EU analysis on Regulation, Ownership and Institutions

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Roadmap

- Plan of the talk:

  - ☐ Profile of ownership structure in Europe: the role of (mixed) *State Owned Enterprises* (SOEs)

  - ☐ Firms' financial performance (capital structure and market value) vs. ownership

  - ☐ Dynamic Efficiency

  - ☐ (Weak and strong) political institutions

Ownership and Regulation

- Potential trade-off between (static and dynamic) efficiency and control
- In the past, European Commission recognized that

  "… concerns are reported that *the structures in place do not ensure that regulatory decisions are not influenced by State ownership considerations*…"

- Potential influence of ownership on regulatory decisions and outcomes.

- My talk will be based on evidences from recent empirical studies from EU

Ownership in Europe

- ## Privatization in Europe
  - A huge ownership transfer until mid-nineties
  - *Reluctant* privatization henceforth

- ## In EU utilities private ownership is the exception rather than the rule…
  - Bortolotti & Faccio (2009): at the end of 2000 the governments were controlling more than 60% of privatized firms (through full ownership or golden shares)

Evidence: Ownership in EU15

(source: Cambini, Rondi and Spiegel, 2012; in Harrington et al. *Recent Advances in the Analysis of Competition Policy and Regulation,* Edward Elgar)

Country	Energy			Telecommunications	
	Date of establishing an IRA	Electricity Ownership (end 2010)	Gas Ownership (end 2010)	Date of establishing an IRA	Ownership (end 2010)
Austria	2000	State (51%)	Partially private (State 31%)	1997	Partially private (State 25%)
Belgium	1999	Partially private (State 49%)	Partially private (State 31%)	1991	State (> 50%)
Denmark	1999	--	--	2002	Private
Finland	1995	State (54%)	--	1987	State (>50%)
France	2000	State (85%)	Partially private (State 37,5%)	1996	Partially private (State 32%)
Germany	2006*	Private (State 2.5%)	Private (State 2.5%)	1996*	Partially private (State 28%)
Greece	2000	State (51%)	--	1992	Partially private (State 10%)
Ireland	1999	--	--	1997	Private
Italy	1995	Partially private (State 33%)	Partially private (State 20%)	1997	Private
Luxemburg	2000	State (100%)	State (100%)	1997	State (100%)
Netherlands	1998	--	--	1997	Private
Portugal	1995	Partially private (State 26%)	--	2001	Private (State 6%)
Spain	1998	Private	Private	1996	Private
Sweden	1998	Private	Private	1992	State (> 50%)
UK	1989	Private	Private	1984	Private

… And in new EU12 Member states

(source: Cambini, Rondi and Spiegel, 2012; in Harrington et al. *Recent Advances in the Analysis of Competition Policy and Regulation,* Edward Elgar)

Country		Energy		Telecommunications	
		Electricity	Gas		
Country	Date of establishing an IRA	Ownership (end 2010)	Ownership (end 2010)	Date of establishing an IRA	Ownership (end 2010)
Bulgaria	1999	State (100%)	State (100%)	2006	Private
Czech Rep.	2001	State (67%)	Private	2005	Private
Cyprus	2003	State (100%)	State (100%)	2002	State (100%)
Estonia	2008*	Partially private	Partially private	2008*	Private
Hungary	1994	Private	Private	2003	Private
Latvia	2001**	State	Private	2001**	State (51%)
Lithuania	1997**	State (96.5%)	Partially private (State 30%)	2004	Private
Malta	2001	State	State	2001	Private
Poland	1997	State (100%)	Private	2006	Private
Romania	2000	Private	Private	2006	Partially private (State 46%)
Slovenia	2001	State	Partially private (State 31%)	2001	Partially private (State 49%)
Slovakia Rep.	2001**	State (51%)	State (51%)	2004	Partially private (State 49%)

Top regulated companies in EU 15

(source: Bortolotti, Cambini and Rondi, 2013)

Table – The top 20 European regulated companies by market capitalization

Company Name	Country	Date of Establishment of an IRA	IPO Year	Market Capitalization (US$bn, end 2005)	Government Control Rights (end 2005)
Telecommunications					
Telefonica de Espana SA	Spain	1996	1987	71.88	0.000
Deutsche Telekom AG	Germany	1996	1996	69.74	0.575
France Telecom	France	1996	1997	64.58	0.324
Telecom Italia SpA	Italy	1997	1997	56.04	0.000
British Telecommunications PLC	U.K.	1984	1991	33.02	0.000
Telia Sonera AB	Sweden	1992	2000	24.10	0.590
Koninklijke KPN NV	Netherlands	1997	1994	21.32	0.078
TeleDanmark AS	Denmark	2002	1994	11.64	0.000
Portugal Telecom SA	Portugal	2001	1995	11.27	0.127
Telekom Austria AG	Austria	1997	2000	10.83	0.302

Top regulated companies in EU 15

(source: Bortolotti, Cambini and Rondi, 2013)

