
# Firm ownership and financial performance: an empirical assessment in the energy and rail sectors

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**DG ECFIN**

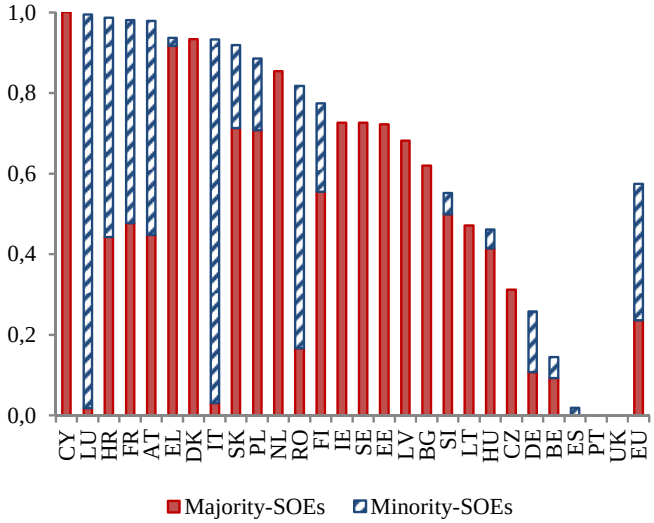
**Unit B4 – Economic Analysis of energy, climate change, transport and cohesion policies**

# Importance of SOEs in energy and railway

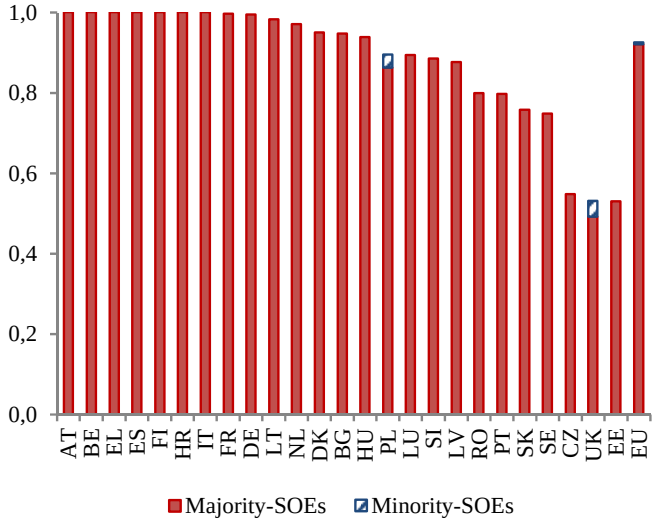
European Commission

## Breakdown by ownership structure of total turnover, 2008-2013

*(a) Energy*




*(b) Railways*




*Source:Commission services based on ORBIS database*

**SOEs play a particularly important role in network industries.** The OECD estimated that in value terms SOEs active in the network sectors represent about half of the total value of SOEs in OECD countries and 60% of jobs. The energy and transport sectors alone count for about 40% of the total value of SOEs Valuation based on market values for listed entities and book equity value for unlisted entities.

# Econometric estimation – data and methodology

| Sectors | Regulated | Non-regulated | Conglomerates |
|---|---|---|---|
| **Energy** | • Electricity Transmission and Distribution;<br>• Gas Transmission and Distribution. | • Electricity generation, wholesale, retail<br>• Gas wholesale, retail | Energy companies active in more than one subsector. |
| **Railway** | Railway infrastructure managers | Railway passenger and freight | Railway companies active in more than one subsector. |
| **Sample size and period** | 946 companies,<br>28 Member States<br>Time period 2008-2013 | | |

