



EUROPEAN COMMISSION
Structural Reform Support Services
MEETING OF EXPERTS

The reform of corrective and compensatory mechanisms in Italy and the analysis of the fiscal gap as a tool to orientate local fiscal policy

SOSE S.p.A

29-30th of January 2018
Office of the Government,
Room 263, Gedimino av., 11 Vilnius

DATI CHE CREANO VALORE.

www.rose.it



BRIEF DESCRIPTION OF SOSE SPA

Sose is owned by the Italian Ministry of Economy and Finance
and Banca d'Italia.

It is the methodology partner for the strategic analysis of data in Tax,
Government and Corporate matters.



The Company develops statistical-economic-ICT solutions in order to promote **tax compliance**. It also works at determining the “**Standard Expenditure Needs**” in the implementation of fiscal federalism in order to guarantee a more efficient and equitable allocation of resources.

Through the know how and experience accumulated over the years, SOSE offers **ad hoc solutions** to several public and private organizations.



Headquarters
in Rome

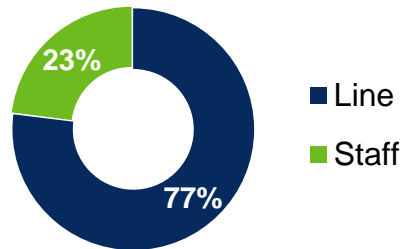


Since
1999

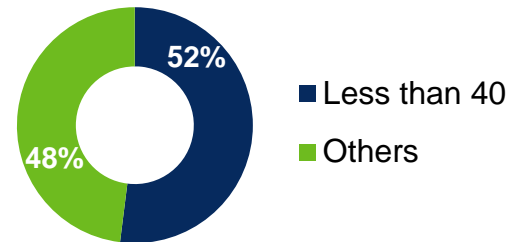


150
Employees

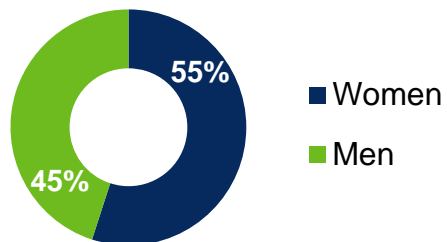
TEAM



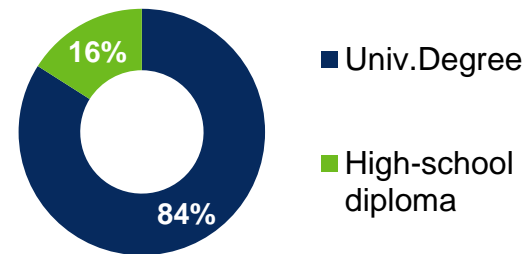
AGE



GENDER



LEVEL OF EDUCATION



COMPLEX STATISTICAL
ANALYSIS



MICRO-
ECONOMIC ANALYSIS

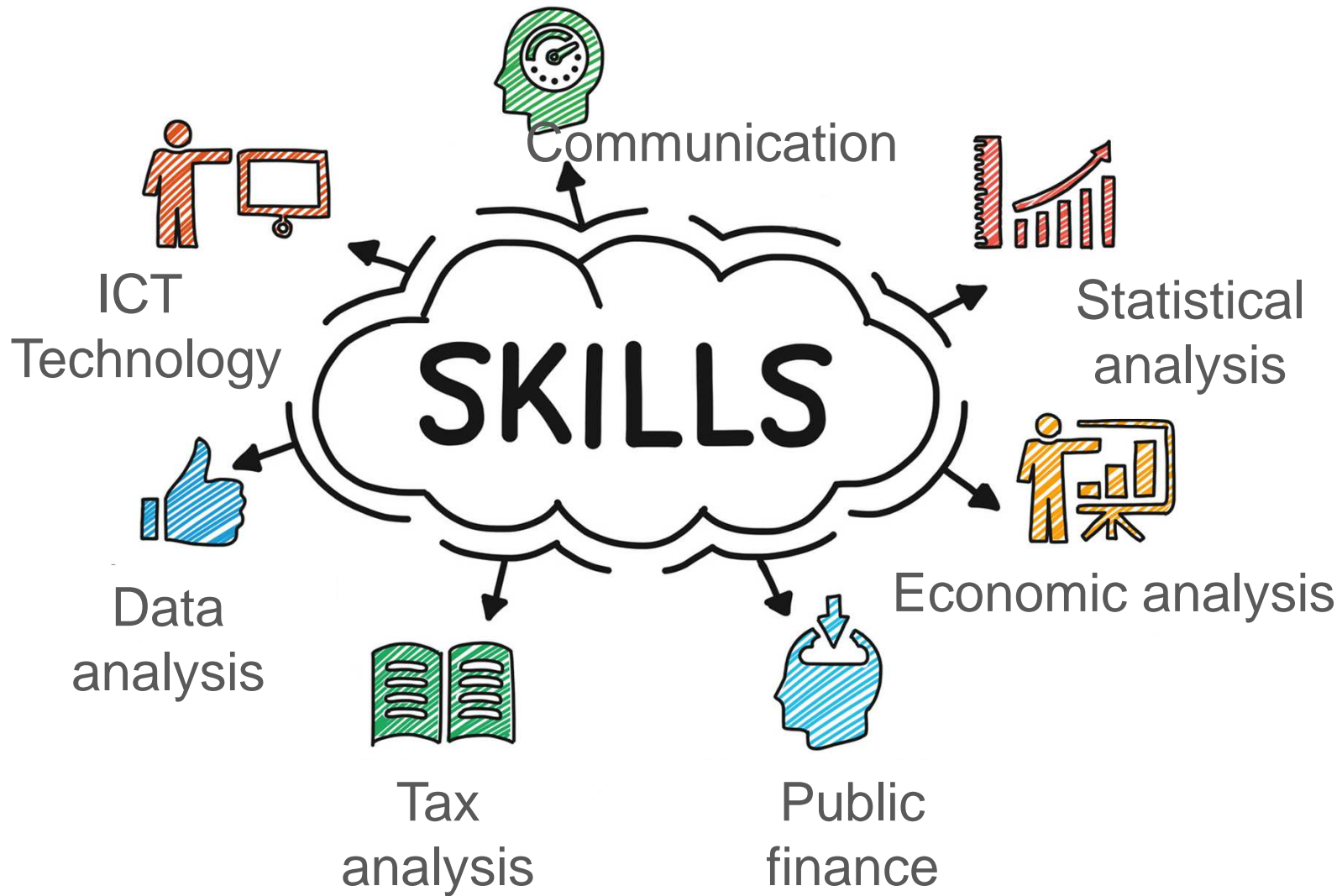


ICT



STRATEGIC
DATA ANALYSIS





**WE PROVIDE SOLUTIONS FOR THE
ECONOMIC SYSTEM**

**Tax
Compliance
Systems**

**Local
Governments
Expenditure
Needs**

Tax Studies

**Economic
Solutions**



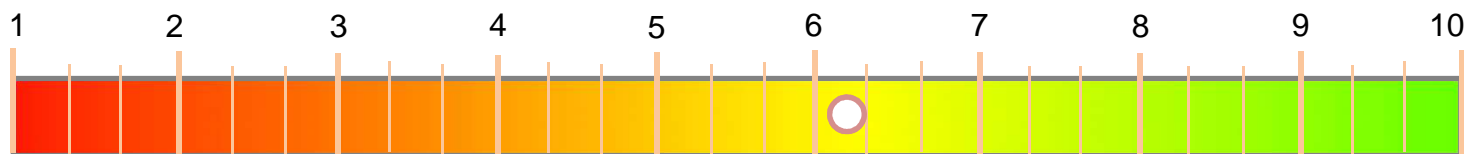
SYNTHETIC INDEX OF RELIABILITY

An economic and statistical system to determine, based upon the data of the companies and their respective sectors of operation, acceptable levels of «tax reliability» in order to promote tax compliance

IT REPRESENTS EACH TAXPAYER'S POSITIONING RELATED TO HIS/HER TAX BEHAVIOR.

IT IS A SIMPLE AVERAGE OF ELEMENTARY INDICATORS.

The value of the synthetic index of reliability ranges **between 1 and 10**





SOSE elaborated and implemented a system for the evaluation of Standard Expenditure Needs of Italian Local Governments, with the goal of distributing intergovernmental funds in an equitable and transparent way

**...in a shared process
with**



Institutions



Ragioneria
Generale
dello Stato

MINISTRY OF ECONOMY AND FINANCE



IFEL REPRESENTING THE MUNICIPALITIES



UPI REPRESENTING THE PROVINCES



ITALIAN NATIONAL INSTITUTE OF
STATISTICS



**QUICK SELECTION AND ANALYSIS,
SIMPLE UTILIZATION OF CONTROL
TOOLS, EFFICIENCY, EFFECTIVENESS**

Analysis tools

Control indicators, efficiency
parameters, risk measurement,
profile selection

Standardization of the analysis
process, report of support

B.I. innovative technologies

MAIN PROJECTS



Impact analysis of tax incentives on Italian companies (Presentation to COMPIE conference 2014)



