FISCAL AFFAIRS

Linkages between Tax Gap analysis and CRM - I

2024 ATI TAX GAP WORKSHOP

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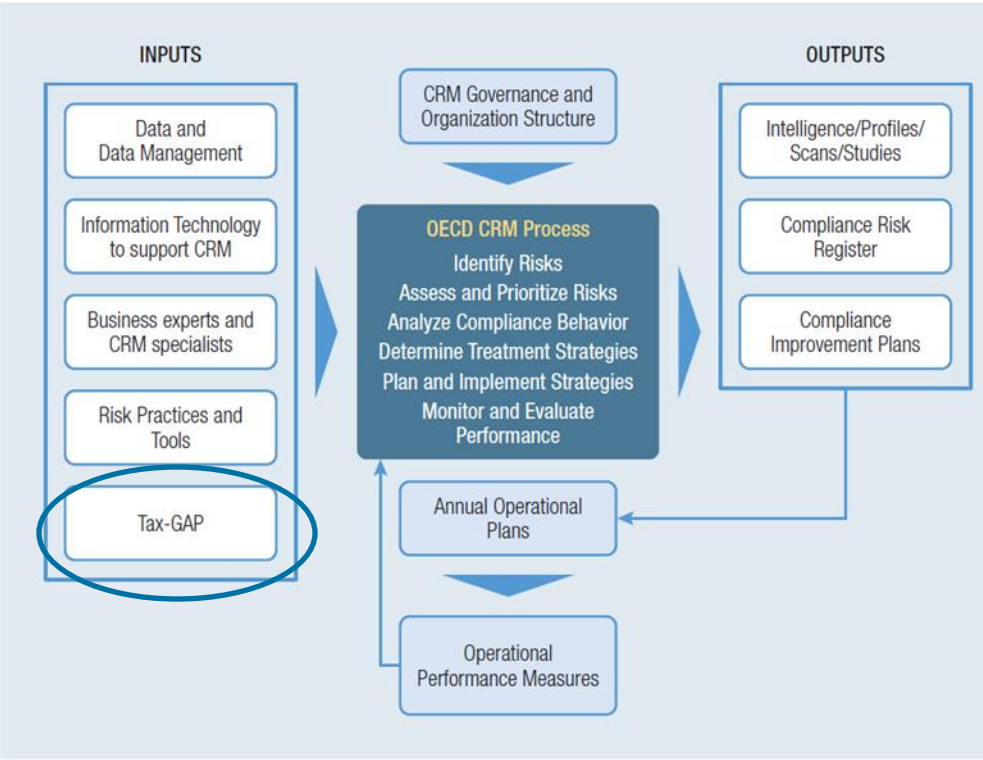
Stefano Pisani
Short Term Expert
Fiscal Affairs Department

Background

The general Model

FIGURE 2. CRM Framework



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

- The Tax Gap (TG) is one of the main inputs to the Compliance Risk Management (CRM) process.
- Although estimated by several countries, the tax gap has so far been little used to help the work of revenue administration.
- To make the Tax Gap fungible for the goals of tax administration, it is necessary to develop a process that systemically integrates TG and CRM.

Process

Aim

- Support Revenue administration in improving compliance on a practical ground

Input

- Measures: compliance gap estimates

Model

- CRM framework that provides a coherent strategy to maximize the overall level of compliance with tax laws

Output

- A system of noncompliance risk indicators
- A “model” for monitoring compliance outcomes

Where to use compliance gap estimate (1/2)

Risk indicators

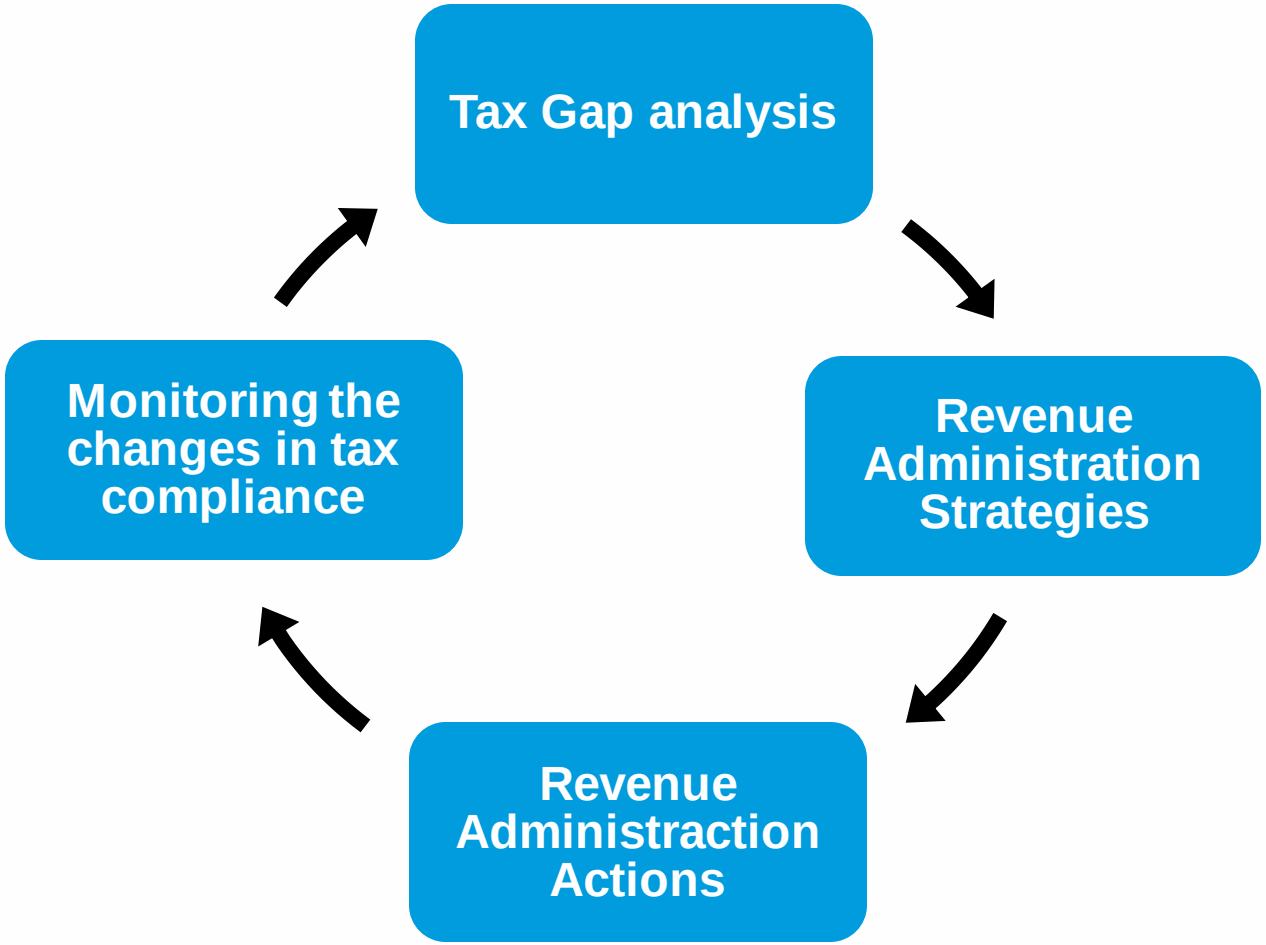
- Aligns the operational goals to the RA's strategic objectives (improving tax compliance)
- Estimates the full extent of the tax risks that the CRM investigates (hidden economy)
- Supports the risk identification at the macro (top Down) and micro (Bottom Up) level

