

Efficiency in the Public and Private French Water Industry: Prospects for Benchmarking

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- ▶ These public services can be managed in-house or contracted out to a private operator.
- ▶ There is no national regulator: municipalities monitor prices, control entry and exit of operators and ensure uninterrupted service.
- ▶ A hot political topic.

Motivation: conventional wisdoms differ (1/2)

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- ▶ Theoretically, no clearcut answer about public vs. private efficiency.
- ▶ The empirical evidence on cost-efficiency is mixed:
 - Better efficiency for private management: Kirkpatrick and al. [2006] on Africa.
 - Higher efficiency for public management: Bhattacharyya et al. [1995] on US data.
 - No significant differences: Saal and Parker [2000, 2001] on UK, Estache and Rossi [2002] on Asia.

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- ▶ What happens if we take into account the need for sound public finance?
- ