

Government Output and Productivity Measurement

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Why measure government productivity?

✚ Measures of government productivity are important because:

✓ They affect our assessment of the growth rate of the economy

National Accounts perspective:

Italy: 1% growth in government output → 0.2% GDP growth

✓ They throw light on the quality of the public finances

Manager/General public perspective – accountability:

(a) how are resources allocated?

(b) what is achieved by public spending?

Two targets, two instruments? - (1/2)

✚ Atkinson Review:

- ✓ Performance measures for management
 - *Precise, transparent, simple and not subject to manipulation*
 - *Not necessarily stable over time*
 - *Selective coverage allowed*

- ✓ National accounts measures
 - *Transparency/simplicity not an issue*
 - *Stability over time and comprehensiveness are essential*

✚ **BUT....**

Two targets, two instruments? - (2/2)

- # Simple measures can be misleading
- # Are we sure managers do not need to monitor the evolution of performance over time?
- # Selective analysis is useful, but isn't it overall performance that matters in the end?
- # If management improves performance, don't we want this to be reflected in National Accounts?

What is needed to assess Government output and productivity?

✚ Definition and measurement of output

- ✓ *Definition is especially difficult for collective services (e.g. defence, public administration)...*
- ✓ *... not straightforward in individual services either*
- ✓ *What is the value of public services?*

✚ Measures of inputs

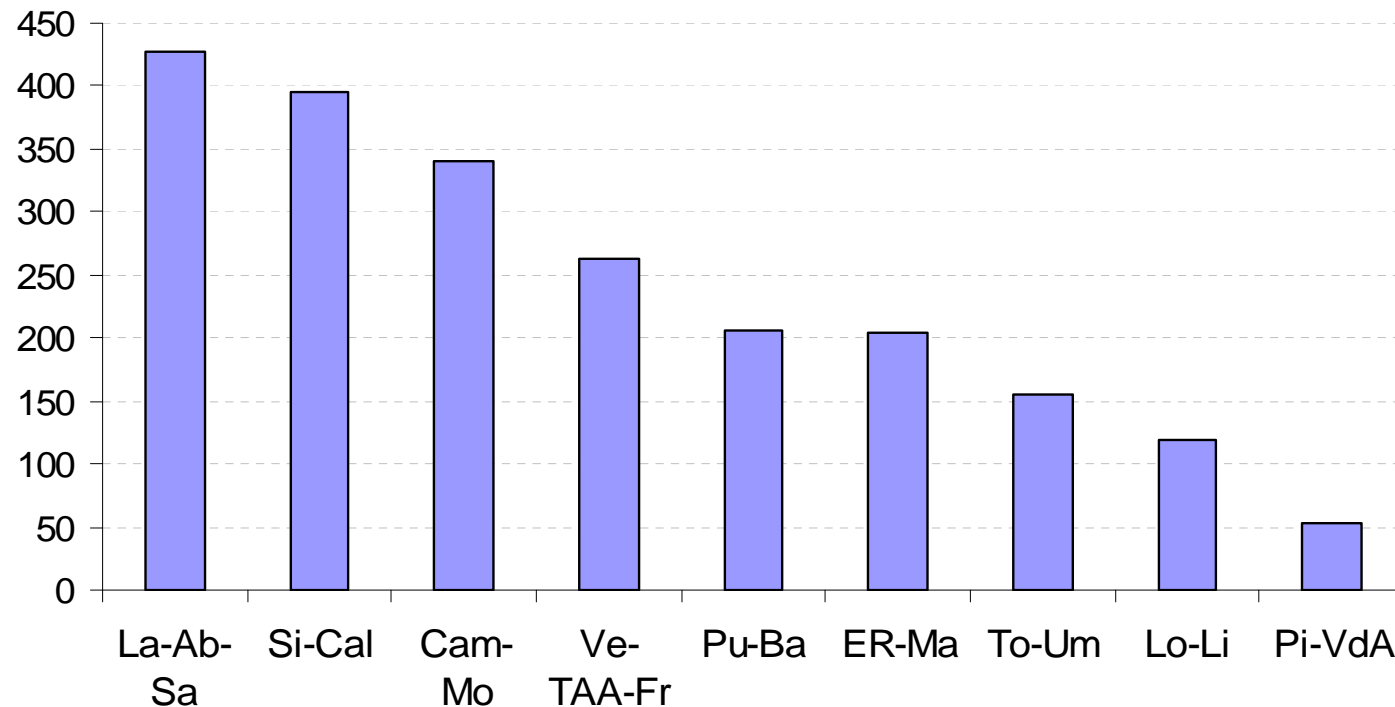
- ✓ *Level of disaggregation?*
- ✓ *Capital?*

✚ A discussion by means of examples...