Where to use compliance gap estimate (2/2)

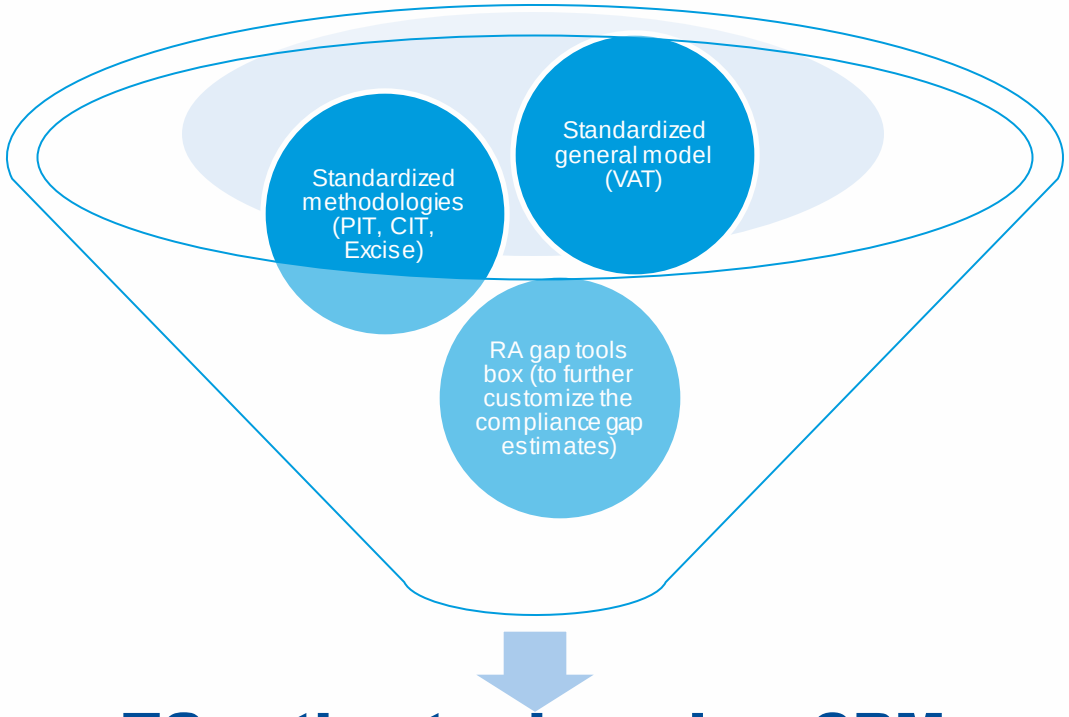
Monitoring

- Supports the CRM in evaluating the RA's compliance outcome
- Strengths the consistency in the CRM iterative process (from risk identification to monitoring)
- Illustrates the link between the RA's efforts and the level of voluntary compliance.

Integration between TG and CRM involves a circular process



How to adapt compliance gap estimates to CRM needs



TG estimates based on CRM needs

The integration of CG and CR has been applied using estimates of the VAT CG in the following countries:

- Lithuania
  - (E. D'Agosto, F. van Brunschot, S. Pisani)
- Romania
  - (E. D'Agosto, S. Pisani, G. R. Whyte)
- Uzbekistan
  - (S. Pisani, S. Zhong)

Risk Indicators

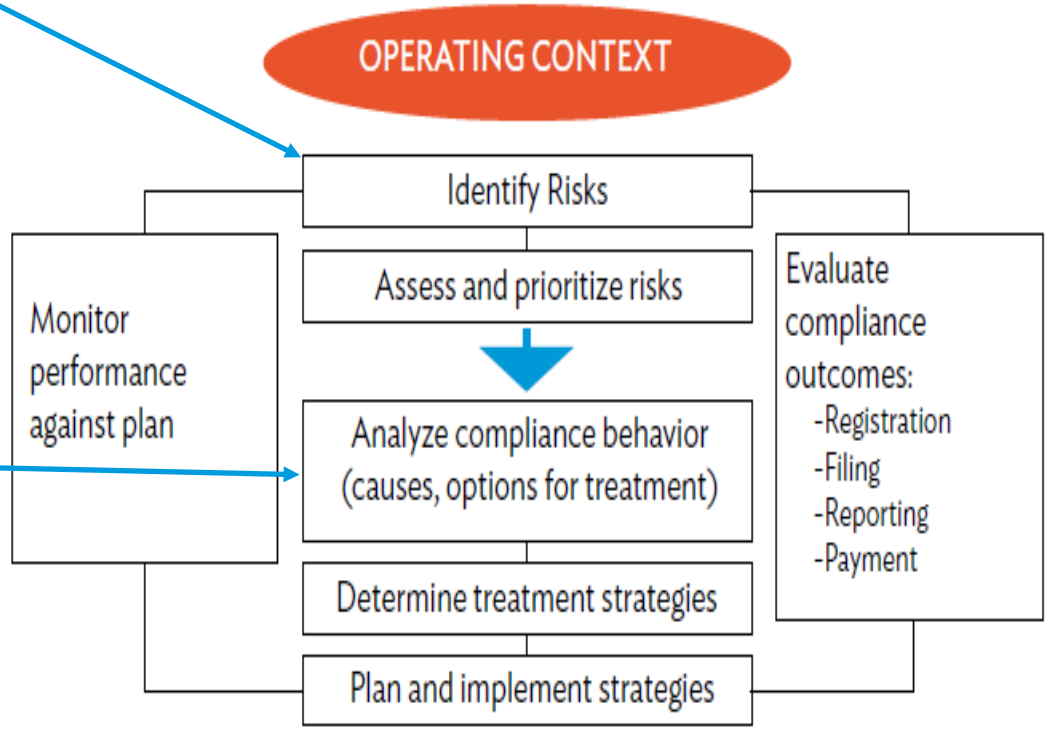
Two "logical" level of risk analysis

Strategic

- Provides a comprehensive map of risks to be addressed
- Helps RA allocate resources and prioritize activities
- Main scope of the compliance gap