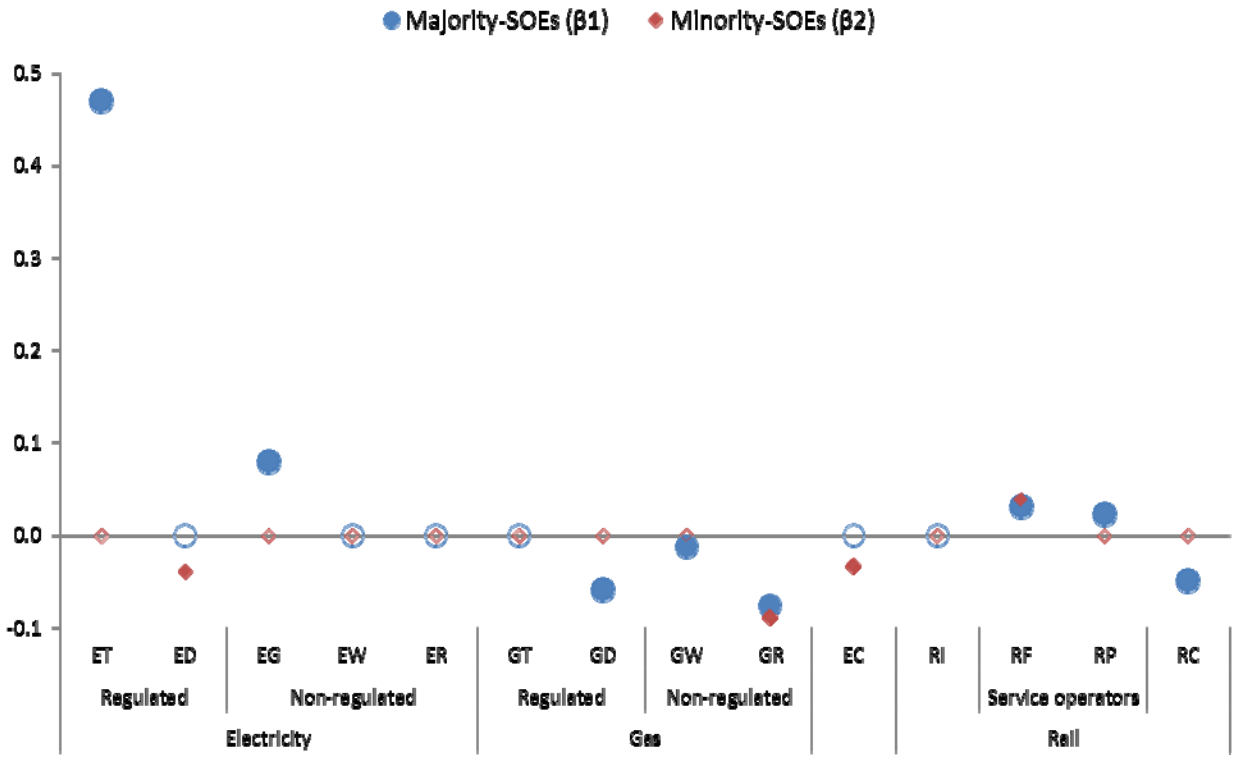
| Ownership structures | | |
|---|---|---|
| Majority-Owned<br>>50% Gov Share | Minority-Owned<br>20%>Gov Share<50% | Private<br><20% Gov Share |

**Specification**

$$Y_{it} = \alpha + \beta_1 \text{SOE\_MAJOR}_{it} + \beta_2 \text{SOE\_MINOR}_{it} + \beta_3 \text{SIZE}_{it} + \gamma_1 \text{MS}_c + \gamma_2 \text{YEAR}_t + \varepsilon_{it}$$

# Estimation results – 1/5

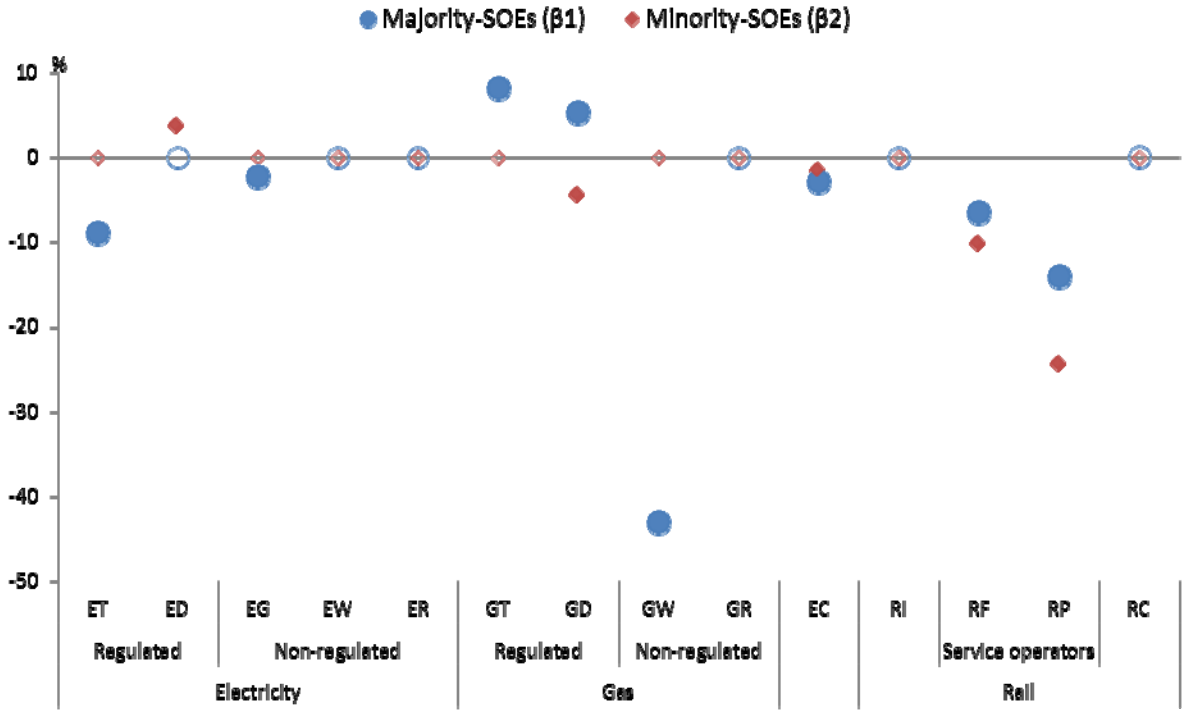
| Cost-efficiency | Operating Expenses ratio | $\frac{OPEX}{Turnover}$ |
|---|---|---|




