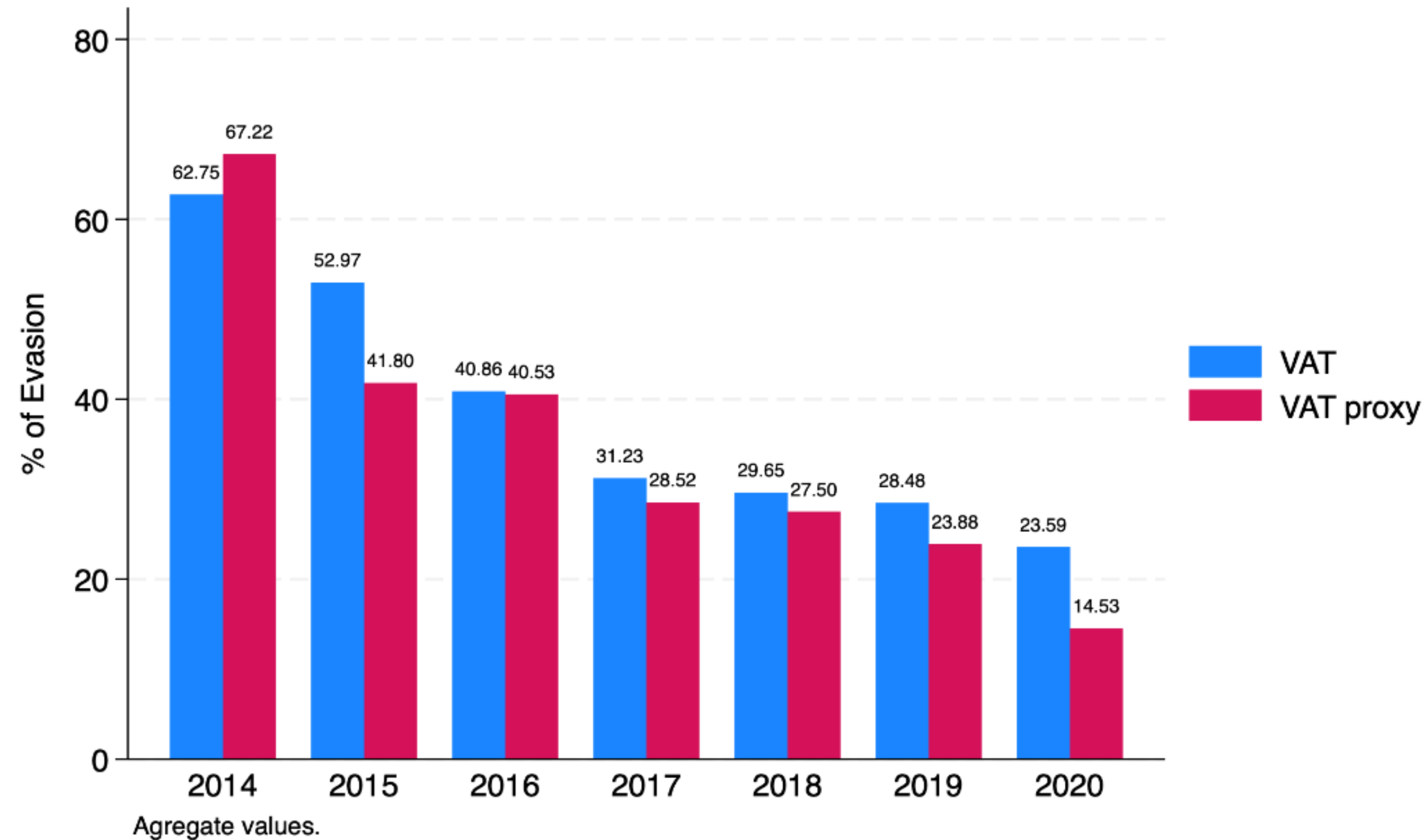
Recap - Day 1 Key learnings

- ✓ What is a tax gap
- ✓ Why estimate the tax gap
- ✓ Benefits and limitations of the Bottom-up approach
- ✓ Importance of Random Audits
- ✓ What are the data requirements for the tax gap estimation
- ✓ How to prepare data for tax gap estimation

Day 2 – Recap - Estimation

1. **Setup**: Install required Stata packages and prepare the analysis environment.
2. **Model Selection**: Employ Random Forest algorithms, tuning parameters to optimize predictions of tax evasion using relevant variables.
3. **Model Testing**: Assess the model's performance with metrics like R-squared and RMSE; compare results with traditional OLS regression to ensure accuracy.
4. **Tax Gap Estimation**: Apply the optimized model to the full dataset to predict unpaid taxes and calculate tax gap percentages across different groups (e.g., year, industry, region).
5. **Revenue Analysis**: Calculate nominal values for potential revenue, total tax collected, and predicted revenue lost. Generate visual summaries and detailed statistics to illustrate revenue implications.

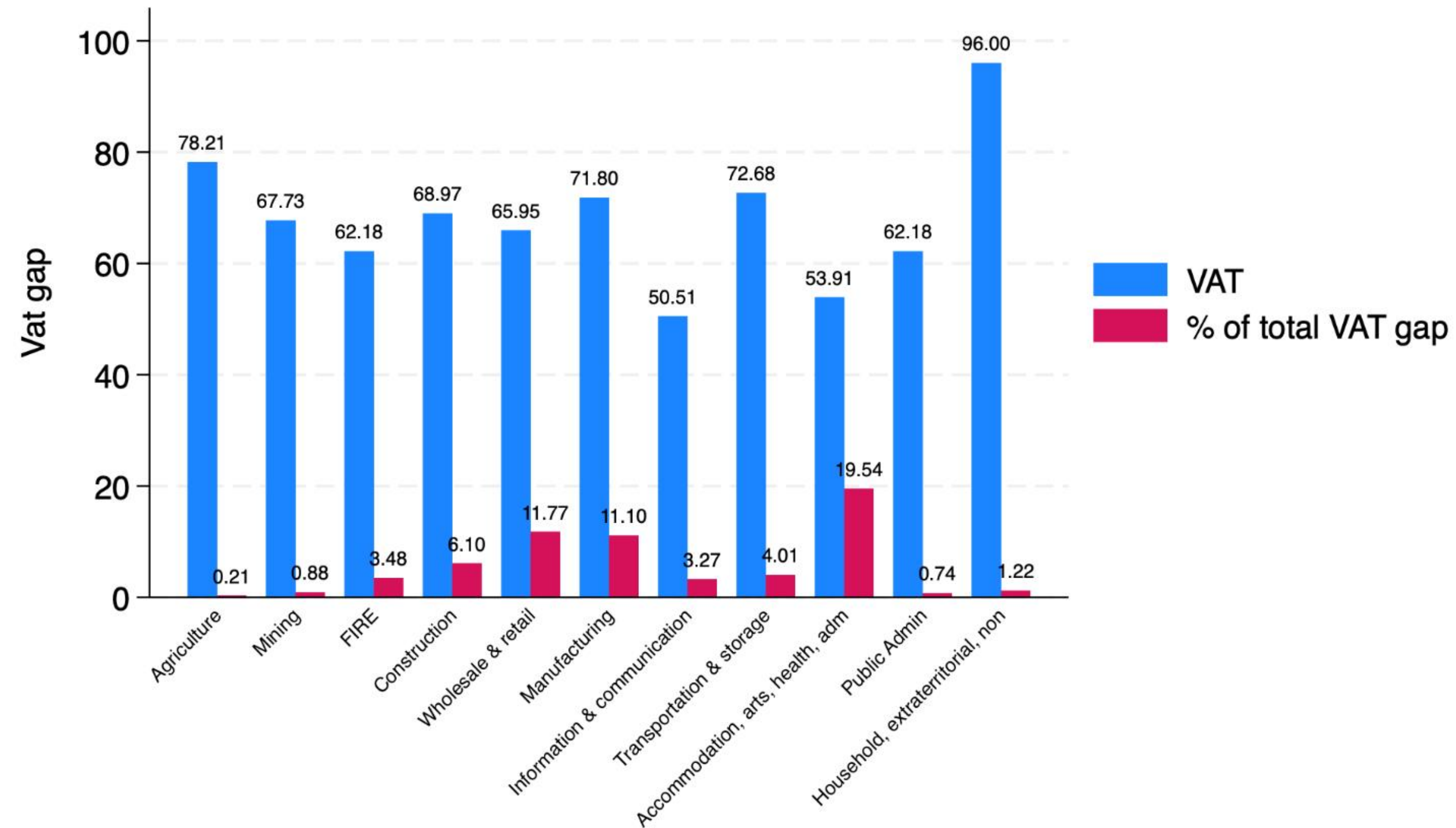
Interpreting results



Results from VAT tax gap estimations in Tanzania for SMMEs

- What do you notice?
- How has the VAT gap evolved over time?

Interpreting results - Sectors



Agregate values. Only positive assessment estimations.

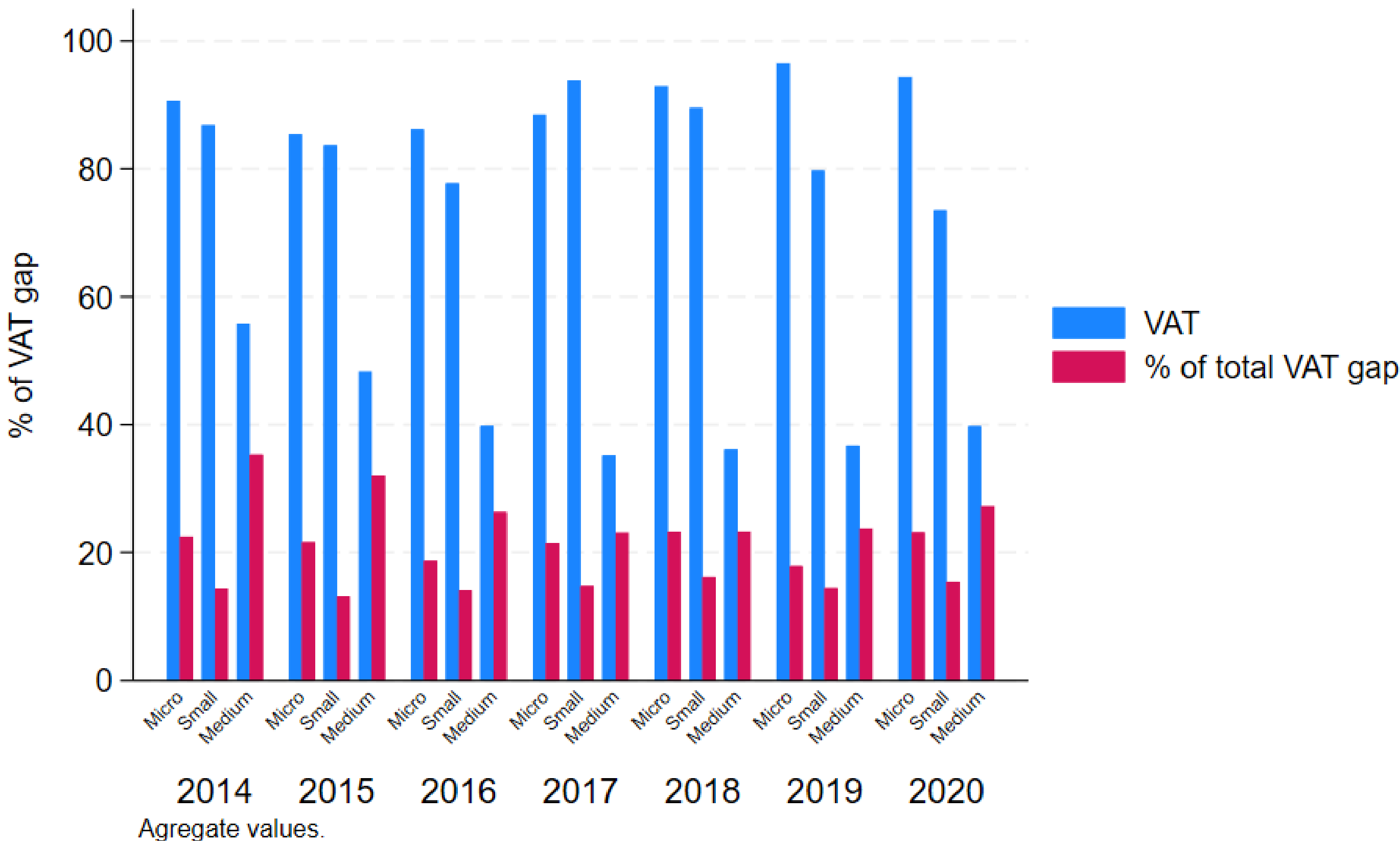
Results from VAT tax gap estimations in Tanzania for SMMEs by sector