Table – The top 20 European regulated companies by market capitalization

| Company Name	Country	Date of Establishment of an IRA	IPO Year	Market Capitalization (US$bn, end 2005)	Government Control Rights (end 2005)
			Energy		
Electricité de France	France	2000	2005	68.88	0.873
E.ON	Germany	2006	1987	68.14	0.048
Enel	Italy	1995	1999	48.29	0.322
RWE	Germany	2006	1922	41.47	0.310
Suez	France	2000	1987	39.10	0.197
Vivendi	France	2000	2000	36.00	0.124
British Gas PLC	U.K.	1989	1986	35.03	0.000
Gaz de France	France	2000	2005	28.80	0.801
National Grid Transo PLC	U.K.	1989	1995	28.67	0.000
Iberdola	Spain	1998	1992	24.60	0.020

Evidence on Capital Structure

Bortolotti, Cambini, Rondi and Spiegel, 2011
Journal of Economics & Management Strategy

Financial performace and Ownership

- **Evidence**: Ten years after the beginning of privatization and liberalization in network industries in Europe, regulated utilities have substantially increased their financial leverage

- In the U.K., DTI and HM Treasury (2004) have expressed a concern about the "*dash for debt*" "*flight of equity*" within the U.K. utilities sector from the mid-late 1990's

- They argue that high leverage "*could imply greater risks of financial distress, transferring risk to consumers and taxpayers and threatening the future financeability of investment requirements*"

The "Dash for debt"

Leverage in selected EU Utilities

EU average — Telefonica de Espana — National Grid Group PLC — EDF
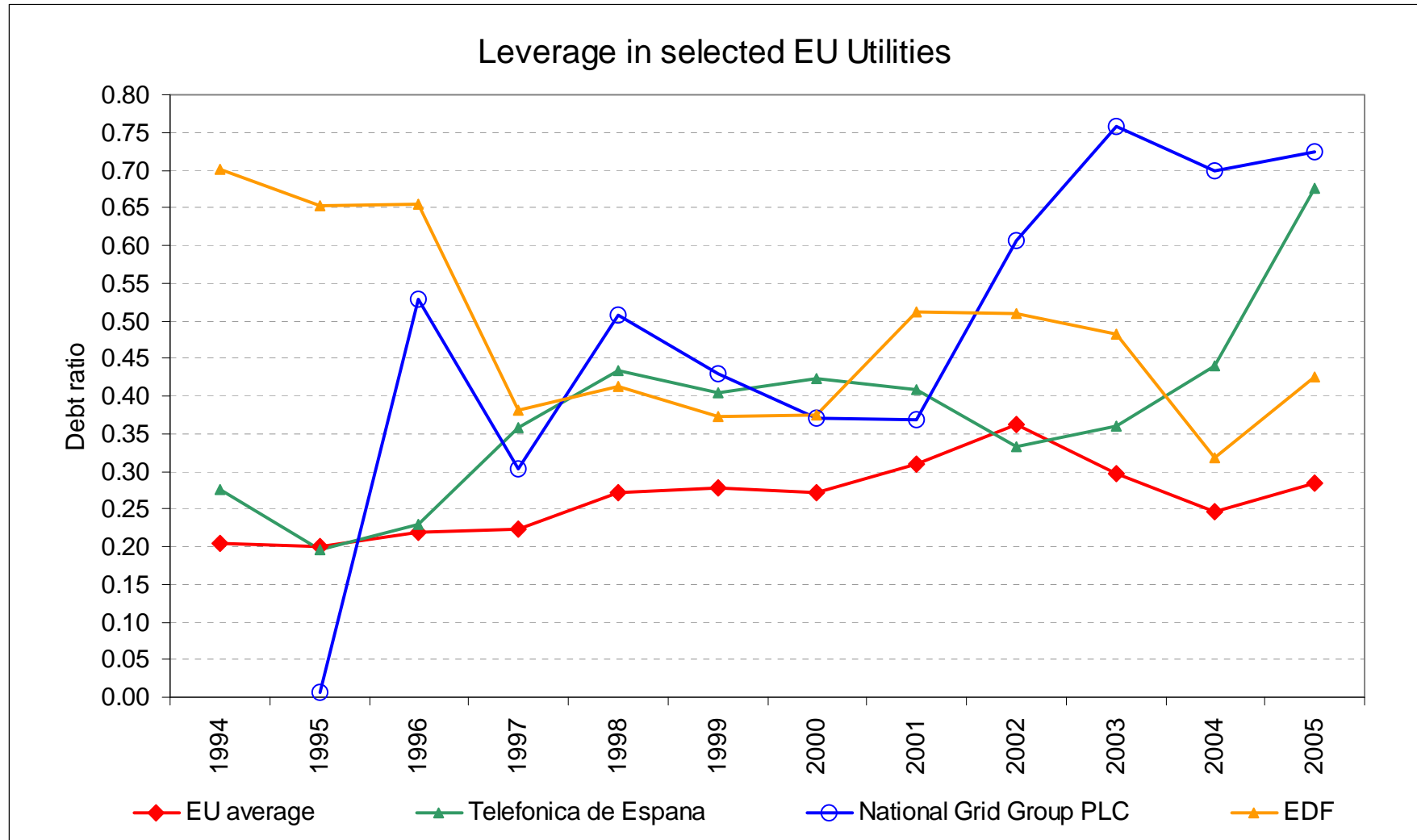
A Strategic Explanation of Leverage

- Problem of <u>lack of commitment</u>: regulator may reduce regulated prices after sunk investment. May firms "use" capital structure to influence the regulators' decisions? … and may regulators "use" capital structure to *tie their own hands* and discipline their own opportunism?