Operational

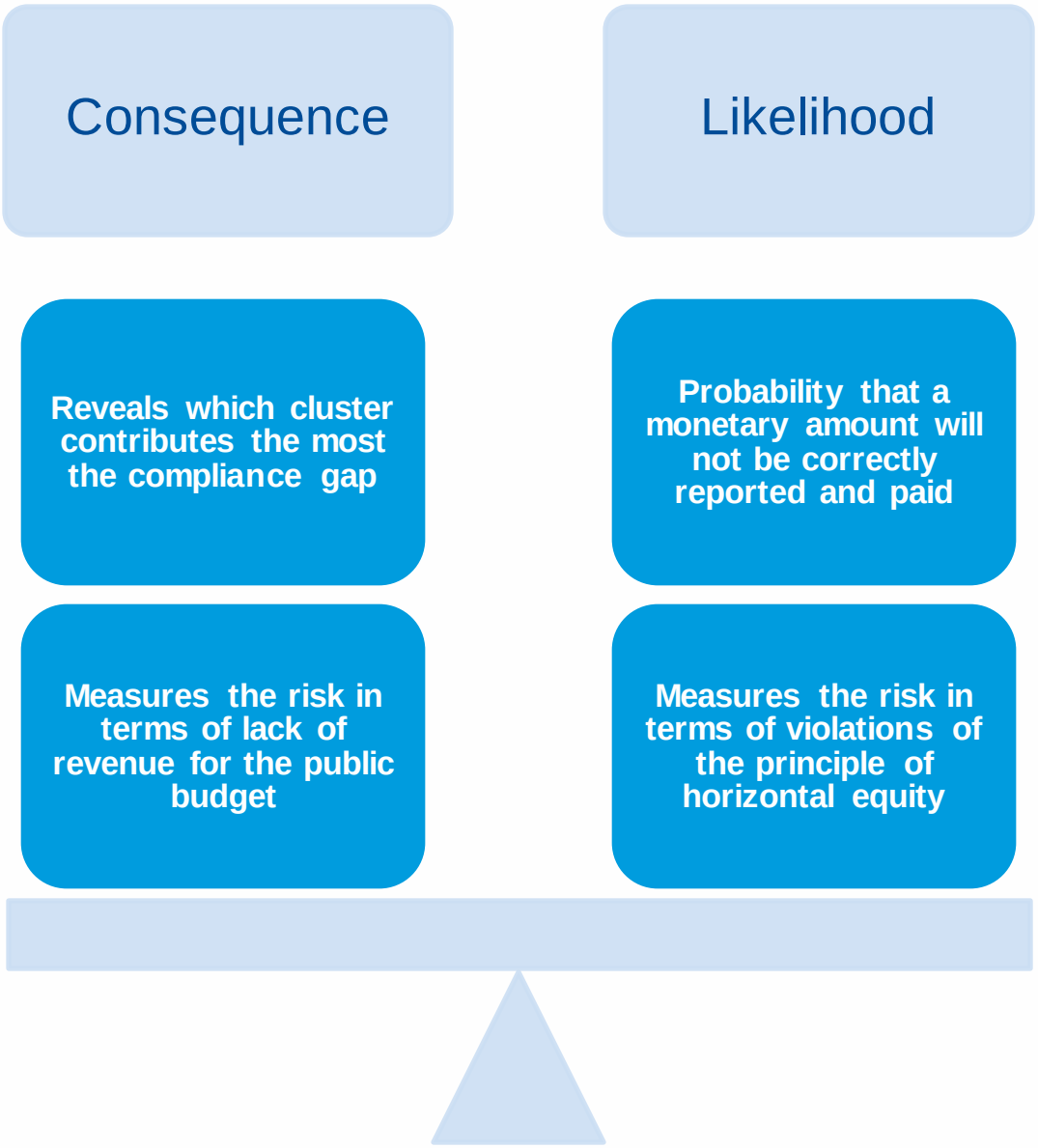
- Involves finding specific risk indicators to associate with each taxpayer
- CG estimates need to be supported by other indicators from RA databases and other sources



How to use TG in Risk Identification

- The main use of TG is at the strategic level, although Bottom-Up analyses are also useful at the operational level.
- The benchmark indicator is the Compliance Gap (CG, one of the component of TG).
- CG should be segmented by taxpayer cluster (e.g., sector of economic activity, size class, etc.).
- A two-dimensional view of risk is provided for each cluster based on two CG-derived indicators, named: Consequence and Likelihood

The two dimensions of risk



How to use asses the Risk MATRIX

Likelihood indicator = share of the CG of each economic sector in the potential collection of the same economic sector.

Consequence indicator = share of CG of each economic sector in the potential collection of the total of the economic sector

- Likelihood and consequences indexes are converted into an ordinal measure by assigning a class in the ranking scale to the value of the indicators.
- The ranking scale is comprised of five categories of risk: low, low-medium, medium, medium-high, and high.