Allocation of resources (1/4)

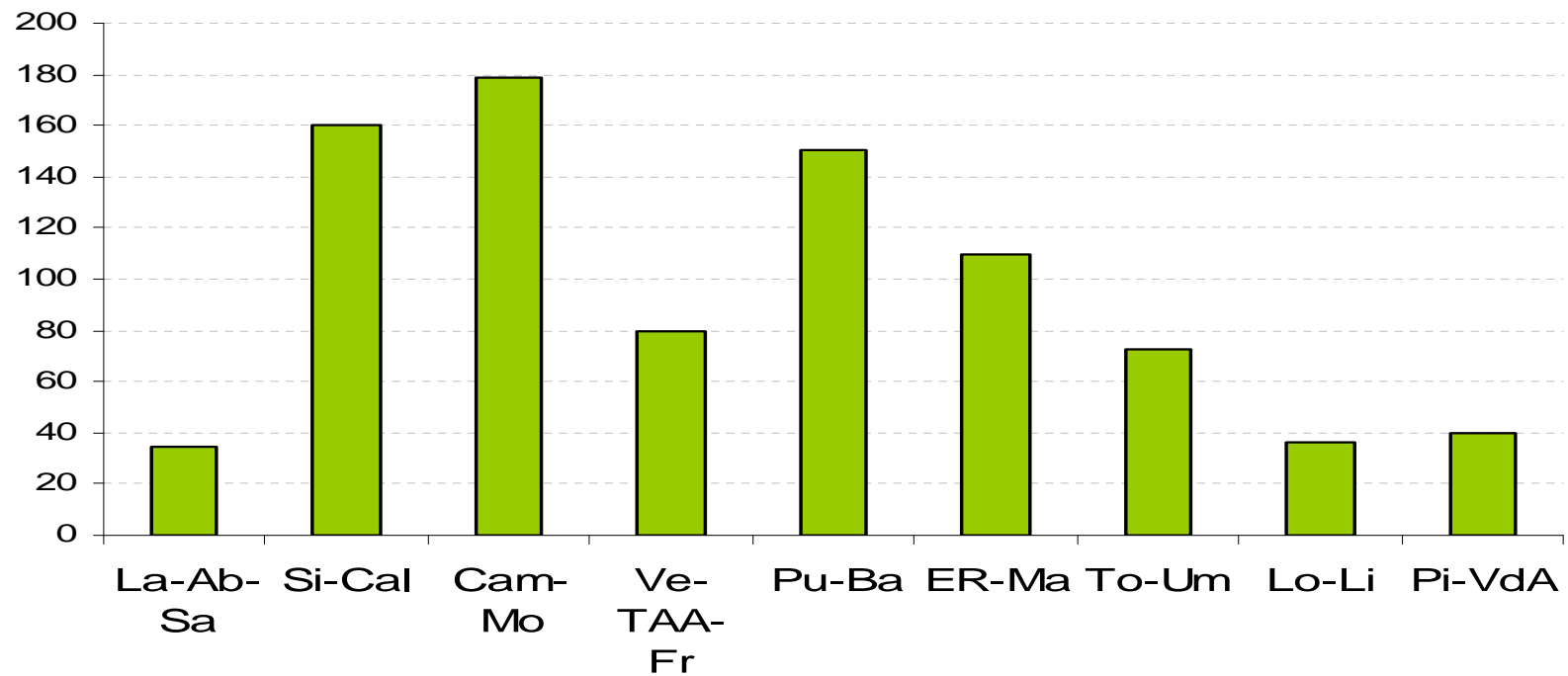
- ✚ If we do not define output, we cannot say much about the allocation of resources

Ministry of Infrastructures – Regional Offices: total staff
(CTSP08)