- What do you notice?
- VAT gap in the sector versus importance relative to the total VAT gap

Interpreting results – Firm size

Results from VAT tax gap estimations in Tanzania for SMMEs by firm size

- What do you notice?
- VAT gap versus importance relative to the total VAT gap



Important considerations (recap of Day 1)

- Estimates of tax gaps are *rough* indicators of revenue loss.
- Usefulness of tax gap estimates depends on the methodology and the **data** used to estimate the gaps.
- **Caution** in interpretation needed –tax gap estimates are imprecise. It is, therefore, best to emphasise trends in the estimated results instead of focusing on absolute numbers.
- Differences in tax systems and tax gap methods mean that comparisons between countries are limited.
- Many of the factors driving changes in the tax gap are outside of the control of the tax administration

Importance of this initiative - Replicability

There is a growing public demand for tax gap estimations, which have attracted increased interest over time.

The analysis of the tax gap is relevant for the fulfilment of **ATI Commitment 1** outlined in the ATI Declaration 2025, which points out that ATI members “*will enhance the **effectiveness** of partner countries’ revenue administrations in curbing non-compliant behaviour by strengthening their capacities and capabilities, including risk management frameworks.*”

We are active in fulfilment of this Commitment!

Replicability and Expansion of the toolkit

- Embed the toolkit for re-analysis each year, updating of previous year.
 - The code has been adjusted to reflect country conditions, repeat analysis in 2025.
- Expand to other tax types (VAT and PIT, anywhere that Audits happen).
 - The toolkit is flexible to allow for estimations of other tax types.
- Expand to other components of the tax gap.
 - The toolkit is being developed to allow for estimations of the payment gap and filing gap – important components of the Tax compliance gap.

Reasons for Random Audits Programs

If this methodology can estimate from risk-based audits, why do we need to randomize?

- They improve case selection tools
- There is danger where risk-engines rely on data from risk-based cases only
- Selecting cases randomly means all parts of the taxpayer population are tested for risk, which might improve compliance results
- Random selection of some taxpayers **can increase the deterrence effect** where the audit plan itself is published
- Random Audit Programs are helpful for transitioning from top-down case selection (rule-based) to bottom-up case selection (data-driven)
- Random Audit Programs can also be used to measure the impact of risk-based audits
- Not ALL audits need to be randomized! Revenue authorities in developed countries only randomize a small fraction.

Source: “Estimating the tax gap – RA-GAP experience” by IMF Fiscal Affairs on ATI General Assembly June 22, 2023