- A welfare maximizing regulator has the incentive to set a high regulated price so as to reduce the probability that the firm will become financially distressed (Spiegel and Spulber, 1994). Hence, firm's leverage mitigates regulatory opportunism

- What about SOEs?
  - Government ownership lowers the risk of financial distress, but it can also work as an alternative <u>*commitment*</u> device
    - Politicians support *high tariffs* to cash in dividends, but also *high investment ("broad service")* to bring in votes
    - Politicians would not act opportunistically against the firms they own via regulation

  ⇒ Thus state-controlled firms do not need to issue debt to hedge regulatory risk

Empirical evidence on Financial Leverage

(source: Bortolotti, Cambini, Rondi and Spiegel, 2011
Journal of Economics & Management Strategy)

- We constructed an unbalanced panel of 92 publicly traded utilities and transportation infrastructure operators during 1994-2005 (927 firm-year observations) in 14 EU member states:
  - 44 firms in electricity and gas distribution
  - 13 water supply companies
  - 15 telecoms (mainly vertically integrated operators)
  - 8 freight roads concessionaires
  - 12 transportation infrastructure operators

- The sample covers 85-90% of publicly traded utilities in EU and 12 of the top 30 for Mkt. capitalization in EU

- For every company we construct the *Government Ultimate Control Rights* measured using the "weakest link concept" (LLSV, 1999)
  - 67 firms in our sample have been privatized by 2005. Of these firms 24 have been privatized during 1994-2005 period. 25 firms in our sample are still state-controlled in 2005.
  - Privatization is still incomplete: the state's UCR in the firms in our sample are 37% on av.

Results on Firm's Financial Performance

(source: Bortolotti, Cambini, Rondi and Spiegel, 2011
Journal of Economics & Management Strategy)

- Evidence that utilities increase their leverage following the introduction of independent regulation, provided they are *privately controlled*

- Significant <u>long-run effects</u> are found:

  - ☐ the introduction of an IRA is associated with a long-run increase in leverage by 7.2% for the full sample.

  - ☐ for privately-controlled firms the long-run effect is 9.2% for all privately-controlled firms and 11.9% for firms that were privately controlled throughout our sample period

Results on Firm's Financial Performance

(source: Bortolotti, Cambini, Rondi and Spiegel, 2011
Journal of Economics & Management Strategy)

- Leverage Granger-causes Regulated Prices:

$$\uparrow Leverage \Rightarrow \uparrow regulated\ prices$$

- Leverage does not Granger-cause regulated prices for the sub-sample of <u>State-controlled firms.</u>

- Our findings are broadly consistent with the idea that regulated firms use leverage strategically to mitigate regulatory opportunism.

- But ownership does matter: the theory holds only for *privately-controlled firms.*

Reluctant Regulation

Bortolotti, Cambini and Rondi, 2013
Journal of Comparative Economics

Ownership and Firms' Market Value in EU
(source: Bortolotti, Cambini and Rondi, 2013)

- From *The Economist, Jan. 2012:* "How can the state regulate the firms it also runs"?

- Theory: Governments are "bad owners": they typically impose political objectives that destroy firm value (Shleifer & Vishny 1994). Governments are also "bad regulators" as their interference leads to time-inconsistent regulatory decisions (Stigler, 1971)

- Recent empirical evidence shows:

  - *Partial*, not full, privatization boosts economic and financial performance (Gupta, 2005)

  - Fully privatized firms are typically *less* valuable than state-controlled firms (Bortolotti and Faccio, 2009) and require a premium to compensate political risk (Beltratti et a. 2007)

- Why *partial* ownership (mainly in EU)? Residual state ownership may reassure investors that politicians will not behave so as to reduce the value of partially privatized company (Perotti, 1995)

Our paper: Regulators, Firms and Politicians

- **We investigate if state ownership affects firm value when Independent Regulatory Agencies are in place**

- IRAs are set up to prevent politicians from extracting **political rents** from state-controlled utilities – e.g. "*white elephant*" investment and employment programs

- …This works, but only if regulators were de-facto independent from political influence … as it happens, some IRAs are more independent than others