The static VAT CG risk matrix by sector of economic activity

- Provide a measure of overall VAT compliance over a specific time interval (static)
- Allows to monitor simultaneously the two dimension of risk
- The rows display the classes of the Risk Consequence while the columns display classes of the Risk Likelihood

Indicator			Likelihood				
	Class		L	L-M	M	M-H	H
		description	low	low-medium	medium	medium-high	high
Consequences	H	high		BCD	CA,MA	JC	A, CB
	M-H	medium-high	G	H	N	CH, MC	CM
	M	medium		JB	JA,L	CICJ,RS,	CK
	L-M	low-medium	CL	F	OPQA	R	MB,QB,
	L	low	CFCG, DE, I, L	CCGE, K			

The two “states” of risks

Current risks

- Measures: Consequences and likelihood indicators
- Allows to identify the existing risk

Emerging risks

- Measures: rate of change of consequences and likelihood indicators
- Allows to identify the emerging risk

The overall CG risk matrix

The overall CG risk matrix provide a map of current, and emerging risks.

How to use it:

1. Identify clusters that need further analysis
2. Set priorities for RA activity
3. Assignment of a degree of "environmental" risk to each taxpayer

The degree of risk of each cluster should be compared with other performance indicators and audit results

The cooperation with CRM experts could help the CG experts to further detail the CG estimations to better fit the needs of the country

Segment	Indicators				Level 2017-2019	Trend
	Likelihood		Consequence			
	Level 2017-2019	Trend	Level 2017-2019	Trend		
A	H	H	H	H		
BCD	L-M	LH	L-M	H		
CA	L-M	LH	M-H	H		
CB	H	LM	H	M		
CCCE	L-M	H	L-M	LM		
CFCG	L	H	L	LM		
CH	M	LM	M-H	H		
CICJ	M-H	H	M	S		
CK	M-H	LH	L-M	H		
CL	L	LH	M	LH		
CM	M-H	LM	M-H	S		
DE	L	S	L	LM		
F	L-M	LM	L-M	M		
G	L	LM	M-H	M		
H	L-M	M	M-H	LM		
I	H	H	L	M		
JA	M-H	M	M	LM		
JB	L-M	LH	L-M	H		
JC	H	M	H	LH		
K	L	LH	L	M		
L	M	H	M	S		
MA	M	M	H	LH		
MB	H	S	M	S		
MC	M	S	H	LH		
N	M	M	H	LH		
OPQA	M	M	L	LM		
QB	H	S	L-M	M		
R	M-H	LM	M	S		
RS	M-H	S	M-H	LH		
TU	L	S	L	S		

Integration of CG likelihood and consequences in a CRM Framework

CG and CRM common ground

CRM (4 compliance pillars)	Compliance gap	Macroeconomic
Register, if required to do so.	Assessment gap	Hidden economy [completely - underground]
File a return form, on time and in full.	Assessment gap	Hidden economy [completely and partially-moonlighting]
Correctly Report their tax affairs .	Assessment gap	Hidden economy [moonlighting]
Pay any tax liability that may result.	Collection gap	Not included

Integration of CG likelihood and consequences with CRM Framework

1. Assessment of the risks of the CRM Framework

Assessment of likelihood

Ex: Use of the indicator of non filers of VAT declarations on due time (Number of VAT declarations non filed by due date / number of VAT declarations expected from registered VAT taxpayers of each cluster)*100

Use of the indicator of non payment of CIT declarations on due time (Number of unpaid CIT declarations by due date / number of payments of CIT declarations expected from registered CIT taxpayers of each cluster)*100

+ Establishment of a scoring table to rate the 5 levels of Likelihood of the risks

Integration of CG likelihood and consequences in a CRM Framework

Assessment of consequences of non compliance risks:

Damage of image of Tax administration, loss of revenues…

Tax Gap can be used to establish of a scoring table to rate the 5 levels of consequences of the risk if the impact is measured in terms of loss of revenues

Ex: VAT Tax gap to measure the consequences of the Risk of Non filing of VAT declarations on due time

CIT Tax gap to measure the consequences of the Risk on Non payment of CIT declarations on due time

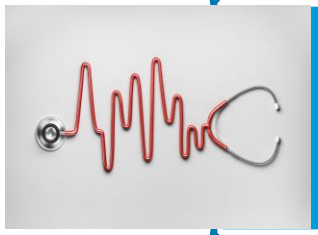
+ Establishment of a scoring table to rate the 5 levels of Consequences of the risks

Monitoring

What should we do?

What do we want to measure with the compliance gap?

What does the work of tax administration impact on?



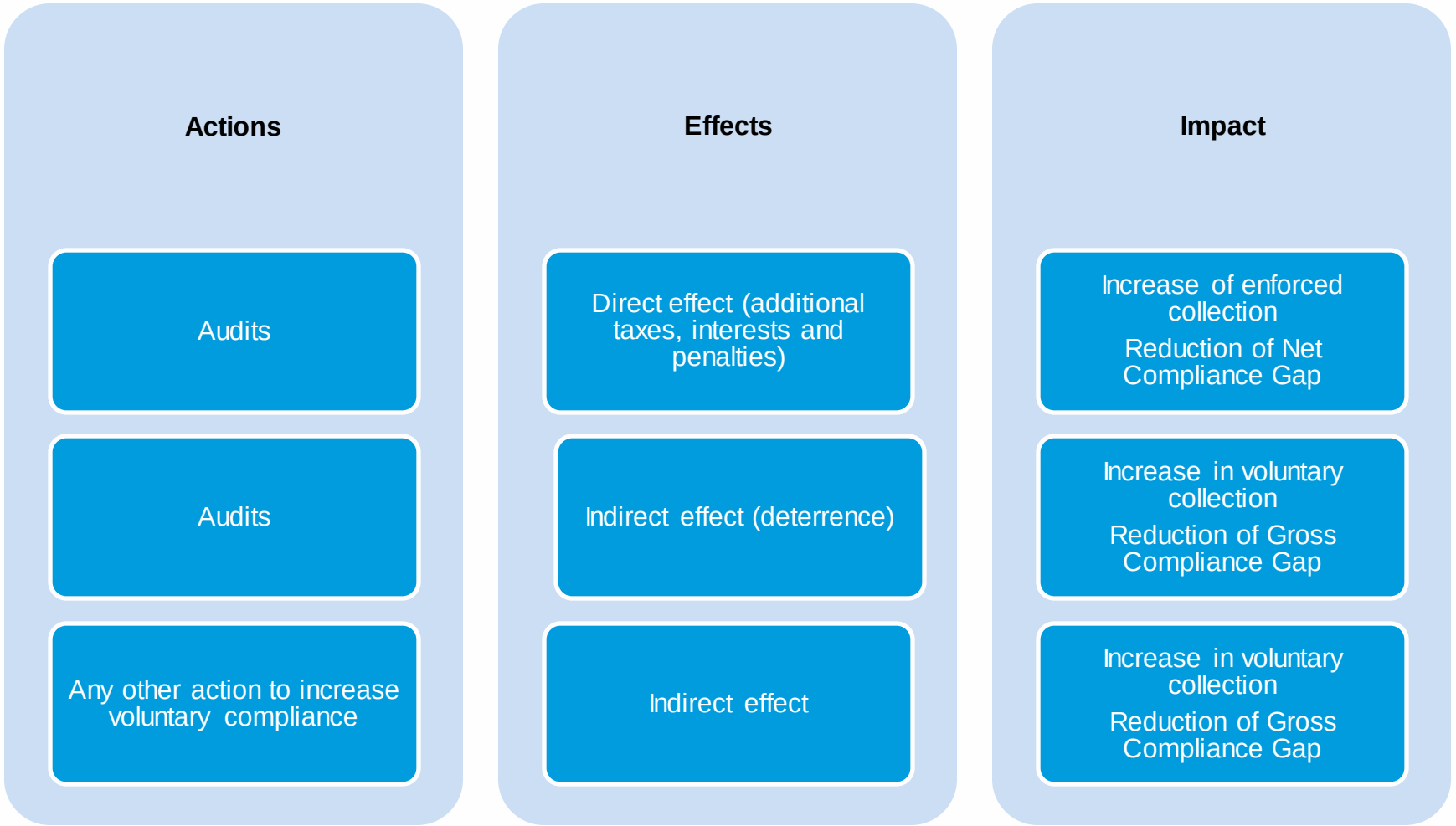
How can it be measured?