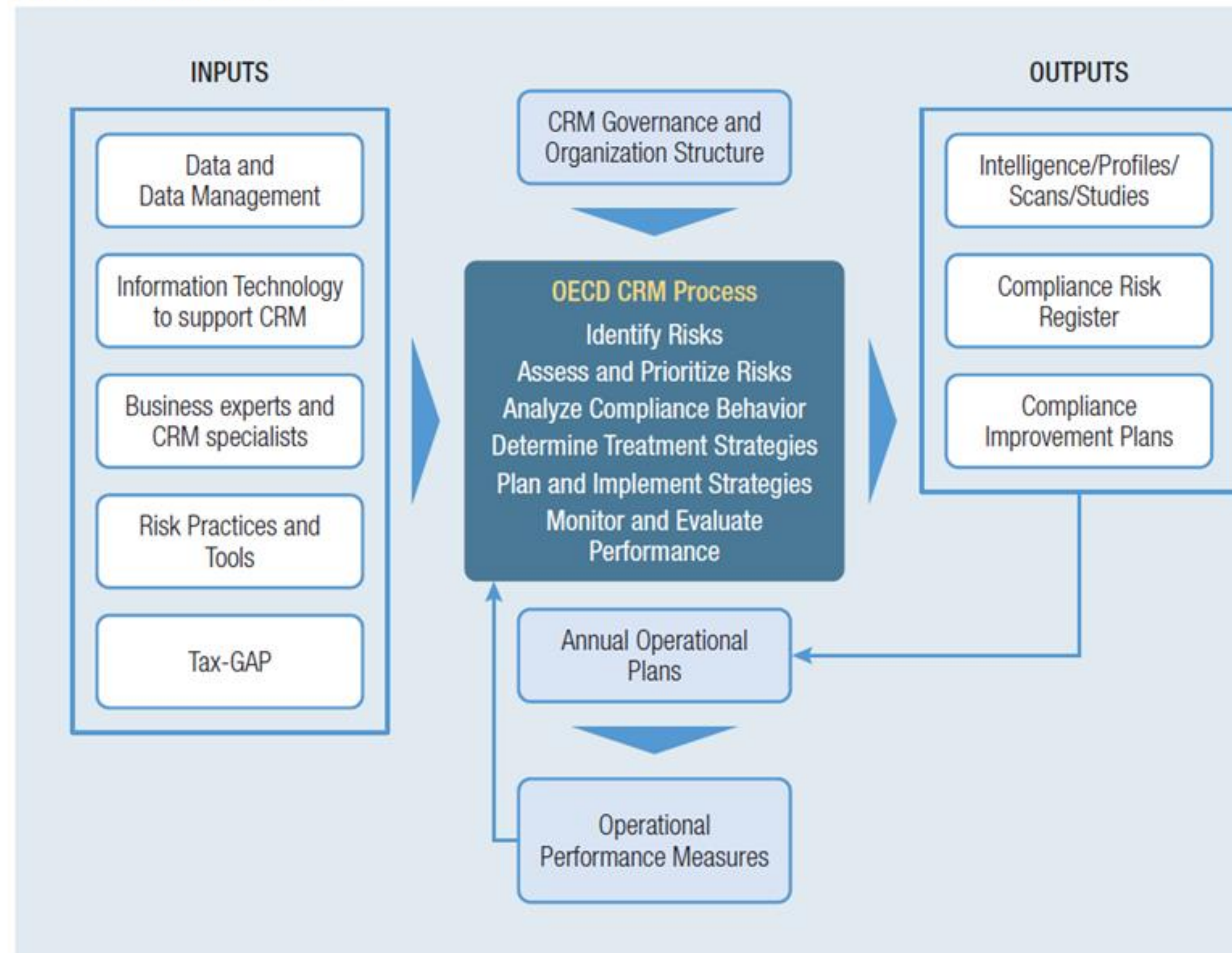
Why do we do all this hard work?

Link between Tax Gap estimation and Compliance Risk Management



Tax gap is an important input to the CRM process

FIGURE 2. CRM Framework



- Revenue administrations are gradually becoming insights-driven organizations
- Comprehensive tax gap research helps understand the tax gap phenomenon and allows tax authorities (among other things) to **set priorities**, implement differentiated compliance strategies, and formulate legislative reforms.
- Measuring and analyzing ‘compliance gaps’ is a **powerful first step** to addressing non-compliance.