Source: Commission services based on ORBIS database

# Estimation results – 2/5

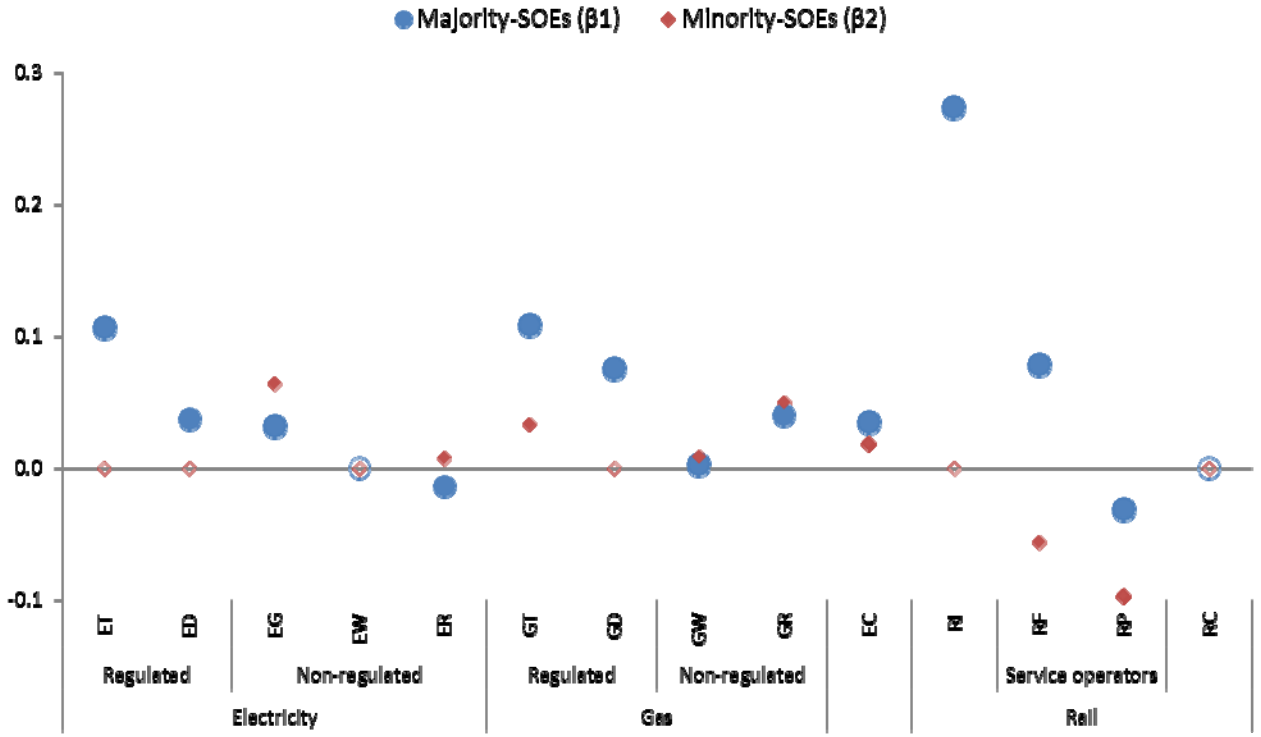
| Profitability | Return on Capital Employed (ROCE) | $\frac{EBIT}{Total\ assets - Current\ liabilities}$ |
|---|---|---|