The incidence of VAT on the dynamics of private consumption: evaluation of the elasticity and of the effects on tax collection



Base Erosion and Profit Shifting - BEPS



Revision of amortization rates: analysis on tax collection of possible measures



SOSE provides solutions to companies and consultants in order to reach a deeper knowledge of their respective market segments



It is a tool helping to measure business performance and to get information to compete on the market.
The objective of the analysis is to improve the management of the companies and orient their strategy by acting on different business models, levers of competition and marketing channels.



The Report provides a snapshot of the main economic sectors through a synthetic description of their structure and dynamics.
A number of aspects are analyzed in order to assess the positioning and performance of the micro, small and medium-sized companies and of the main industries. Particular attention is also given to the various Business Models and to the competitive factors that can outline the possible evolutions of each industry.

ECONOMIC AND STATISTICAL STUDIES

- ✓ Risk analysis
- ✓ Rating models (turnover, region, economic sector, organizational model, qualitative evaluation of ratios and flows, time trend...)
- ✓ Reports on economic sectors, regions, etc.
- ✓ Impact analysis of laws and regulatory actions

MODERNIZATION AND REFORM OF TAX ADMINISTRATIONS AND LOCAL GOVERNMENTS

- ✓ Benchmarking systems to analyze and evaluate the performance of local and national Governments
- ✓ IT systems to facilitate the relation between tax administrations and taxpayers

TAX COMPLIANCE

- ✓ Strategies and tools to promote tax compliance
- ✓ Definition of models for tax fraud risk

OVERVIEW OF THE ITALIAN SYSTEM OF LOCAL PUBLIC FINANCE

BACKGROUND INFORMATION ON ITALY: TIERS OF GOVERNMENT

Regions (20 of which 5 with special statutes), 19% of total current public expenditure (143 billion euros);

Main expenditure responsibilities

Protection of health; Public transport; Complementary social welfare; Higher education and vocational training.

Provinces (93 of which 17 in special regions) and Metropolitan districts (14 of which 4 in special regions), 0,8% of total current public expenditure (6 billion euros);

Main expenditure responsibilities

Management of provincial road network; Management of public high school buildings; Environmental protection; Delegated functions by regions in local public transport and vocational training.

Municipalities (7.978 of which 1.351 in special regions), 6,8% of total current public expenditure (52,2 billion euros);

Main expenditure responsibilities

Environment protection and waste management; Social services, childcare and nursery schools; School-related services; Local police; Local transport and maintenance of local roads; Registry, Town planning and Central administration, Culture and recreation, Economic development.