- Politicians can interfere with **legally** (but not **genuinely**) independent regulators to obtain favorable decisions and extract **economic** rents
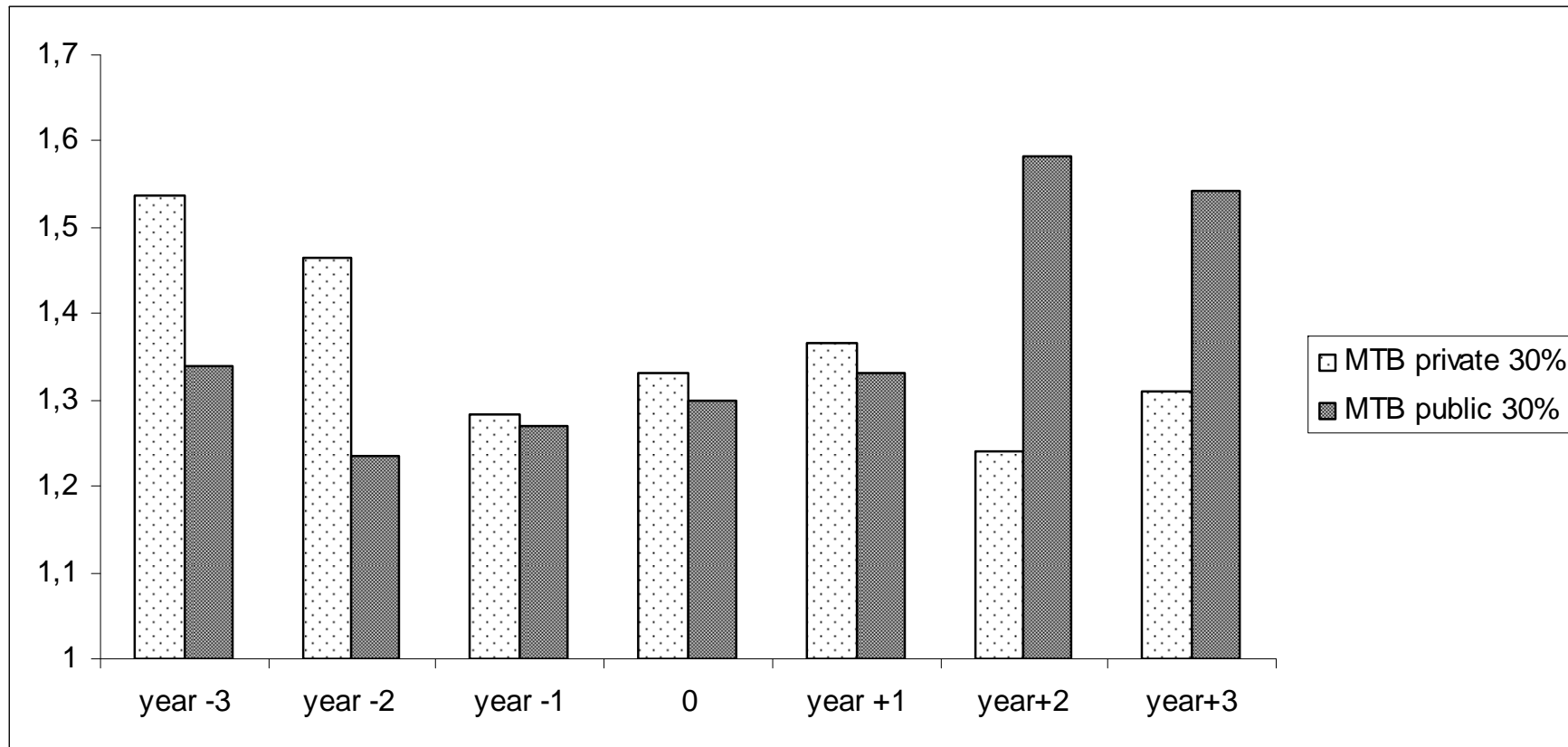
Politicians and Institutions

⇒ Such opaque governmental "protection" is positively valued by investors in the equity market

- **What makes political interference in regulatory matters possible?…What is the transmission mechanism?**

- Levy and Spiller (1994) show that regulation is credible and independent where **political institutions constrain the executive's discretion**

⇒ Political institutions influence the latitude governments have to decide about **privatization** and **delegation** of powers to IRAs imposed by the European Union

⇒ **We label reluctant regulation the institutional setting where regulatory powers are delegated to a formally independent regulator, but subject de facto to political interference**

Evidence on Market Value in EU

(source: Bortolotti, Cambini and Rondi, 2013)

Market to Book Ratios @ IRA Inception by Ownership status

Identification and Instruments

What defines a weak (or strong) institutional environment?

$\Rightarrow$ State ownership and regulatory independence are endogenous
 $\Rightarrow$**Political Institutions $\rightarrow$GovUCR*IRA$\rightarrow$MTB**

- We use Political Institutions as instruments

   - *Checks & Balances*: number of decision-makers whose agreement is necessary before policies can be changed or revoked (WB-DBPI)

   - *Electoral Proportionality*: Proportional electoral systems lead to party proliferation and fragmented governments, making policy changes less likely, and regulatory commitments more credible (Gallagher, 1991) (Alesina and Rosenthal, 1996)

- **Our goal**: Identify the channel through which weak political institutions allow governments to affect firms and investors (and consumers)

Data and Variables

- **57 publicly traded energy and telecom** operators
  - ☐ 14 EU member states, 1994 - 2005 :
  - ☐ 12 of the top 30 for Mkt. capitalization in EU
- **IRAs** in place in all countries, mostly set up in 1997-2000
- **Market-to-book***: (TA – BE + ME) / TA (Worldscope)*
- **Formal Regulatory Independence:** dummy equal to 1 when the IRA is in place (Gilardi, 2002)
- **State ownership: Government Ultimate Control Rights** continuous variable, measured using the "weakest link concept"
- **Firm, industry and country controls**: Size, Profitability, Leverage, OECD Liberalization Index, Invest_Protection, GDPgrowth, Debt/GDP
- **Instruments for Ownership & IRA**: Checks & Balances, Electoral Dis-proportionality*, Political Orientation*, *Election date, Government Stability, Social Capital* (Distrust Index, World Value Survey)