Source: Commission services based on ORBIS database

# Estimation results – 3/5

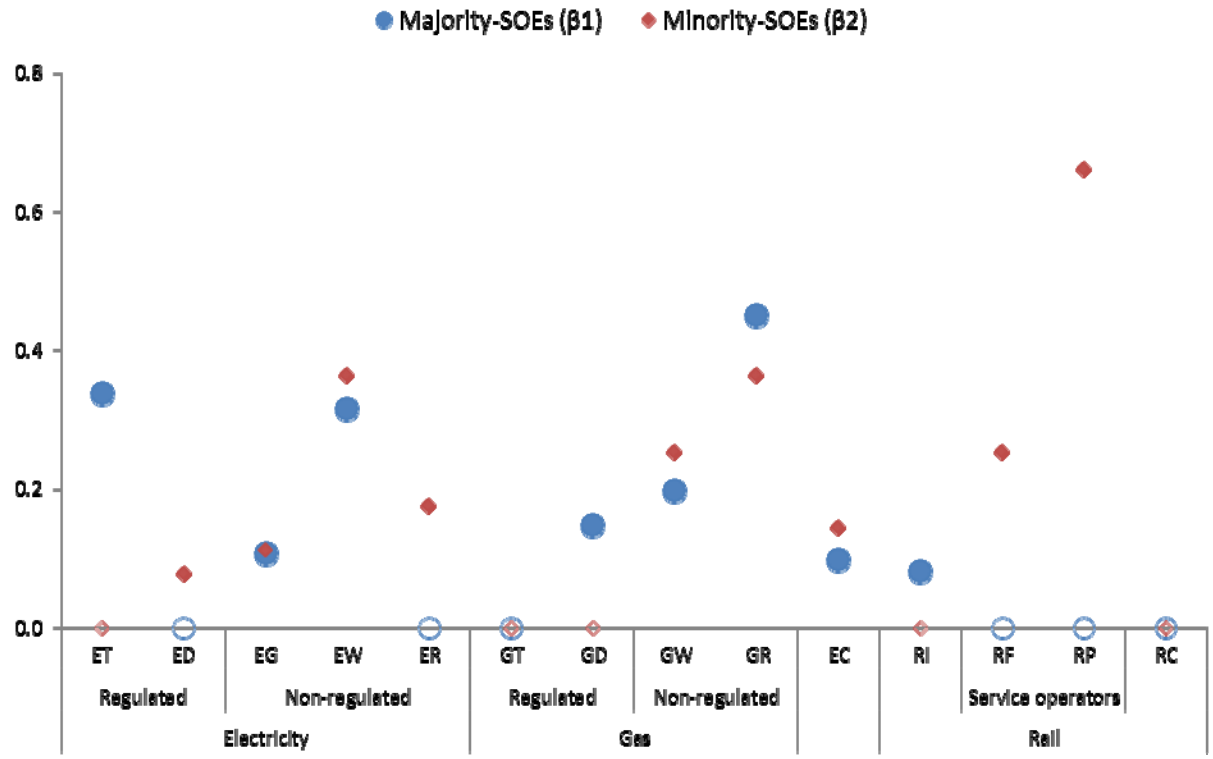
| Labour intensity | Staff costs as a share of operating expenses | $\frac{Staff\ costs}{OPEX}$ |
|---|---|---|