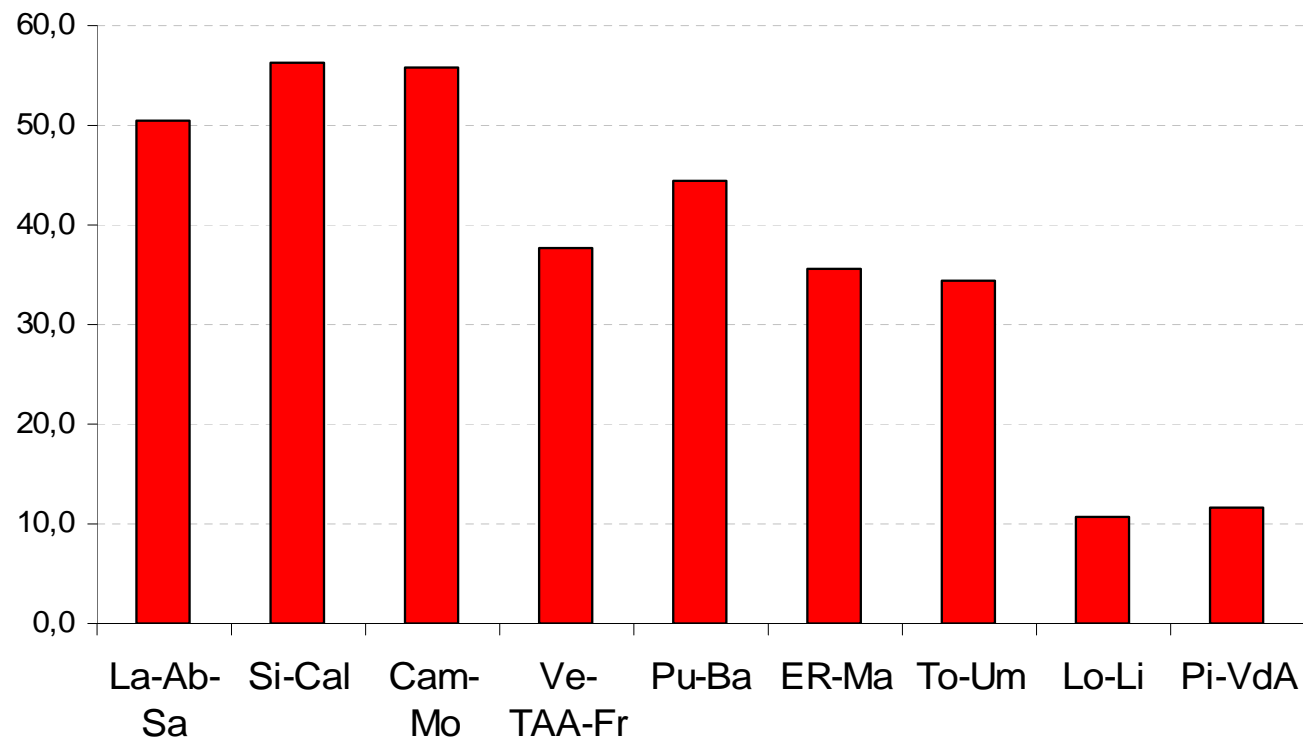
Allocation of resources (2/4)