What is the most appropriate measure for evaluating RA effort?

How can these indicators be used?

Why do they reinforce the core strategy of RA?

RA actions, their effects, and their impact on CG



How to monitor the indirect effect (1/2)

We need an indicator that quantifies, to the extent possible, changes in taxpayers' attitudes toward tax compliance

The following effects should not affect the dynamics of the indicator:

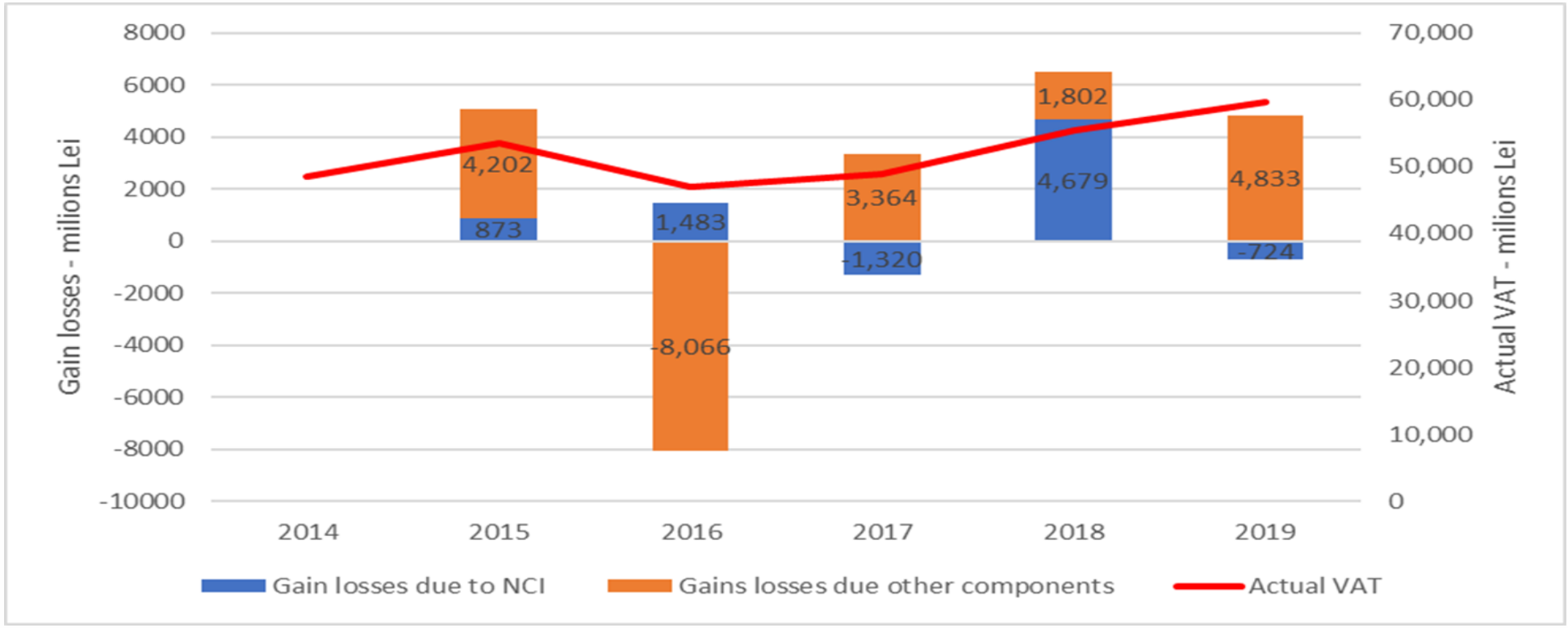
- changes in price and quantity, i.e. changes in nominal GDP
- changes in tax legislation, i.e. changes in tax rate

Basic indicator: Rate of Change of Non-Compliance Indicator = $\Delta NCI_t = NCI_t - NCI_{t-1}$

where NCI = $\frac{gross\ compliance\ gap}{potential\ tax}$

$\Delta NCI < 0$ increase in tax compliance $\Delta NCI > 0$ decrease in tax compliance

Step 1. The RA must be aware of the impact of CG on revenue performance



Gains and losses due to compliance changes can be calculated using ΔNCI to construct a counterfactual scenario

RA cannot affect gains and losses due to other components

How to monitor the indirect effect (2/2)

Changes in VAT can be influenced by change in NCI (ΔNCI) and by other component (see A and B component of the previous formula).