Source: Commission services based on ORBIS database

# Estimation results – 4/5

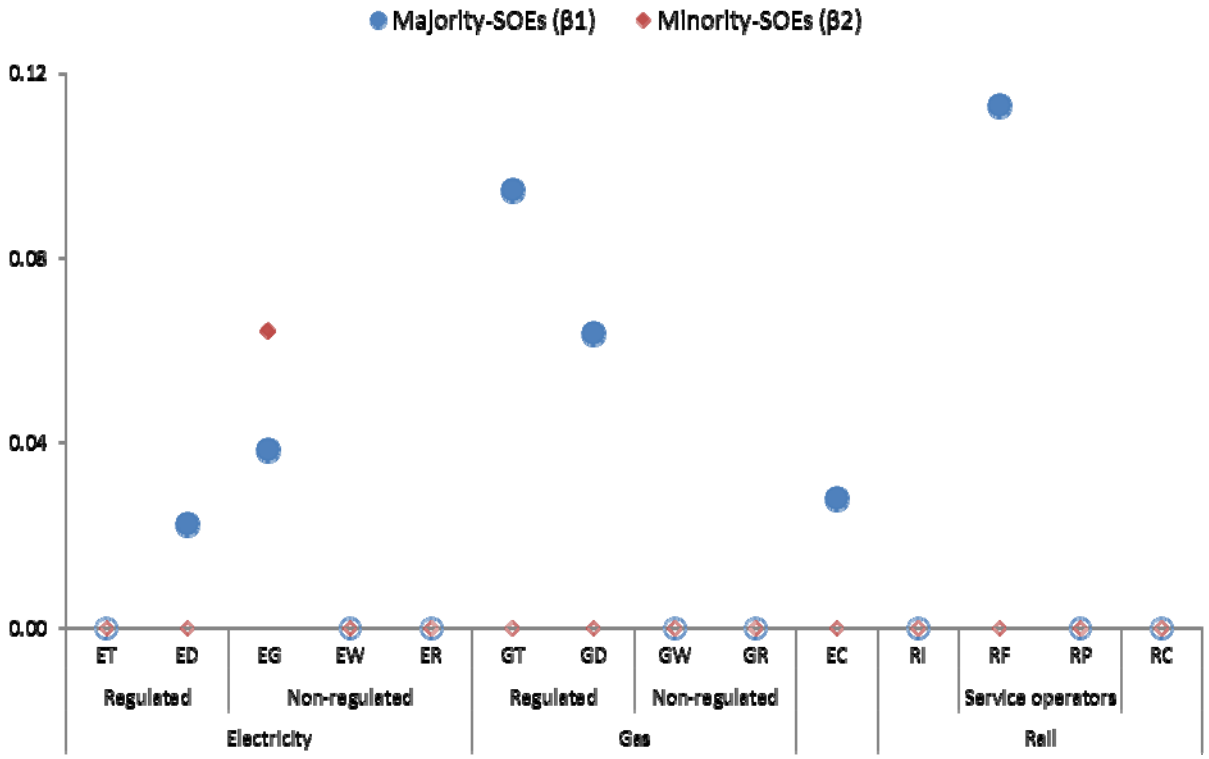
| Leverage | Equity to Assets ratio | $\frac{Equity}{Total\ assets}$ |
|---|---|---|




Source: Commission services based on ORBIS database

# Estimation results – 5/5

| Investments | Investment Rate | $\frac{Fixed\ Assets_t - Fixed\ Assets_{t-1} + Depreciation}{Fixed\ Assets_{t-1}}$ |
|---|---|---|




Source: Commission services based on ORBIS database

# Conclusions

**No one-to-one relation between ownership structure of firms and their financial results…**

- *Mixed picture in terms of **profitability and efficiency;***
- *SOEs tend to have higher **staff costs** than private firms;*
- *SOEs' **investment rates** are either equal or higher than those of private companies;*
- *SOEs' **leverage ratios** tend to be either lower or not different from those of private companies.*

# Performance of state owned enterprises in New Member States

**Erik Canton and Peter Pontuch**

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# Data and methodology


- ORBIS firm data; All business sectors excl. finance
  - BG, CZ, HR, HU, PL, RO, SI, SK over 2004-2013
  - Minority SOEs included, i.e. >20% ownership (robust to using only majority SOEs)
  - 974,000 firm-year observations, of which 25,700 SOEs.
  - Ownership data improved using an iterative algorithm

- Empirical strategy
  1. Assess performance variables of SOEs against private firms

$$Performance_{it} = \alpha + \delta\, SOE_i + \beta\, controls_{it} + \gamma_c + \lambda_t + \epsilon_{it}$$