Source: IMF, Compliance Risk Management Framework to Drive Revenue Performance

Source: “Estimating the tax gap – RA-GAP experience” by IMF Fiscal Affairs on ATI General Assembly June 22, 2023

Compliance strategy and planning

- Helps tax administrations put into practice a true risk differentiation framework
- Provides a foundation for an evidence-led risk management strategy and better allocation of priorities and resources
- For instance, Random Audit Programs are helpful for the risk classification of taxpayers (lower, medium, key, higher-risk) as they get results at taxpayer levels.
- Tax gap analyses are a key tool for understanding taxpayer behavior and compliance, providing valuable insights for effective risk management

Source: “Estimating the tax gap – RA-GAP experience” by IMF Fiscal Affairs on ATI General Assembly June 22, 2023

Identifying compliance risks

- Focused Analysis: Tax gap estimations involve a detailed examination of tax collections and liabilities, allowing revenue authorities to identify areas where discrepancies occur.
- Sectoral Insights: By estimating gaps in different tax types revenue authorities can gain sector-specific insights into potential or systematic non-compliance.
- Targeted Compliance Efforts: With knowledge from tax gap estimations, revenue authorities can allocate resources more strategically.
- Maximizing Resources: Revenue authorities can tailor their compliance strategies based on the identified risks for different groups of taxpayers

Tax Gap results feeding into the CRM process

- The use of tax gap estimation in compliance risk management process represents a essential strategy in fostering a resilient and effective tax system
- Revenue Authorities (such as Kenya) have examples of how tax gap estimation can provide a roadmap to enhance revenue collection while minimizing non-compliance risks.
- By leveraging tax gap estimation, revenue authorities gain valuable insights into potential areas of non-compliance, enabling them to tailor risk profiling tools and direct resources toward high-risk sectors or taxpayer groups.

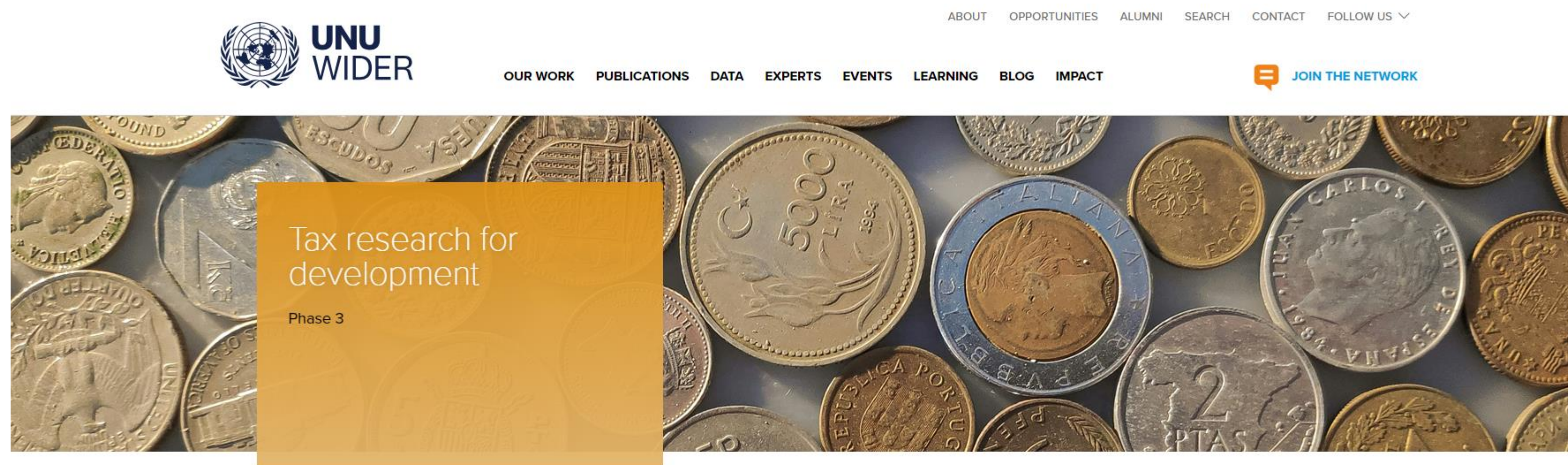
Summary of Day 2

We learned:

- How to estimate the tax gap
- How to interpret the findings
- How to implement the tax gap analysis in the institution
- What benefits tax gap analysis provides to Compliance Risk Management

Bottom-up approach materials

- This workshop trains to use the Bottom-up approach. Providing technical sessions with examples of estimating the Tax gap using dummy data
- Tax Gap Toolkit **Technical Note**, **Readme files** and example **Stata codes** will be available on the UNU-WIDER's webpage later this year



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