BACKGROUND INFORMATION ON ITALY: INTERGOV. FISCAL RELATIONS

Regions

- Protection of health is fully financed by formula grants and local taxes/fees
 - *fiscal equalization system is based on the difference between standard expenditure needs and fiscal capacity, health expenditure is standardized by the State General Accounting Department (Representative expenditure system based on the population structure by age), Regional fiscal capacity is computed by the Department of Finance*
- Other current expenditure items of regions (only those with normal statute) will be standardized by SOSE, the methodology is under construction

Provinces and Metropolitan districts *(the whole system is under reform)*

- No equalization system in place, current expenditure is financed completely by local taxes
 - *current expenditure is standardized by SOSE, only for 86 local authorities in normal regions, using a Regression Cost Base Approach, this parameter has been used in the spending review program*

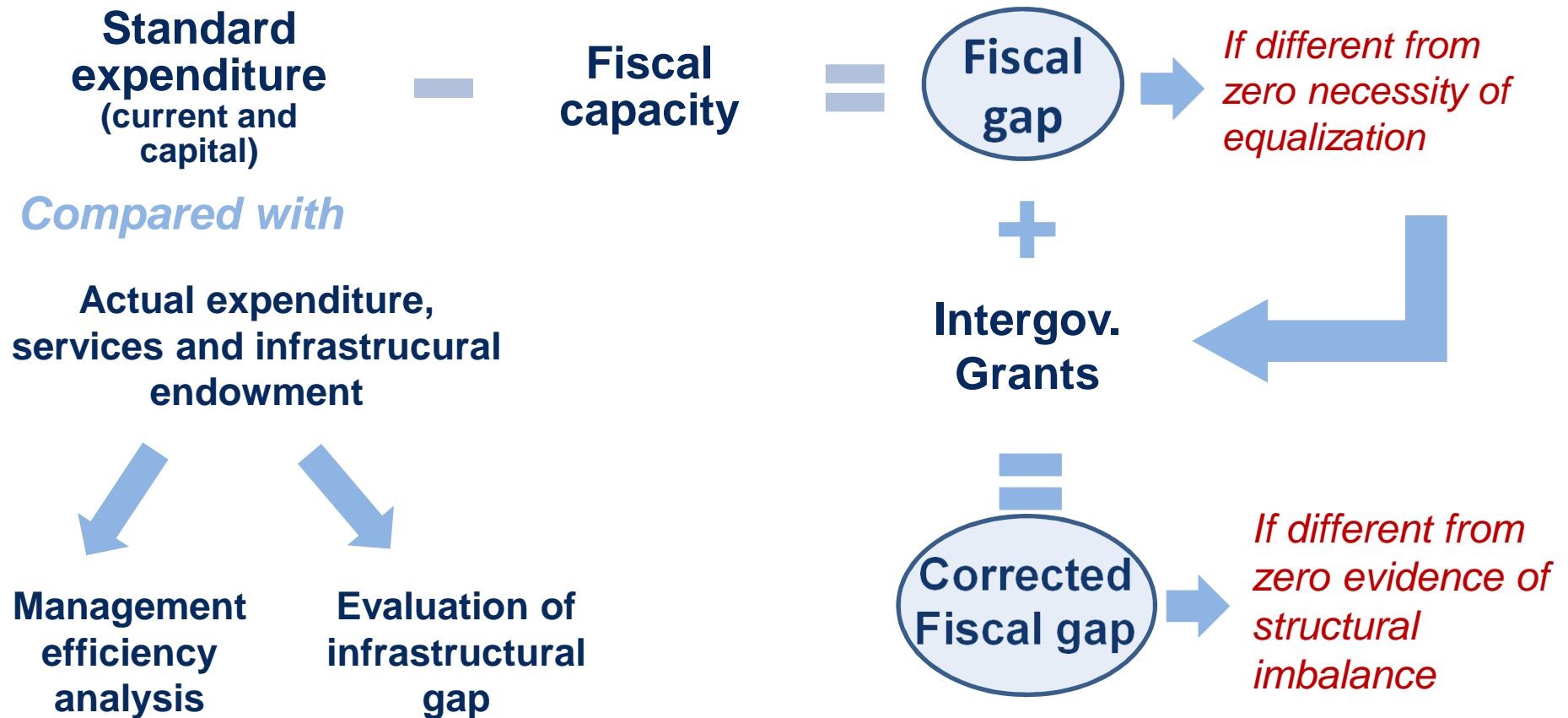
Municipalities *(comuni) (6.627 local authorities in normal regions)*