Firm Value, Ownership and Political Institutions

Dependent variable: MTB ratio	Checks and Balances		Proportionality Index	
	(1)	(2)	(3) Low proportionality	(4) High proportionality
	Low C&B	High C&B		
Leverage$_{t-1}$	-0.171	-0.169	-0.322**	0.122
	(0.141)	(0.243)	(0.139)	(0.301)
EBIT-to-Total Assets$_{t-1}$	0.237*	-1.209	0.183	-0.709
	(0.131)	(0.943)	(0.140)	(0.450)
Log of real total assets$_{t-1}$	-0.229***	-0.090	-0.239**	-0.416***
	(0.085)	(0.165)	(0.097)	(0.162)
Investor Protection$_t$	0.033	-0.171	-0.003	0.103
	(0.048)	(0.199)	(0.057)	(0.222)
GDP Growth$_t$	-0.026	0.001	0.015	0.041
	(0.023)	(0.069)	(0.054)	(0.074)
Debt/GDP$_t$	-1.240**	0.726	-0.202	0.164
	(0.500)	(1.576)	(0.828)	(0.760)
OECD Index of Liberalization$_t$	0.101*	-0.205***	0.059	-0.130**
	(0.056)	(0.068)	(0.055)	(0.064)
Government UCR$_{t-1}$ (α_1)	-0.522**	-1.074*	-0.436	-0.526
	(0.223)	(0.558)	(0.296)	(0.339)
IRA$_{t-1}$ (α_2)	-0.122	0.870**	-0..019	0.005
	(0.161)	(0.426)	(0.110)	(0.234)
Government UCR$_{t-1}$ * IRA (α_3)	0.803***	-1.123**	0.875***	0.009
	(0.237)	(0.564)	(0.345)	(0.288)
Firm dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
P-value test on $\alpha_1 + \alpha_3 = 0$	0.125	0.038	0.036	0.335
P-value test on $\alpha_2 + \alpha_3 = 0$	0.000	0.264	0.006	0.938
R squared	0.375	0.552	0.393	0.477
N. Firms [N. Obs.]	50 [353]	22 [93]	38 [271]	26 [177]

Firm Value and Political Institutions
2SLS

| Dependent variable:	MTB$_t$ (1)	MTB$_t$ (2)	MTB$_t$ (3)	MTB$_t$ (4)
Leverage$_{t-1}$	-0.114 (0.156)	-0.251* (0.066)	-0.271 (0.249)	-0.325 (0.235)
EBIT-to-Total Assets$_{t-1}$	0.205* (0.108)	0.189** (0.095)	0.175* (0.104)	0.174* (0.103)
Log of real total assets$_{t-1}$	-0.150** (0.067)	-0.227*** (0.066)	-0.239* (0.130)	-0.269** (0.112)
Investor Protection$_t$	-0.054 (0.050)	-0.046 (0.046)	-0.014 (0.077)	-0.013 (0.096)
GDP Growth$_t$	0.084** (0.040)	0.107*** (0.041)	0.114* (0.060)	0.126* (0.068)
Debt/GDP$_t$	-0.470 (0.414)	-0.224 (0.458)	0.104 (0.951)	-0.341 (0.578)
OECD Index of Liberalization$_t$	0.068 (0.045)	0.043 (0.048)	0.045 (0.058)	0.024 (0.062)
Government UCR$_t$ (α_1)	-1.202 (1.315)	-3.386** (1.651)	-4.151 (4.190)	-4.380 (3.187)
IRA$_t$ (α_2)	-0.824** (0.338)	-1.304*** (0.507)	-1.562 (1.027)	-1.370** (0.592)
Government UCR$_t$ * IRA (α_3)	3.133*** (0.986)	3.496*** (1.096)	3.799*** (1.358)	3.388*** (1.099)
Checks & Balances$_{t-1}$	- -	- -	-0.135 (0.175)	- -
Proportionality Index$_{t-1}$	- -	- -	- -	-0.037 (0.091)
Hansen J (all instruments) (*p value*)	0.639	0.857	0.799	0.806
Diff-in-Sargan C test: C&B Index / Prop. Index (*p value*)	0.447	0.852	-	-
F Test (*p value*)	5.79 (0.000)	5.67 (0.000)	5.25 (0.000)	4.97 (0.000)
N. Firms [N. Obs.]	57 [449]	57 [449]	57 [449]	57 [449]
P-value test on $\alpha_1 + \alpha_3 = 0$	0.053	0.910	-	-
P-value test on $\alpha_2 + \alpha_3 = 0$	0.006	0.005	-	-

Robustness Checks

- We test the over-identifying restrictions by including one by one the external political institutions instruments in *2nd* stage

- Robustness analysis:
  - ☐ We control for possible endogeneity of market liberalization
  - ☐ We account for social capital and culture – **(dis)trust** generates more demand for regulation (Aghion et al., 2012)

- Sensitivity analysis:
  - ☐ We include also transport and infrastructure operators and water supply firms as control sample with no IRA
  - ☐ We exclude UK companies (IRAs and privatizations earlier)
  - ☐ We use a threshold (dummy =1 at 30%) to define state control

Firm Value and Political Institutions: Main Findings and Conclusions

- The larger the Gov't ownership stake, the higher the market value of regulated firms, *when* the Gov't can discretionally interfere with formally but not really independent regulators

- Political interference with IRAs is likely to intensify:

  $\Rightarrow$ In presence of residual state ownership, as a soft regulatory stance will raise profits and dividends: the "*motive*"

  $\Rightarrow$ When the country's institutional endowment (e.g. weak checks and balances) allows them to do so: the "*opportunity*"

- Our results raise concerns about the effectiveness of privatization and regulatory policies in EU network industries when the institutional constraints to political interference in regulatory matters are weak
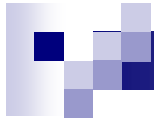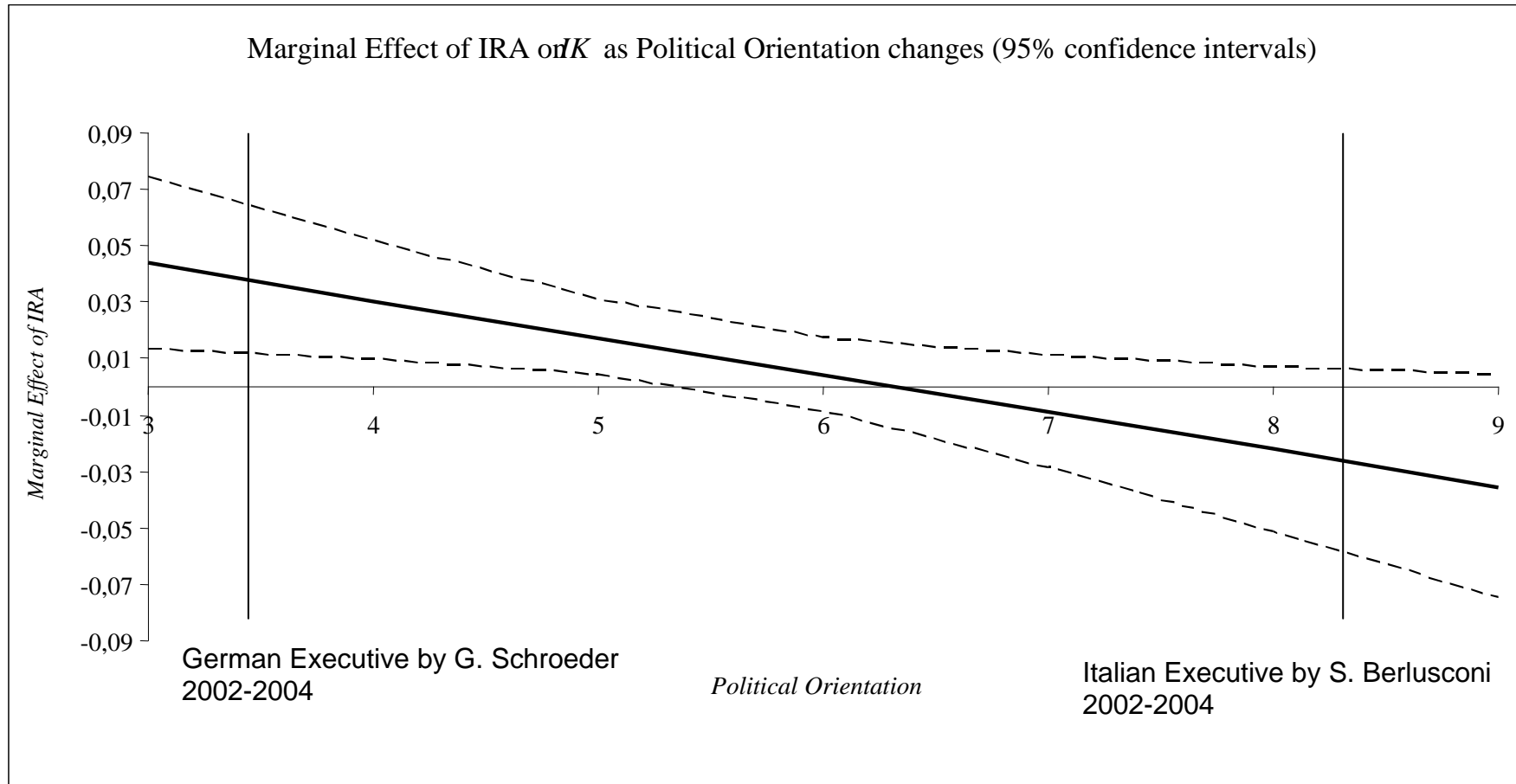
Ownership and Dynamic Efficiency

Ownership and Dynamic Efficiency in EU

■ <u>Relationship between Investment, IRA and Ownership in EU</u>

□ Cambini and Rondi (2012): using a panel of 80 publicly traded EU telecoms, energy, transportation, and water utilities over the 1994-2004 period, they find that utilities invest more when an IRA is in place.

□ Moreover, conditional on the existence of an IRA, firms invest more when the IRA has a larger degree of formal independence.

□ The IRA set up leads to a long-run increase of 2.5% in the investment rate (= capex to total asset).