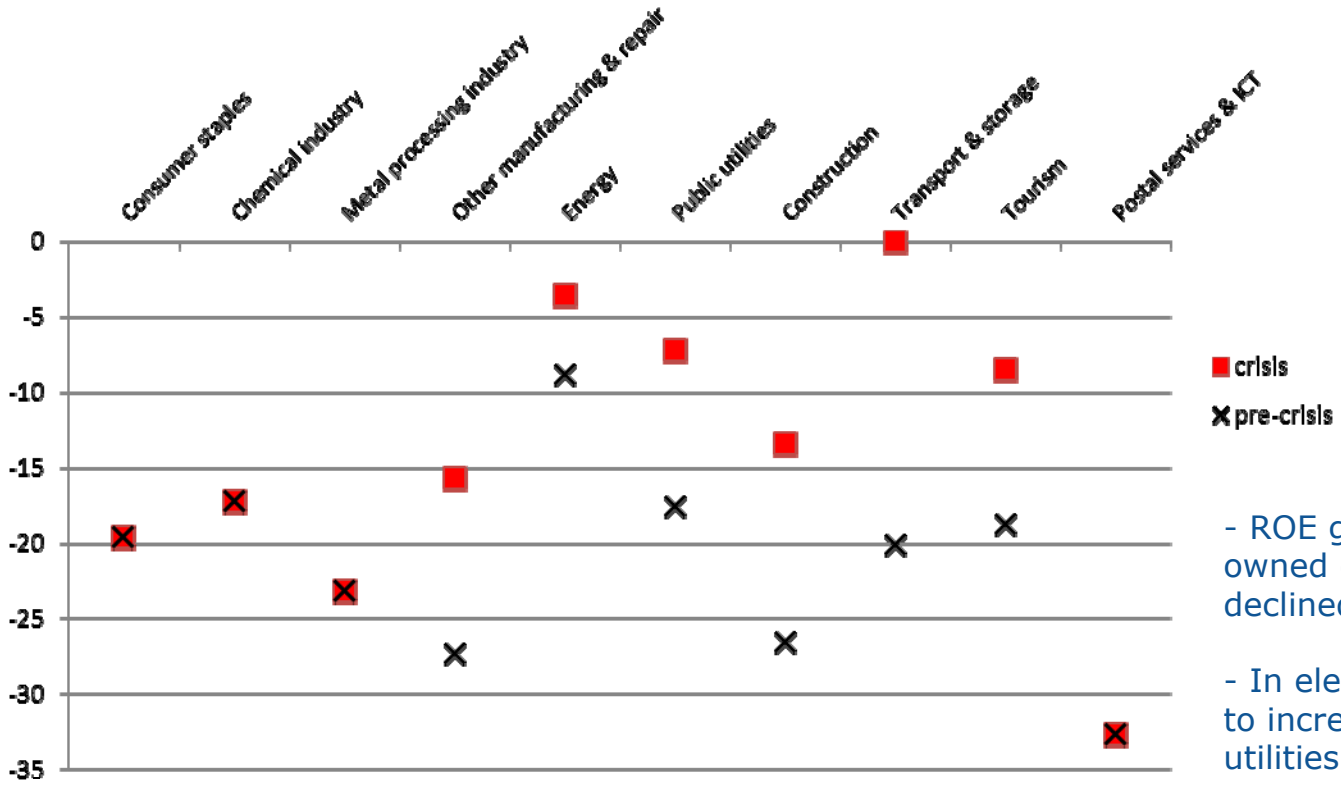
Variable of interest: SOE dummy
Controls: size, age, domestic and foreign listing, foreign ownership

  2. Assess the effect of the share of SOEs on sectors' allocative efficiency

AE definition: following Olley and Pakes (1996)

# Results I

| Profitability | Return on equity (pp. difference SOEs vs. private firms) | $\frac{Earnings\ before\ tax}{Equity}$ |
|---|---|---|




- ROE generally lower in state owned enterprises, but gap declined during the crisis

- In election years, the gap seems to increase in the energy and utilities sectors.