**Ministry of Infrastructures – Regional Offices:
Staff per billion of assets (CTSP08)**



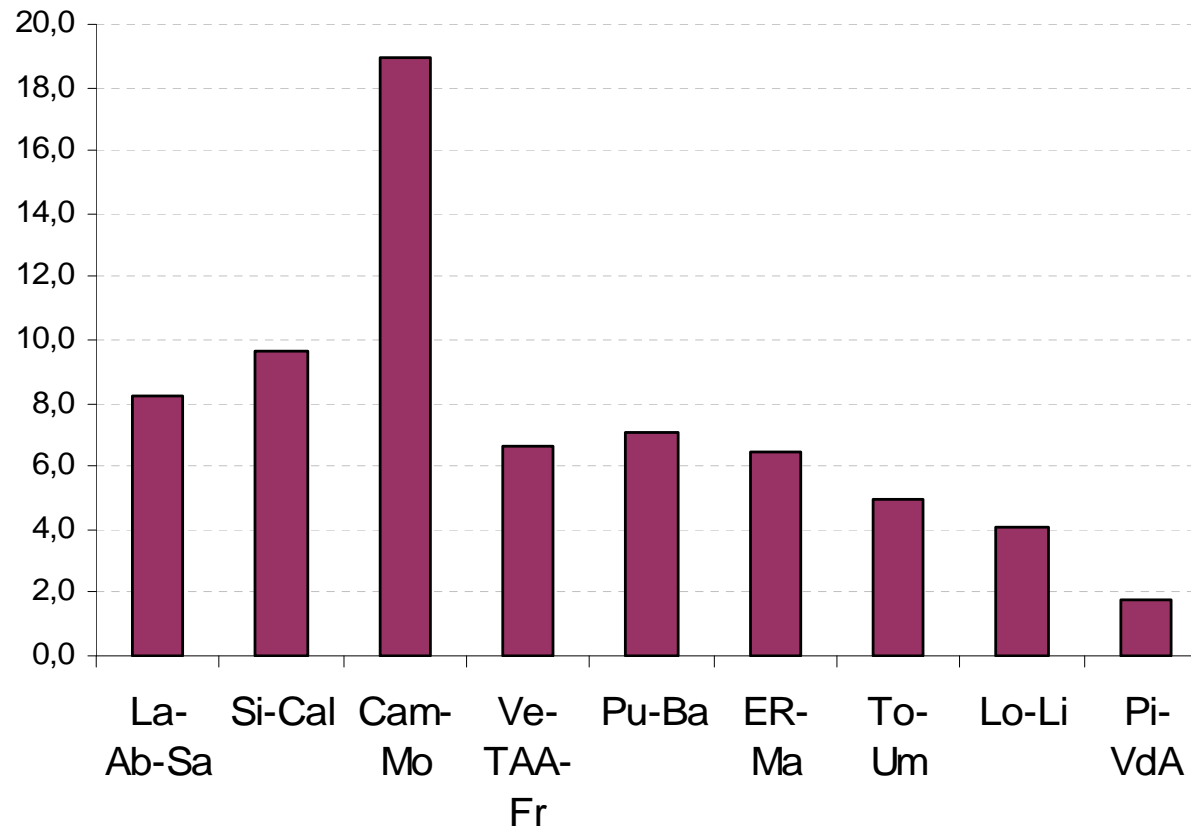
Allocation of resources (3/4)

Ministry of Infrastructures – Regional Offices Staff per million of inhabitants (*CTSP08*)



Allocation of resources (4/4)

Ministry of Infrastructures – Regional Offices Staff per thousand Km² (CTSP08)