ΔNCI_t can be influenced by changes in the economic structure (compositional effect)

$$\Delta NCI = NCI_t - NCI_{t-1}$$

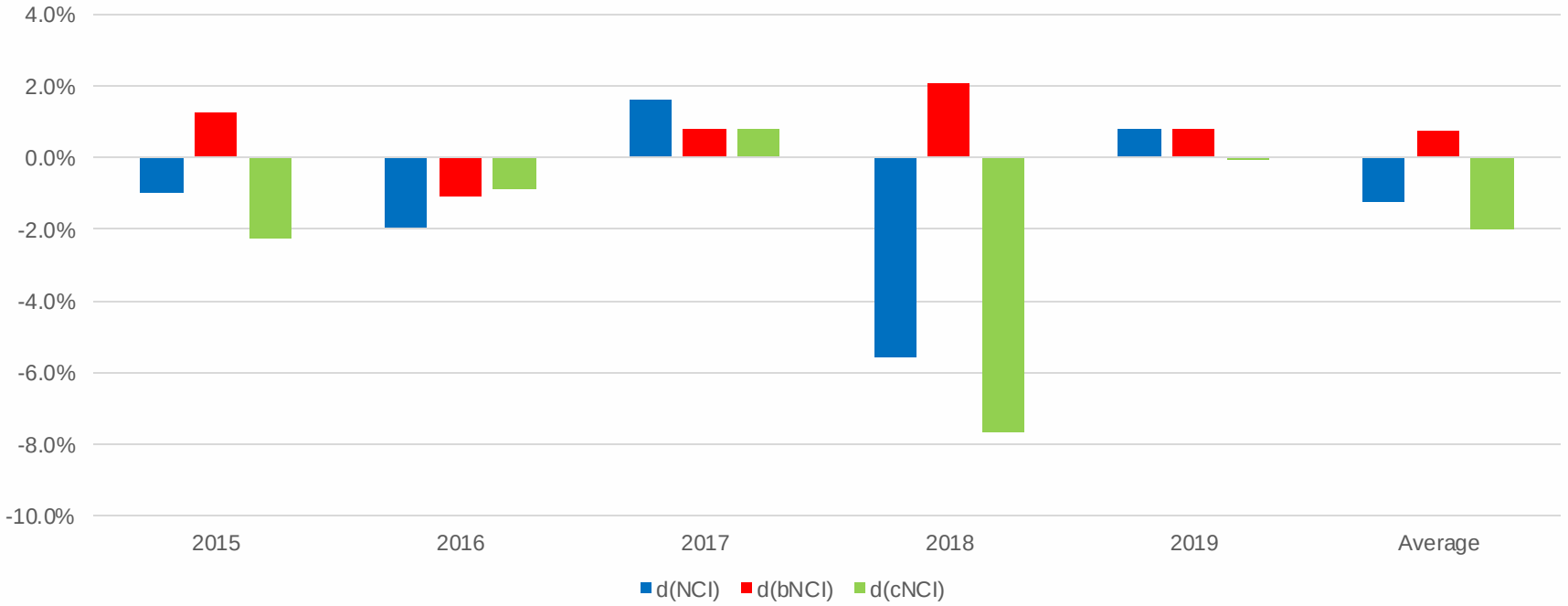
$$\Delta NCI = \Delta cNCI + \Delta bNCI$$

- ΔNCI: Changes in tax compliance
- $\Delta cNCI$: Compositional effect
- $\Delta bNCI$: Behavioral effect

The composition effect can be calculated $(\Delta cNCI)$, and the residual is defined as the behavior effect $(\Delta bNCI)$.

Revenue administration should monitor the behavior effect.

Step 2. The RA must be aware of the impact of composition effect, d(cNCI), on dNCI



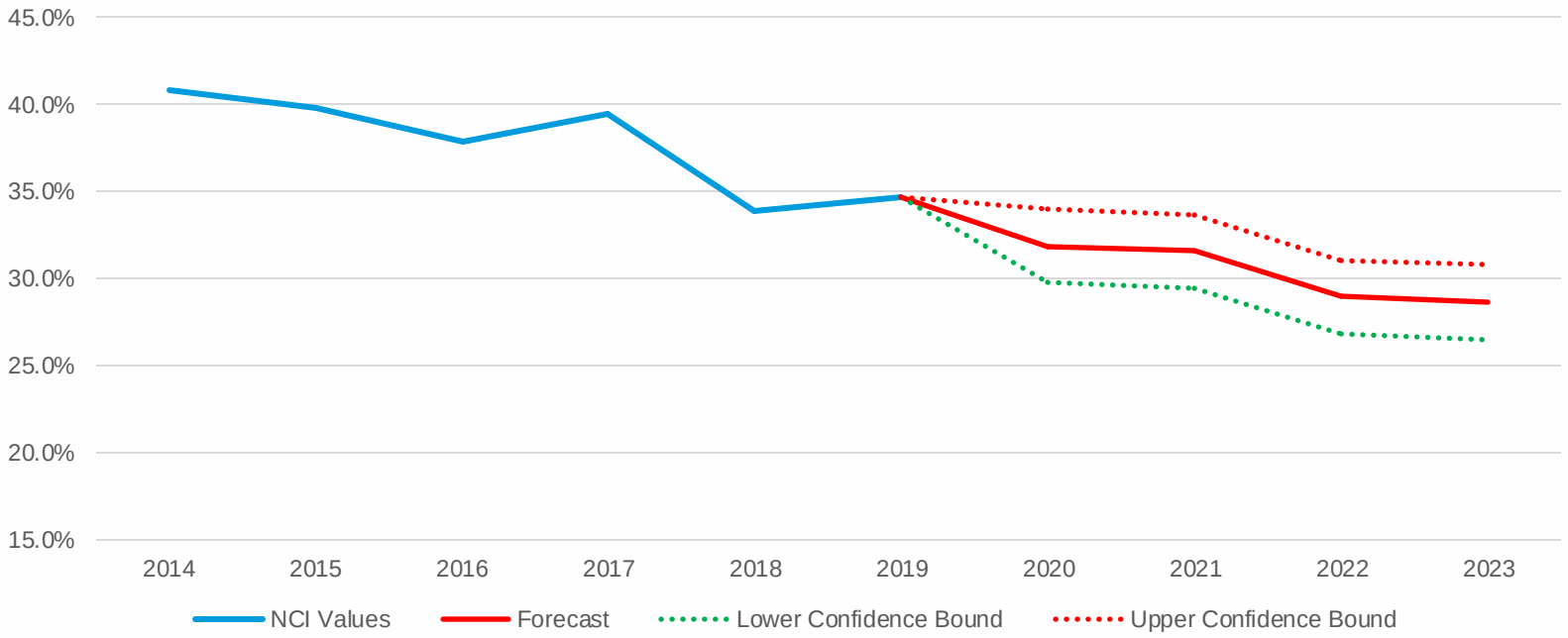
Changes in the economic structure can significantly affect the performance of NCI