# Results II

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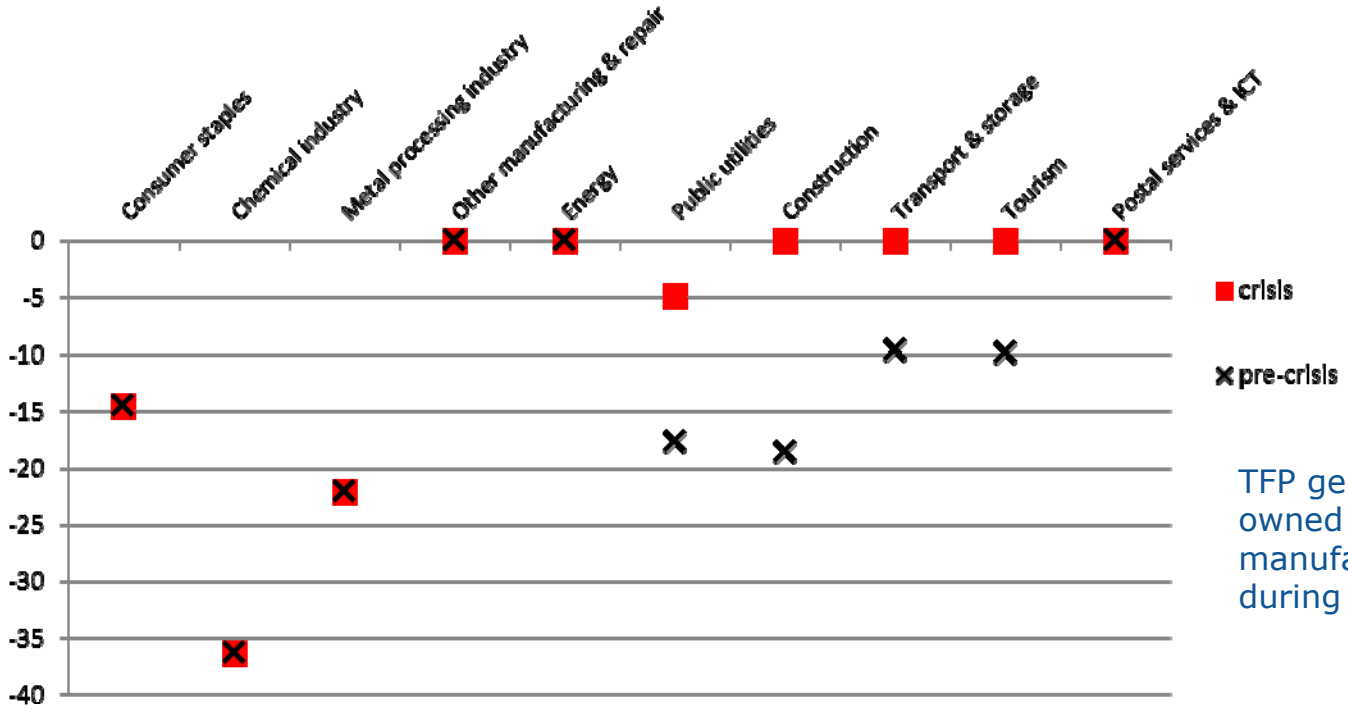
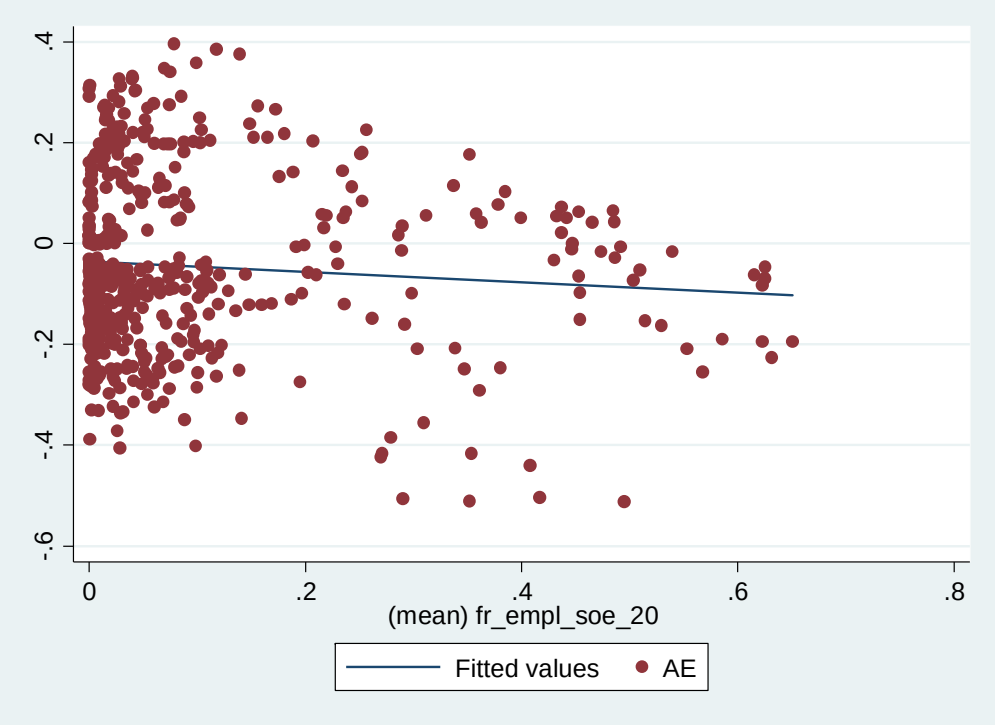
| Productivity | Total Factor Productivity (% difference SOEs vs. private firms) | Levinsohn-Petrin estimates |
|---|---|---|




TFP generally lower in state owned enterprises, especially in manufacturing, but gap declined during the crisis

# Results III

## Allocative efficiency and fraction of workers in state owned firms




Sectoral AE is lower when SOEs employ a larger fraction of workers in the sector.