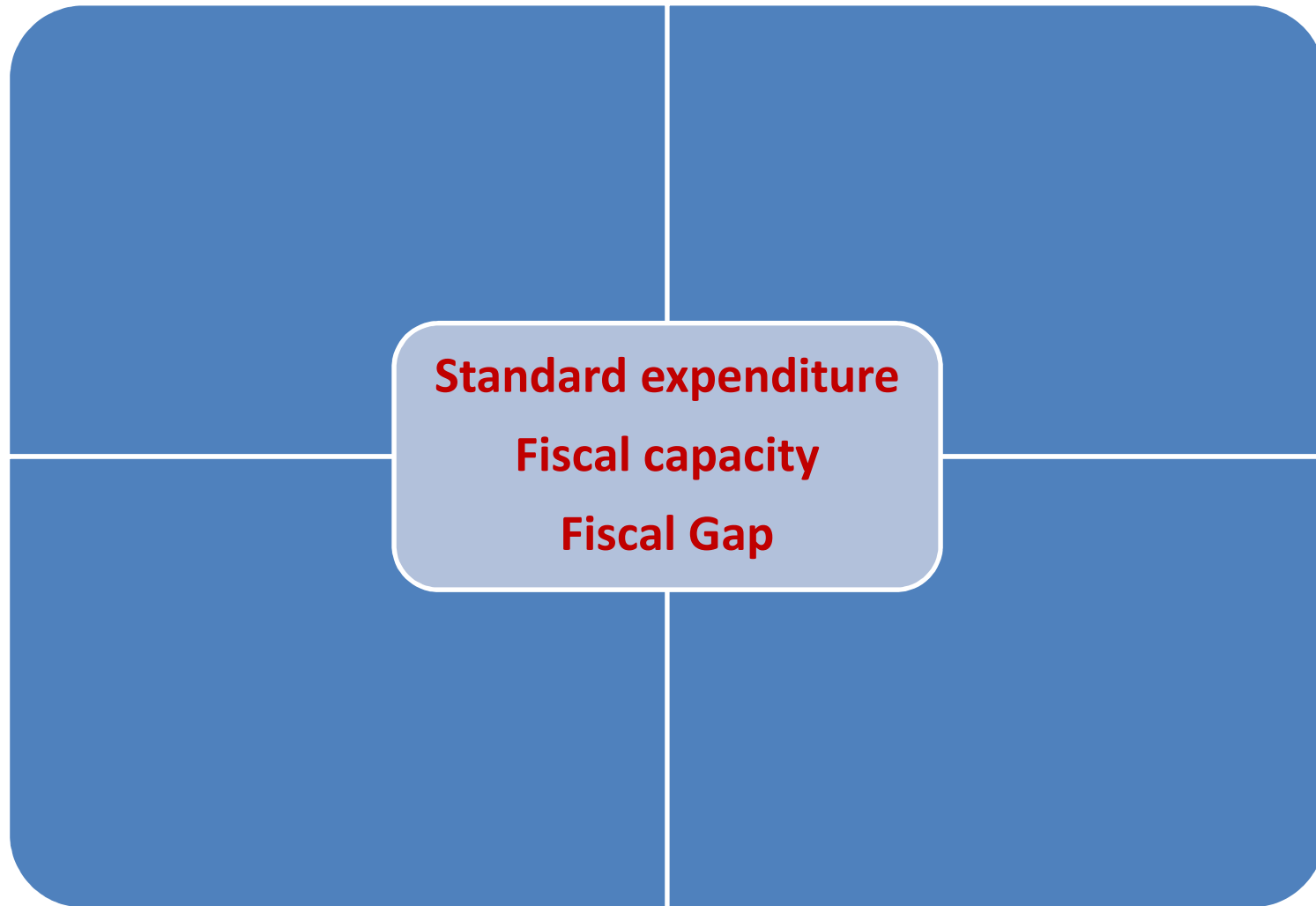
- Current expenditure is fully financed by local taxes/fees and formula grants (the transitional period from an equalization system based on actual expenditure will end in 2021)
 - *fiscal equalization system is based on the difference between standard expenditure needs and fiscal capacity, current expenditure is standardized by SOSE using a Regression Cost Base Approach, Municipal fiscal capacity is computed by the Department of Finance in cooperation with SOSE*

EVALUATION OF STANDARD EXPENDITURE NEEDS AND FISCAL CAPACITY

THE POWER OF STANDARDIZATION - 1

For each local government and in aggregate at macro level





Equalization system

(Corrective and compensatory mechanisms)

Standard expenditure
Fiscal capacity
Fiscal Gap



Equalization system

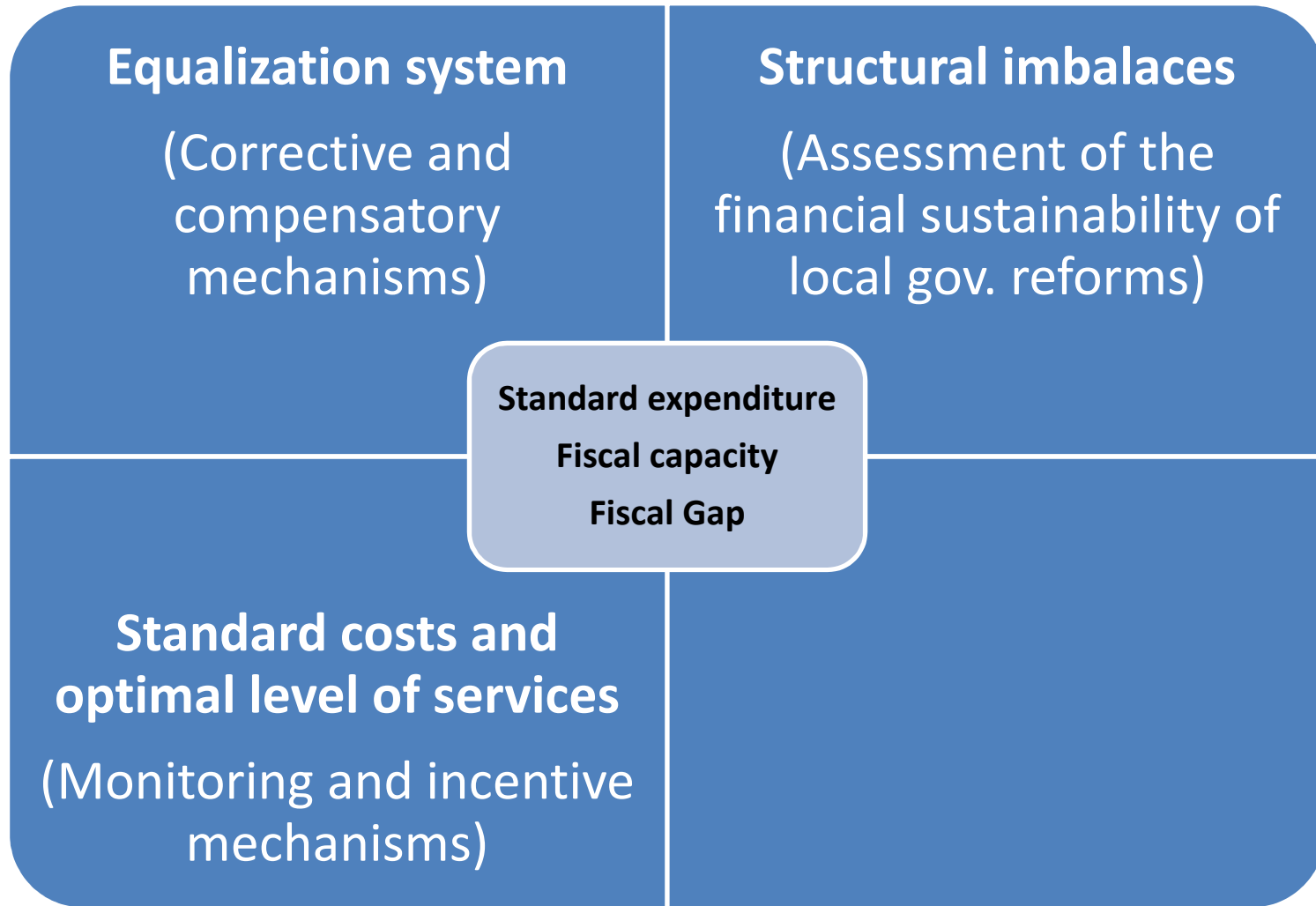
(Corrective and compensatory mechanisms)

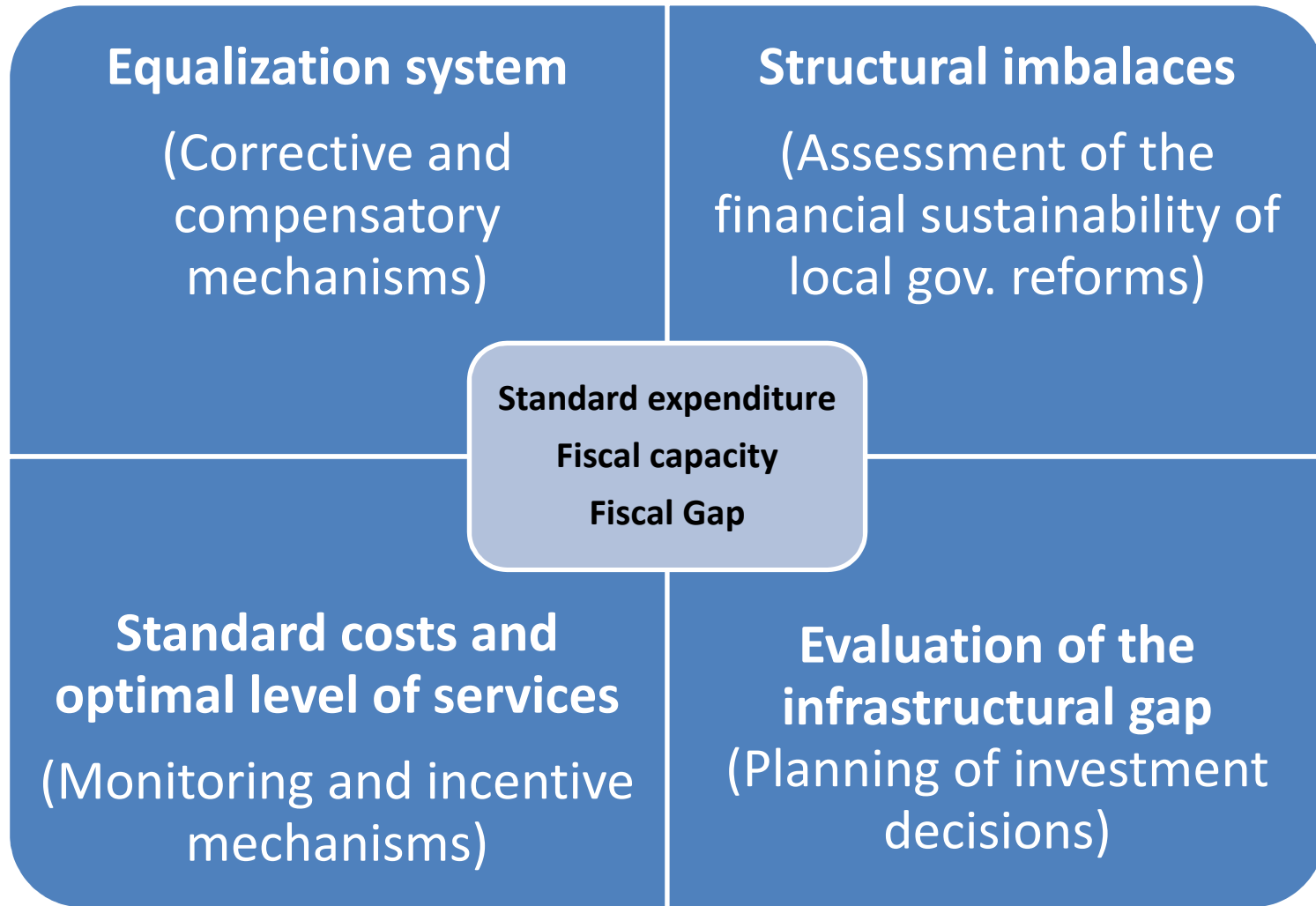
Structural imbalances

(Assessment of the financial sustainability of local gov. reforms)

Standard expenditure
Fiscal capacity
Fiscal Gap







SOSE METHODOLOGY RELIES ON FOUR MAIN PILLARS:



In Italy the same methodology is adopted for different local government tiers

- **Municipalities (6627 units)** => 8 functions using 85 variables
- **Provinces (86 units)** => 5 functions using 12 variables
- **Regions (15 units)** => under construction

Italy condominium



... resource management is handled through a system of coefficients and not to the negotiations of the different members

Navigational compass



.... possibility to measure the level and the quality of local expenditures (benchmarking)

THE THEORETICAL FRAMEWORK (REGRESSION COST BASE APPROACH)



SUPPLY SIDE

COST FUNCTION

$$y = s(g_s, g_e, p, A)$$

y = total service cost

g_s = exogenous load factors

g_e = endogenous output

p = input prices

A = supply control variables (total factor productivity)