The impact is greatest when the economic system experiences shocks (COVI19 pandemic, sharp increase in energy prices)

The effect is due to the fact that each cluster of taxpayers is characterized by a different degree of compliance (Likelihood)

Tax administration cannot influence the composition effect, so this must be ruled out

Step 3. The RA can use d(bNCI) to set medium-term goal



D(bNCI) can be used to establish a path to monitor the indirect effect on tax compliance

Set medium-term goal, to distinguish temporary fluctuations from lasting changes

The goal must be supported by a confidence interval, which helps distinguish significant changes in the NCI trend from fluctuations due to statistical error

How to monitor the direct effect of tax audits (1/2)

Hypothesis

- Audit yield should be positively correlated to the extent of "intentional" noncompliance

Method

- The relationship between audit yields and the gross compliance gap for the total and for each taxpayer cluster should be analyzed

How to monitor the direct effect of tax audits (2/2)

How to do

- Structure an archive of tax assessments that allows for time-series analysis and contains the information needed for analysis
- Classify the yield of tax assessments on both a cash and accrual basis

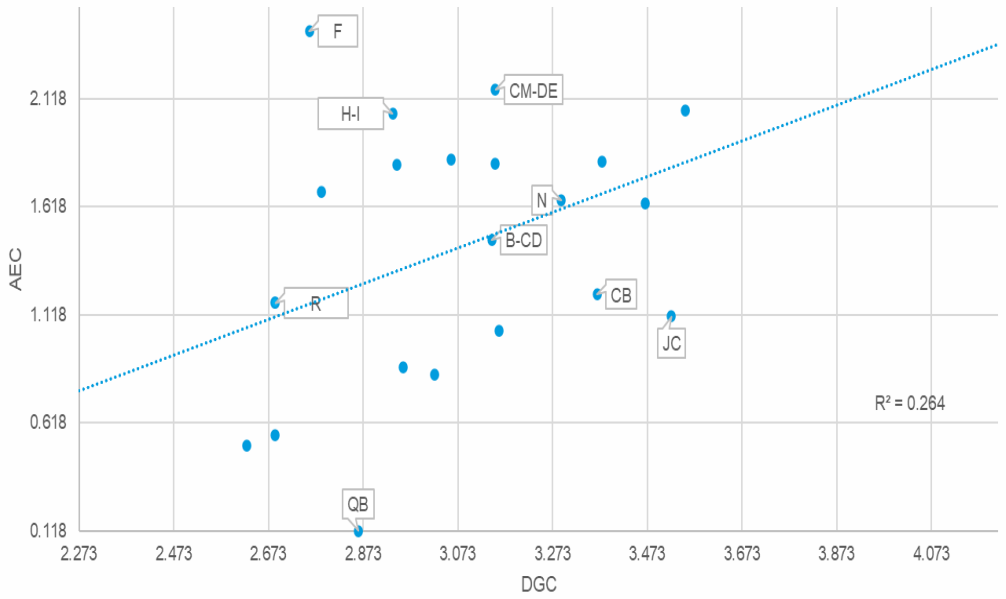
How to monitor

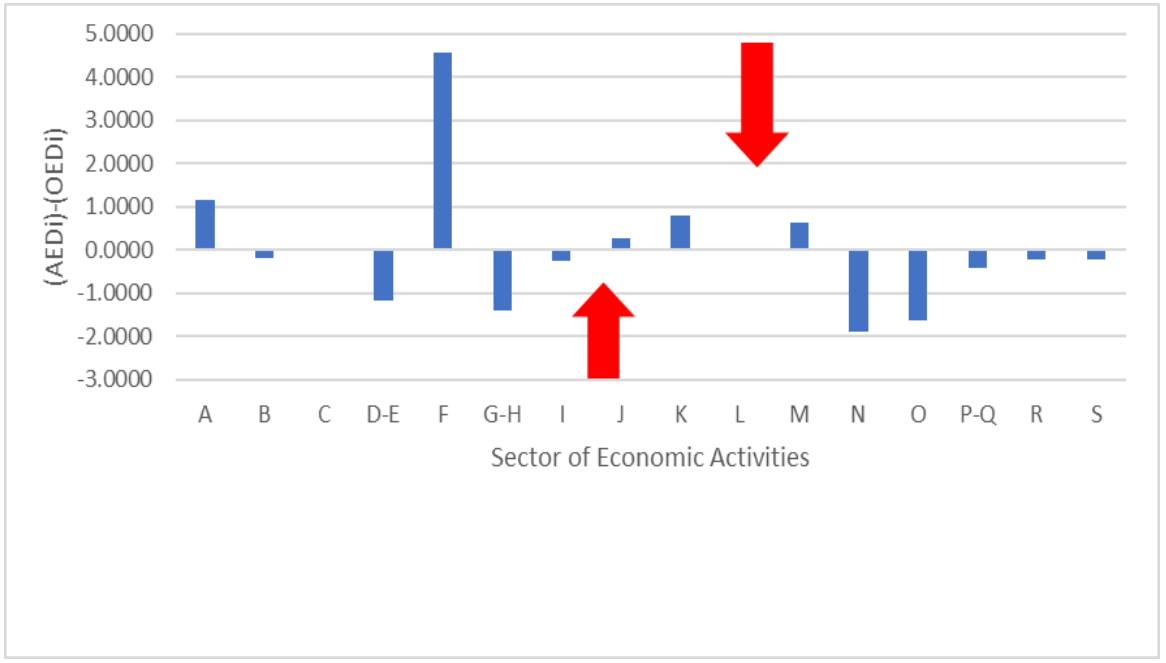
- Check whether the ratio of audit yield to the compliance gap is stable, increasing or decreasing.
- Check whether there is a correlation between audit yields and the compliance gap of each cluster

How to use

- Monitor the efficiency of the audit activity over time
- Better allocate the distribution of controls across taxpayer clusters

Comparison of Actual Enforcement Yields and Optimal Enforcement Yields





Left graph: the blue line indicates the optimal distributions of fiscal controls and the dots the actual distribution over the sectors of economic activity

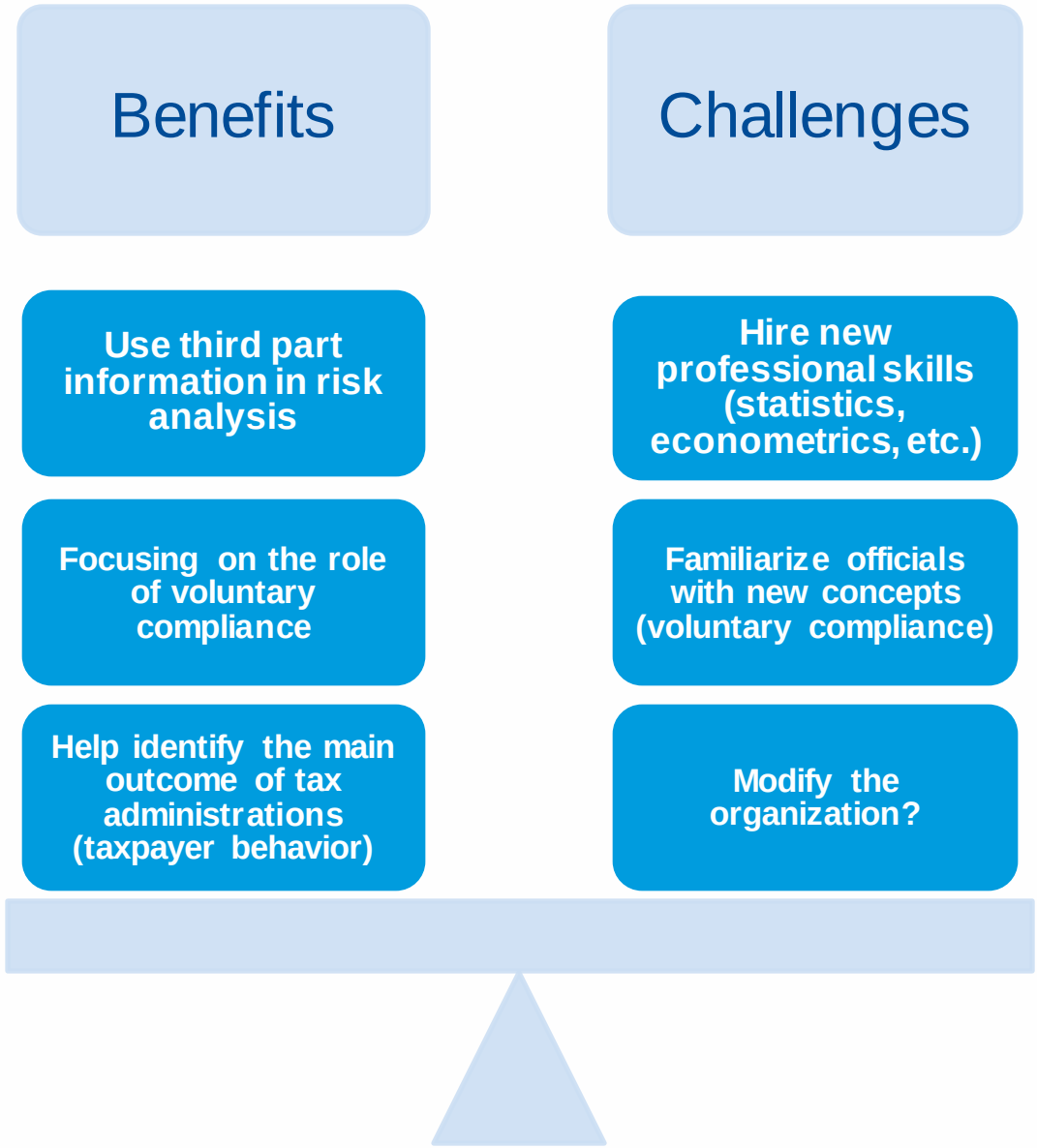
Right graph: the bars show the difference between the actual and the optimal enforcement yields over the sectors of economic activity

Where bars are negative, efforts should be increased, and in order to obtain the necessary resources, efforts in sectors with positive bars could be reduced

Concluding remarks

Reinforcing the core strategy of revenue administration

Benefits and Challenges



Thank you for your attention

Back slides

Indicators for monitoring indirect effect

Link between the NCI changes and Actual Revenue trend

Reducing the NCI implies an increase in voluntary compliance, but this increase could not cause an increase in actual Revenue

Example for VAT

- reducing the standard VAT rate might decrease NCI and thus increase revenue, but this increase might not offset the reduction in revenue caused by lower payments by taxpayers who complied correctly with the previous rate. The rate of (positive or negative) change shows (to some degree) the impact that the tax administration (i.e., Performance) is having on those sectors.
- To monitor this effect, "gains and losses due to CG fluctuation" must be estimated.
- The “Actual VAT at invariant compliance” VATIC can be used to measure "gains and losses due to CG fluctuation".

Link between the NCI changes and Actual VAT trend (2/3)

"Actual VAT at invariant compliance" VATIC: "What is the amount of revenue that would have been collected if the non-compliance rate, NCI, in the present period were the same as in the previous period?".

$$VATI_{(t+1)} = (1- NCI_t) * PVAT_{(t+1)}$$

Where PVAT is the potential VAT

The actual VAT increase can be decomposed as follow

$$VAT_{(t+1)} - VAT_t = (VAT_{(t+1)} - VATI_{(t+1)})+(VATI_{(t+1)}-VAT_t) =$$

$$\underbrace{-(NCI_{(t+1)}-NCI_t) * PVAT_{(t+1)}}_{A} + \underbrace{(1-NCI_t))*(PVAT_{(t+1)}-PVAT_t)}_{B}$$

Where A measures the impact of NCI change on the actual VAT, and B the change due to other components.

Integration of Compliance Gap and Compliance Risk Management in Practice

Suggestions for discussion

- Is the knowledge of CRM and CG experts adequately integrated? What would you propose to improve this integration? (Workshops, joint missions, ...)
- How can we better capture the needs of countries? (increase granularity of estimates, e.g., segment by size classes, focus on specific aspects, e.g., informal economy, etc.)
- Which are your priorities in risk identification?
- What are the main concerns with using CG in the monitoring step?
- What are the main difficulties in applying this model in less developed countries?