

The unbundling regime for electricity utilities in the EU: A case of legislative and regulatory capture?

Keywords: electricity markets, vertical integration, corruption.

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Vertically Integrated Utilities (VIUs)

- We focus on two important activities in the electricity industry:
 - generation, production of electricity
 - transmission, transport of electricity over long distances
- Generation and transmission are generally (still) done by large vertically integrated state monopolies, or VIUs
- Economic theory suggests that VIUs would like to allocate as little capacity as possible to competitors

- The EU member states are restructuring their electricity industry to allow for more competition
 - DIRECTIVE 2003/54/EC and REGULATION 1228/2003)
- VIUs can use their network ownership to increase their profits and hinder competition, e.g.:
 - cross-subsidize their generation activities and recover their generation losses with high transmission fees
 - hinder access of competing generators to the network
 - as imposing discriminating requirements
 - charging unreasonably high access and service (balancing) fees.
 - VIUs have little incentive to invest in new transmission capacity

- Remedy: VIUs must unbundle (separate) their generation and network activities
- The EU distinguishes five main types of such unbundling:
 1. Unified ownership.
 2. Accounting unbundling.
 3. Functional unbundling (also called management unbundling).
 4. Legal unbundling.
 5. Ownership unbundling.

EU-15					
Unbundling regime	2001	2002	2003	2004	2005
1) None	0	0	0	0	0
2) account	0	0	1 (L)	0	0
3) Functional	3 (D, F, GR)	2 (F, L)	1 (F)	1 (L)	0
4) Legal	8 (A, B, DK, E, I, IRL, NL, P)	5 (A, B, D, DK, P)	4 (A, B, D, DK)	7 (A, B, D, DK, F, GR, IRL)	7 (A, B, D, F, GR, IRL, L)
5) Ownership	3 (FIN, S, UK)	5 (E, FIN, NL, S, UK)	6 (E, FIN, NL, P, S, UK)	7 (E, FIN, I, NL, P, S, UK)	8 (DK, E, FIN, I, NL, P, S, UK)

NMS-10					
Unbundling regime	2001	2002	2003	2004	2005
1) None	1 (M)	1 (M)	1 (M)	1 (M)	1 (M)
2) Account		1 (H)	2 (EST, H)	1 (LV)	0
3) Functional		2 (CY, EST)	2 (CY, PL)	1 (CY)	1 (CY)
4) Legal		6 (CZ, LT, LV, PL, SK, SLO)	5 (CZ, LT, LV, SK, SLO)	7 (CZ, EST, H, LT, PL, SK, SLO)	4 (EST, LV, P, SK)
5) Ownership		0	0	0	4 (CZ, H, LT, SLO)

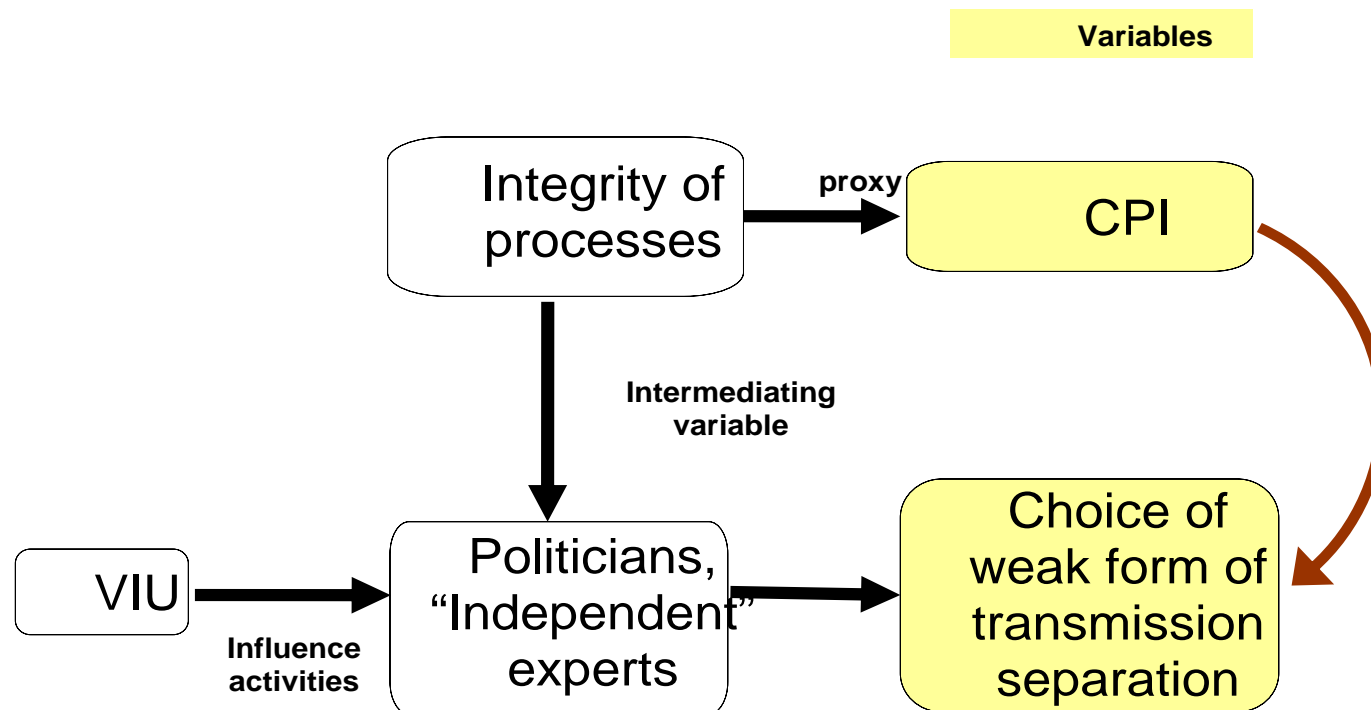
- Observation: many countries did not choose to implement ownership unbundling.
- Suspicion that part of the variation in the choice of unbundling regime can be explained by influence activities of VIUs.
- We use Corruption Perception Index (CPI) of Transparency International to proxy for influence activities of VIUs.

Example: Dutch scandal (January 2006)

- Energy companies Nuon, Eneco, Essent, and Delta secretly promised a “success fee” of EURO 1,7 million to IMSA, an “independent”, environmentally oriented consultancy company for lobbying.
- The fee was contingent on the government of the Netherlands deciding against ownership unbundling of the distribution network.

Our claim

- **Countries with a higher CPI score (less corruption) have a more complete unbundling regime**



Variables

<i>t_unbund</i>	transmission unbundling regime
<i>CPI</i>	Corruption Perception Index.
<i>t</i>	time trend
<i>GDP_pc</i>	per capita Gross Domestic Product (ppp corrected)
<i>GDP</i>	Gross Domestic Product (ppp corrected)
<i>NetElecIMP</i>	net import of electricity relative to the total net generation of electricity.

	Model 1 EU-15	Model 2 NMS-10
<i>CPI</i> Corruption Perception Index	1.48 ^{***} (.53)	-.83 ^{***} (.28)
<i>T</i> time trend	.63 ^{***} (.17)	1.23 ^{**} (.58)
<i>GDP_pc</i> per capita Gross Domestic Product (ppp corrected)	-.11 ^{***} (.04)	.08 ^{**} (.04)
<i>GDP</i> Gross Domestic Product (ppp corrected)	0.78 x10 ⁻⁷ (10.3 x10 ⁻⁷)	-43 x10 ⁻⁷ ^{***} (19.2 x10 ⁻⁷)
<i>NetImportElec</i> net import of electricity relative to the total net generation of electricity.	8.47 [*] (5.02)	-1.80 (1.37)
N	68	37

Significance *** 1%; ** 5%; * 10%. () Robust standard errors within

Marginal effects for EU-15

	Account	Functional	Legal	Ownership
<i>CPI</i>	- .2% (.002)	-3.7%* (.021)	-29%** (.12)	33%*** (.11)
TimeTrend	-.09% (.001)	-1.6% (.011)	-13%*** (.04)	14%*** (.05)
GDP_cp	0.01% (.0002)	0.3%* (.001)	2.2%** (.009)	-2.5%*** (.008)
<i>NetImportElec</i>	1.2% (.010)	21% (.13)	-167% (1.02)	189% (1.07)

Significance *** 1%; ** 5%; * 10%. () Robust standard errors within parentheses

Marginal effects for NMS-10

	Account	Functional	Legal	Ownership
<i>CPI</i>	3.9% (.030)	2.5% (.021)	-2.2% (.031)	-4.2%** (.021)
TimeTrend	-6.9% (.042)	-3.8% (.024)	3.3% (.04)	6.3%* (.033)
GDP_cp	-0.38% (.002)	-0.2% (.002)	0.2% (.003)	0.4%** (.002)
GDP_pps (in millions)	20.6% (.136)	13.2% (.069)	-11.7% (.118)	-22.1%* (.133)
<i>NetImportElec</i>	8.6% (.068)	5.5% (.042)	-4.9% (.050)	-9.2% (.077)

Significance *** 1%; ** 5%; * 10%. () Robust standard errors within parentheses

Conclusion

- EU-15 member states:
 - more corrupt -> more likely to have chosen a weak unbundling regime
- NMS-10 member states:
 - more corrupt -> less likely to have chosen a weak unbundling regime
 - reported early adoption of formal EU requirements as a cheap means to increase their chances to be judged eligible for accession into the EU.

- Questions