Regression analysis shows that an increase in fraction of workers in SOEs by 10perc. points reduces AE by about 15%.

# Conclusions

*Profitability and productivity of SOEs tend to be lower than that of private firms, especially in manufacturing*

*Performance gap became smaller during the crisis, mainly because a relatively stronger worsening in private sector*

*Sectoral allocative efficiency is lower when a larger fraction of employees is working in state owned enterprises*

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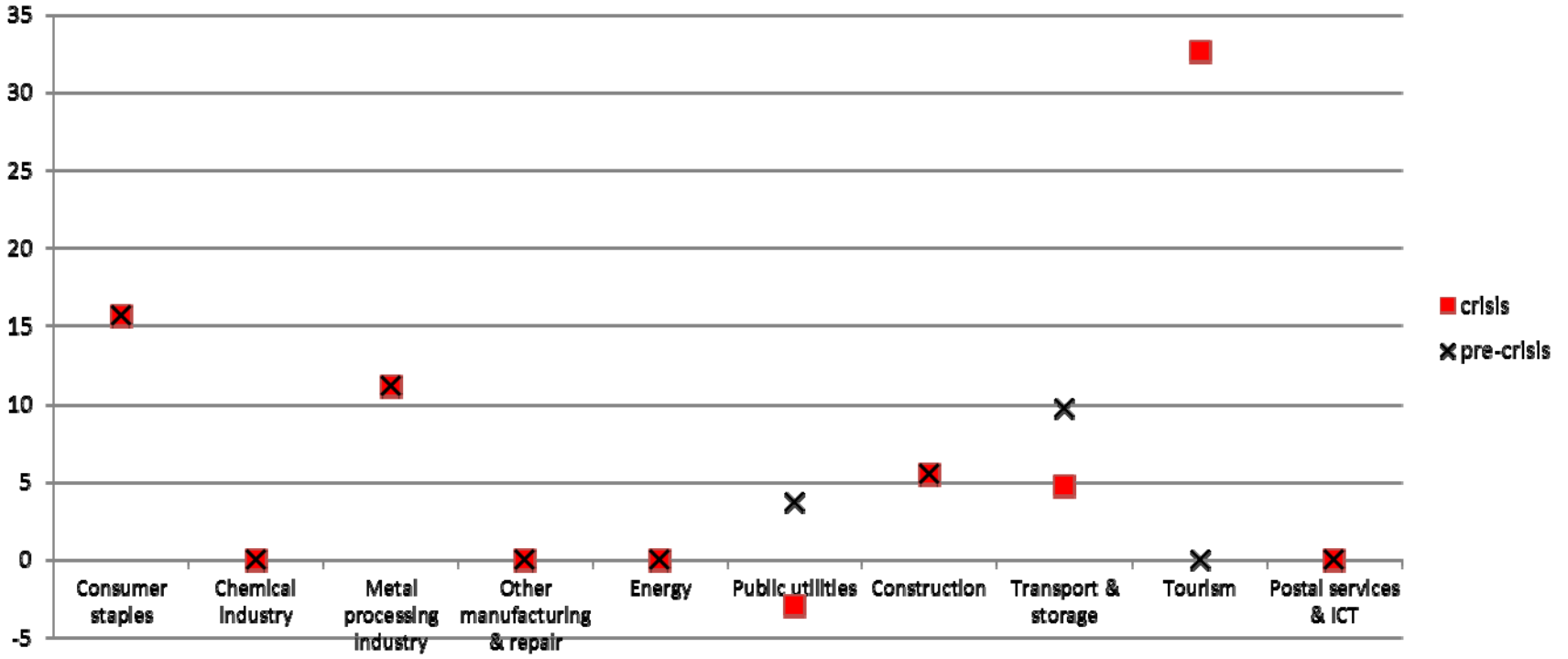
**Indebtedness**

**Debt-to-EBITDA (pp. difference SOEs vs. private firms)**

$$\frac{EBITDA}{Loans\ and\ LT\ debt}$$



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**Productivity**

## Labour productivity (% difference SOEs vs. private firms)

$$\frac{\textit{Value added}}{\textit{Number of employees}}$$