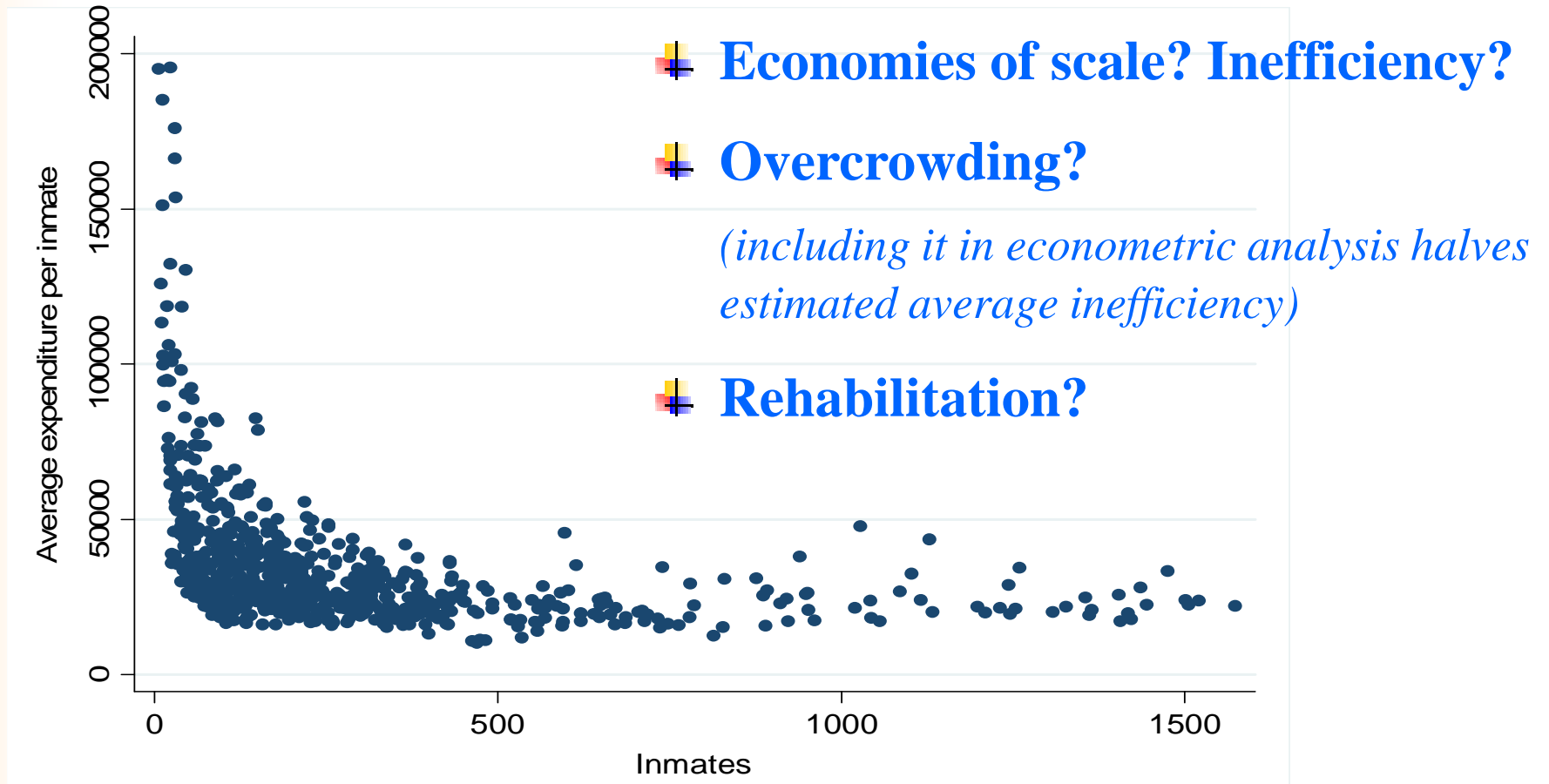


What is the output?

Ministry of Justice – Prisons:

Expenditure per inmate vs. number of inmates

Balassone et al. (2008)



What is the value of public production?

An inverse correlation between resources and outcomes

(Montanaro, QEF08)

Teachers per pupils



Proficiency levels (primary and lower secondary schools (INValSI)



Darker colors
=
higher values

Inputs: disaggregation

Ministry of Justice – Prisons: Cost function

Balassone et al. (2008)

| | | |
|--|----------------|----------------|
| $\ln \hat{t}^i$ | 0.83*** | (31.81) |
| $\ln \hat{a}^w$ | 1.01*** | (18.11) |
| $\ln \hat{o}^c$ | -0.79*** | (-26.65) |
| constant | -0.88*** | (-5.82) |
| Average inefficiency | | 2.5 |
| Observations | | 432 |
| Number of Groups | | 156 |
| Log Likelihood | | 406.6 |
| sigma u | | 0.248 |
| sigma v | | 0.0413 |
| Chisq | | 1399 |
| $\hat{x} = x/\text{average}(x)$ | | |
| z statistics in parentheses *** p<0.001, ** p<0.01, * p<0.05 | | |

Inputs: Capital services

Another inverse correlation

(Francese & Romanelli, BI09)

Expenditure per resident (adjusted for the composition of population)



Darker colors
=
higher values

Patients' mobility



A difficult task (1/2)

- # Standardized output definitions across comparable units (*Ministry of infrastructure - Regional offices*)
- # Integrated databases allowing joint examination of all relevant characteristics of production (*Prisons*)
- # Measures of outcomes to control for value (*Schools*)
- # Disaggregated information (*Prisons*)
- # Information on capital services (*Health care*)

A difficult task (2/2)

- ✚ The evidence [...] is that despite efforts going back to the 1980s, the productivity measures being produced need to be interpreted cautiously.

Boyle (2006)

- ✚ By the very nature of its products [...] no ‘natural’ performance indicators are available for public administration as such.

Kuhry et al. (2006)

If it's so difficult, should we give up?

“good finance cannot be attained without intelligent care on the part of the citizens ... due equilibrium between income and outlay will only be found where responsibility is enforced by the public opinion of an active and enlightened community”

Charles Bastable (1927)

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