Expenditure function

(reduced form of the cost function)

$$y = f(Q, R, p, A, g_s)$$



DEMAND SIDE

DEMAND FUNCTION

$$g_e = d(Q, R, y)$$

g_e = endogenous output

Q = demand control variables (preferences)

R = income

y = service cost

THE THEORETICAL FRAMEWORK (REGRESSION COST BASE APPROACH)



SUPPLY SIDE

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$$y = s(g_s, g_e, p, A)$$

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DEMAND SIDE

DEMAND FUNCTION

$$g_e = d(Q, R, y)$$

- g_e = endogenous output
- Q = demand control variables (preferences)
- R = income
- y = service cost

Output function

(reduced form of the demand function)

$$g_e = h(Q, R, p, A, g_s)$$



SUPPLY SIDE

COST FUNCTION

$$y = s(g_s, g_e, p, A)$$

y = total service cost

g_s = exogenous load factors

g_e = endogenous output

p = input prices

A = supply control variables (total factor productivity)

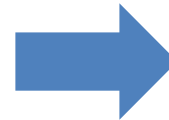
Expenditure function

(reduced form of the cost function)

$$y = f(Q, R, p, A, g_s)$$

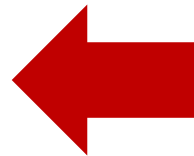
Benchmark of expenditure

- Main pillar of the **new equalization system of municipalities** (with the fiscal capacity)
- Main variable to assess the sustainability of the **spending review program of provinces** (with fiscal capacity)



Benchmark of output

- Evaluation of the **standard level of services**
- Main component of the **performance evaluation**
- Main component of a future **incentive system**



DEMAND SIDE

DEMAND FUNCTION

$$g_e = d(Q, R, y)$$

g_e = endogenous output

Q = demand control variables
(preferences)

R = income

g_s = exogenous load factors

y = service cost

Output function

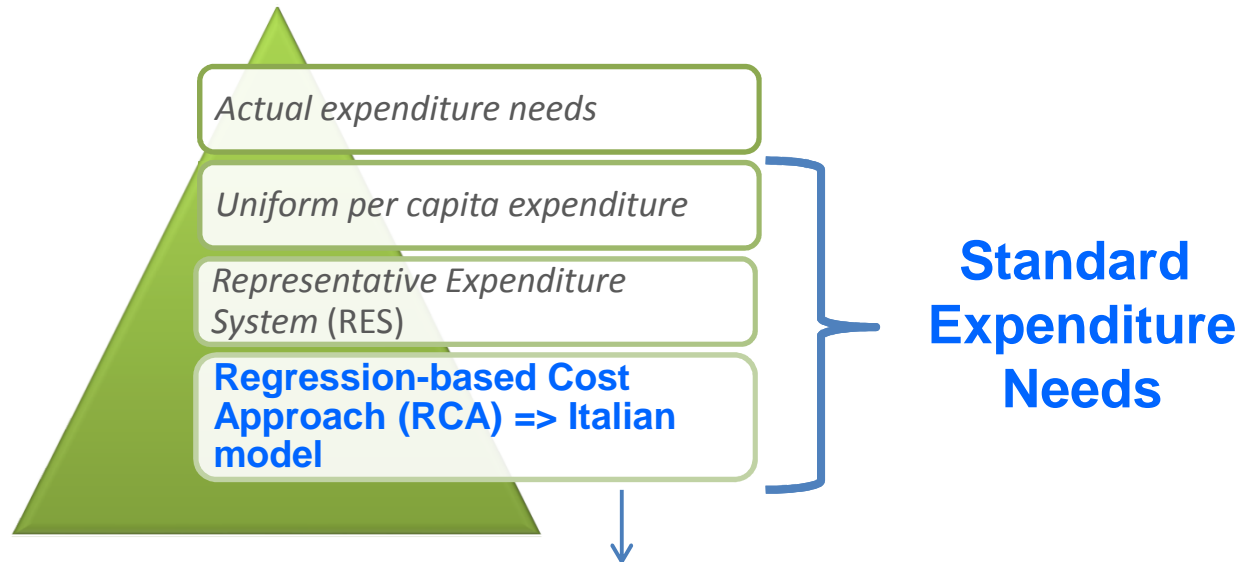
(reduced form of the demand function)

$$g_e = h(Q, R, p, A, g_s)$$

p = input

A = supply side control variables

The main techniques and the Italian choices



$$\text{Standard expenditure (y)} = \alpha_1 X_1 + \alpha_2 X_2 \dots + \alpha_i X_i \dots + \alpha_n X_n$$

Expenditure function → α are weights in euros and X are context variables (e.g. population by age)

Cost function → α are standard costs and X are service variables (e.g. tons of waste disposed and recycled, school meals, elderly people assisted in residential care etc..)

In all cases α are parameters to be estimated using a linear regression model

DATABASE CONSTRUCTION

INFORMATION FLOW

Questionnaire



Standard expenditure needs web portal project
opendata.sose.it/fabbisognistandard/



Local authorities:
6.700 Municipalities
220 Unions
86 Provinces

SOSE also verifies accurately the quality of data



Official sources



Budget sheets



QUESTIONNAIRE STRUCTURE

Questionnaire for Municipalities, Association of Municipalities and Mountain Communities



QUESTIONNAIRE STRUCTURE

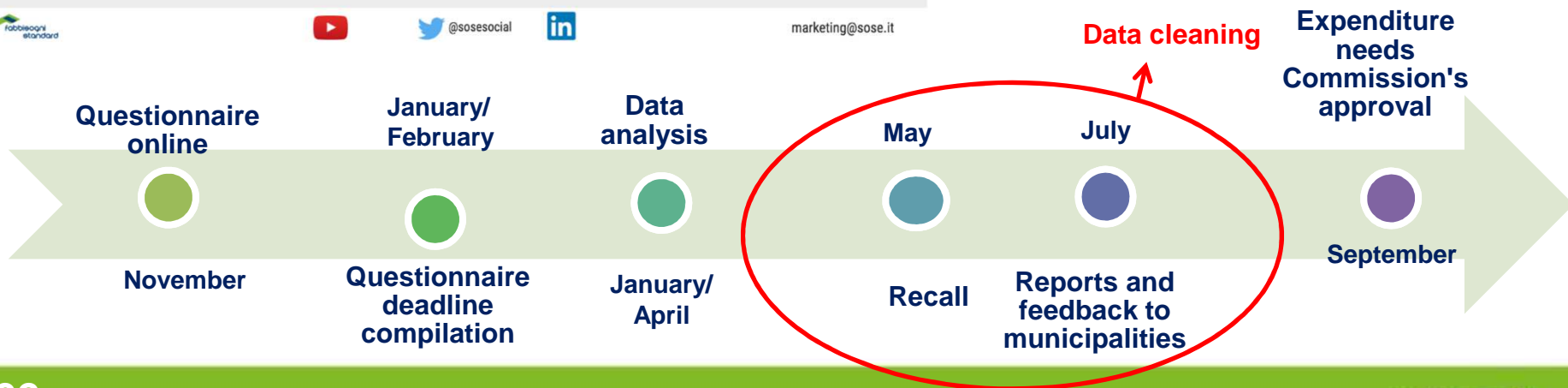
Questionnaire for Municipalities, Association of Municipalities and Mountain Communities



@sosesocial



marketing@sose.it



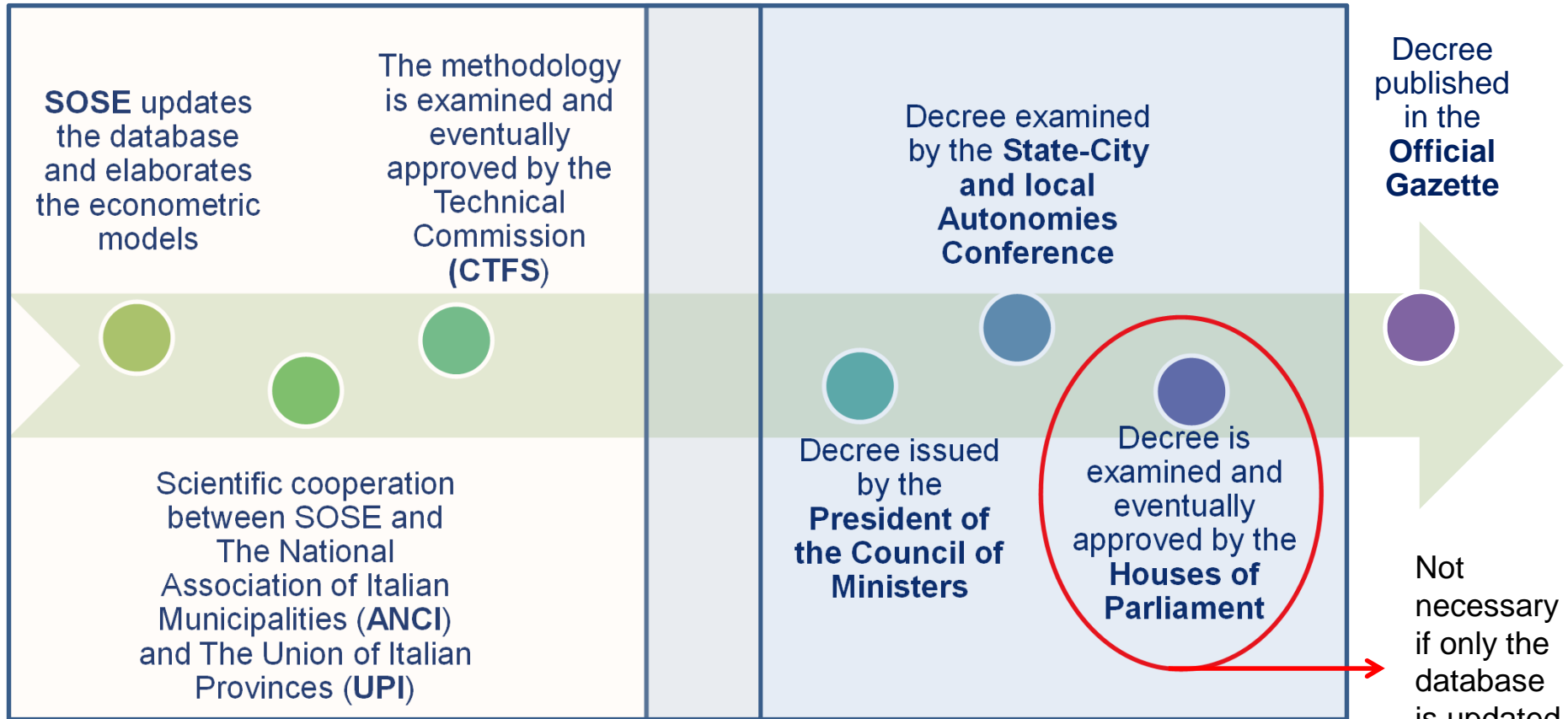
THE INSTITUTIONAL PROCESS FOR STANDARD EXPENDITURE NEEDS

Technical steps

usually from April to September

Political steps

usually from September to December



Technical and political steps tend to overlap



- On line publication of municipal data on expenditures and performances in the provision of public services
- Open access to all citizens
- Open data
- More information for local administrations
- Stimulate higher electoral accountability and citizens' participation

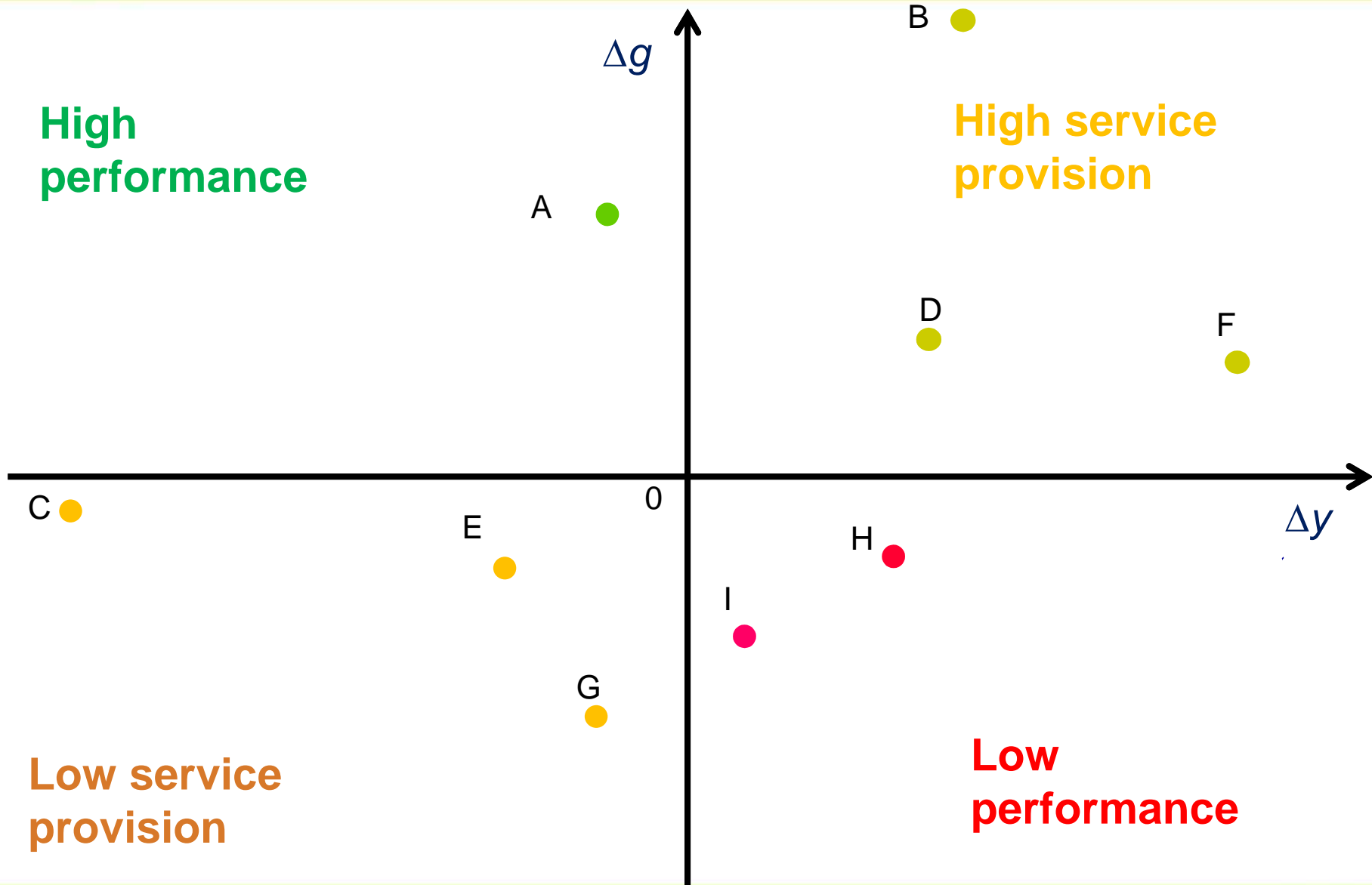
For each main function

	Historic (a)	Standard (b)	Difference (a-b)
Expenditure	y	\hat{y}	Δy
Level of Service	g	\hat{g}	Δg

Performance evaluation

- *Output score* = Δg
- *Expenditure score* = $-\Delta y$
- *QLS score* = $(\Delta g - \Delta y)$

PERFORMANCE EVALUATION: GRAPHICAL ANALYSIS



Historical revenue approach

FC is measured by the actual amount of own source tax revenue recorded in the budget sheet

- generates incentives for the local authorities to reduce fiscal effort.

Macroeconomic indicators methodology

FC is approximated by some measure of local wealth (per capita GNP or GDP or personal income etc.)

- Measures based on GNP or personal income could underestimate FC in regions where significant taxable economic activities involve non-residents
- macro indicators may not be available at micro-level or may be subject to huge approximations

The representative tax system (RTS)

FC is based on the evaluation of tax revenues that different jurisdictions could collect by imposing taxes at the standard rate on the actual value of the tax bases

- overcomes most of the drawbacks of the other two methods

REPRESENTATIVE EXPENDITURE SYSTEM (RTS)

$$\text{Standard tax rate} \times \text{Actual tax base} = \text{Standard tax revenue}$$

Although RTS does not disincentive the tax effort but presents some drawbacks:

- Local governments do not have the right incentive to implement policies against the tax evasion
- RTS cannot be properly used when the tax legislation does not establish a standard rate
- A further major problem of RTS is that, in some cases, the tax base may not exist or it may be impossible to evaluate it properly
- Possible solutions:
 - Evaluation potential tax base
 - Evaluation of the tax gap
 - **Regression-based Fiscal Capacity Approach**

REGRESSION BASED FISCAL CAPACITY APPROACH (RFCA)

$$T = \beta_1 R + \beta_2 S + \beta_3 N + \beta_4 A + \varepsilon$$

Actual tax revenue (T)	Fees and tariffs (nurseries, cemetery services, local transport, issuance of certificates, etc.)
Proxy of the tax base (R)	Local income, real estate values
Fiscal effort (S)	Average effective tax rates
Non residents (N)	Number of tourists and commuters
Control variables (A)	Socio-demographic variables that captures local preferences
Stochastic component (ε)	Extraordinary events

$$\text{Fiscal capacity} = \beta_1 R + \beta_2 S(\text{avg}) + \beta_3 N$$