□ However, ownership does <u>not</u> display any significant effect. Hence, no differences between investment behavior among state controlled and privately controlled firms. This result is confirmed in sub-sample of Telecoms and Energy companies.

□ Political interference on investments

Marginal Effect of IRA on Investment as Political Orientation of the Executive changes from Left to Right

$$\alpha_1 + \alpha_5 * \text{Pol Orientation}$$

Marginal Effect of IRA on *IK* as Political Orientation changes (95% confidence intervals)

German Executive by G. Schroeder 2002-2004

Political Orientation

Italian Executive by S. Berlusconi 2002-2004

Interaction of politics with the IRA regulatory functions hurts investment when the executive is decidedly rightwing

Ownership and Dynamic Efficiency in EU

- **<u>Relationship between Investment, Regulatory mechanisms and Ownership</u>**

- Cambini and Rondi (2010 *Journal of Regulatory Economics*):
  - Investigates the relationship between investment and regulatory regimes for a panel of European energy utilities from 1997 to 2007

    - Do investment decisions differ across different regulatory regimes: Incentive vs. Rate of Return (RoR) regulation?

    - Is investment sensitive to changes in the regulatory instruments: WACC and X Factors?

  - Collection of detailed data on regulatory instruments (incentive vs. RoR) in 5 EU countries (Spain, Germany, France, italy, UK)

  - We account for the impact of public vs. private ownership

Results on Dynamic Efficiency of EU Energy Utilities

(source: Cambini and Rondi, 2010 *JRE*)

- In the first decade after reforms, investment at EU energy utilities under *incentive regulation* was higher than at firms under Rate of Return regulation.

- *Private firms* appear to invest more, but not if we account for endogeneity of ownership. Again, no statistical significant difference between different ownership types.

- Our results suggest that regulation rather that ownership matters!

- Regulatory intervention – if effective - provides an environment which somewhat reduces the differences between private and public managers' internal incentives.

A tentative sum up

- The evidence presented so far does not allow us to provide an unambiguous answer about the role of privatization on the financial and operating performance of European SOEs.
- Productivity seems higher in private companies, but mostly due to regulatory intervention rather that ownership *per se*
- Privatization alone does have an impact, but this impact is much stronger when joint with effective regulatory interventions.
- <u>Problem</u>: state ownership gives scope for political interference !! Governments may use utilites to obtain extra rents (i.e. dividends) especially when public budget conditions are harsh.
- Preliminary eivdence (Bremberg, Cambini, Rondi and Gugler, 2013) does show that state-controlled firms have significantly higher target dividend payout ratios and show higher smoothing parameters than fully privatised, privately-controlled firms (in EU energy).

<u>Appendix</u>: Measuring UCR

- The state's UCR are measured using the "weakest link concept" as in La Porta et al. (*JF*, 1999) and Faccio and Lang (*JFE*, 2002).

- An example:

Government	→50%→	Firm A	→25%→	Firm B

- According to the weakest link approach, the gov't holds 25% of Firm B

Political Institutions :

Disproportionality Index
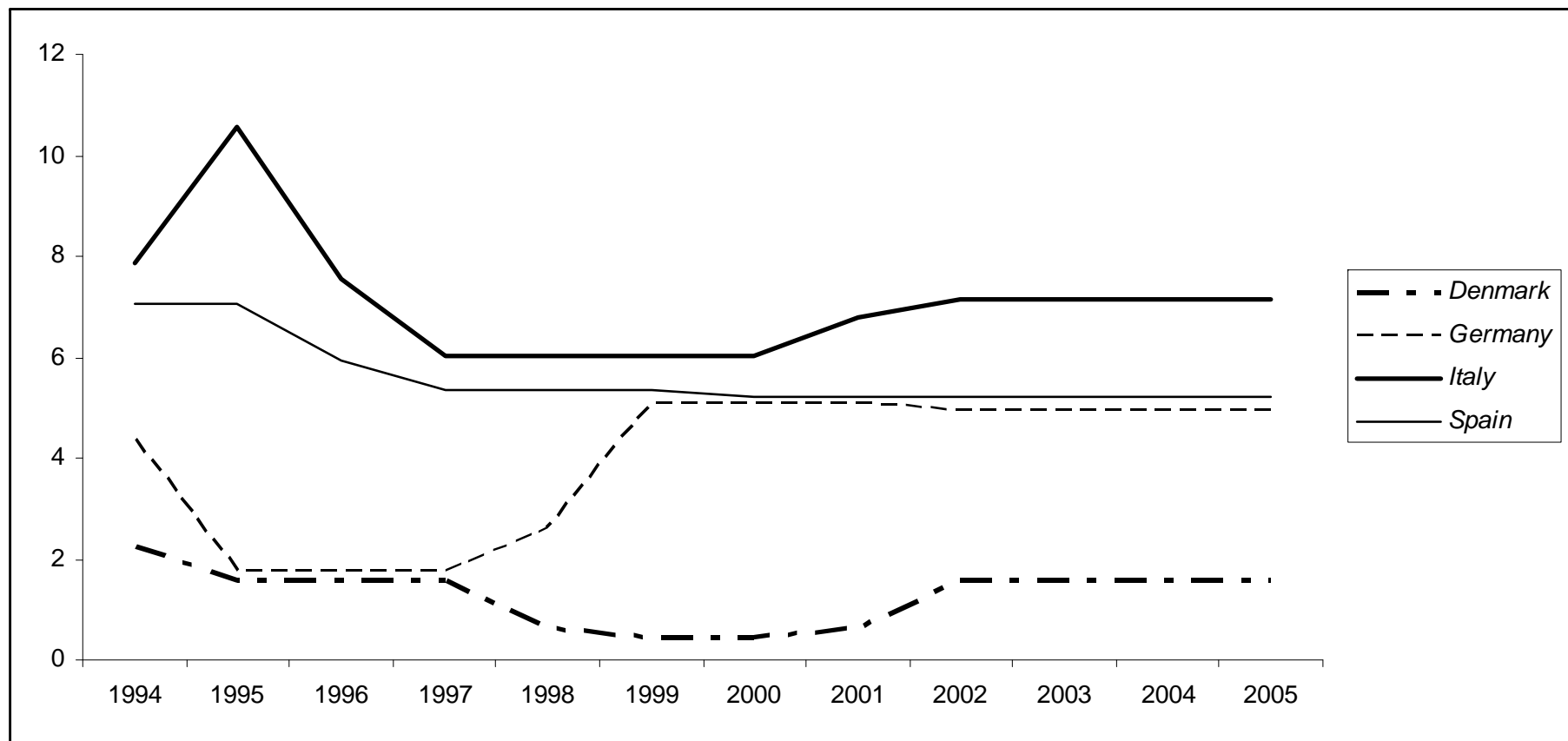
Political Institutions :
Checks & Balances (WB) and *Political Constraints* (Henisz, 2000)

Italy

Denmark

The Role of Political Institutions: First-Stage Regressions

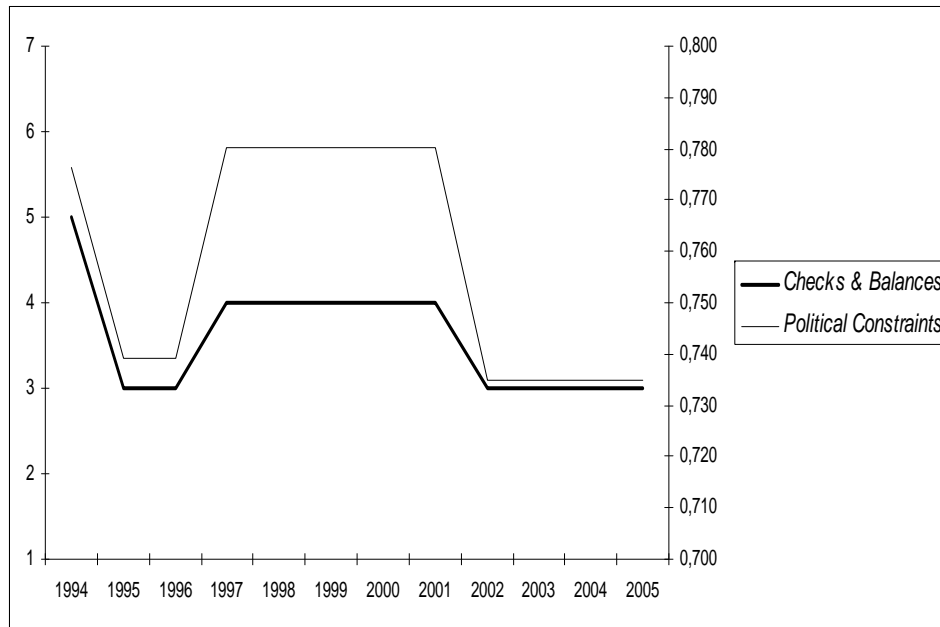| Dependent variable:	Government UCR$_t$ (1)	Government UCR$_t$ (2)	IRA$_t$ (3)	IRA$_t$ (4)	Government UCR$_t$* IRA (5)	Government UCR$_t$* IRA (6)
Political Orientation $_{t-1}$	-0.016**	-0.006	0.067***	0.061***	0.001	0.009
	(0.006)	(0.006)	(0.011)	(0.012)	(0.005)	(0.005)
Election Date $_{t-1}$	-0.021	-0.041	0.015	0.010	0.007	-0.009
	(0.034)	(0.030)	(0.099)	(0.101)	(0.034)	(0.033)
Government Stability $_{t-1}$	-0.018	-0.020	-0.003	0.029	-0.018	-0.019
	(0.018)	(0.017)	(0.038)	(0.036)	(0.018)	(0.018)
Checks & Balances $_{t-1}$	-0.039**	-	-0.050	-	-0.033**	-
	(0.016)	-	(0.031)	-	(0.015)	-
Proportionality Index $_{t-1}$	-	-0.034***	-	0.031**	-	-0.028***
	-	(0.007)	-	(0.015)	-	(0.007)

Additional instruments: Leverage, EBIT-Total Assets, Log Tot Assets, Investor protection, GDP growth

F Test (*p value*)	2.90 (0.000)	3.48 (0.000)	13.83 (0.000)	13.08 (0.000)	3.33 (0.000)	3.65 (0.000)
N. Firms [N. Obs.]	57 [449]	57 [449]	57 [449]	57 [449]	57 [449]	57 [449]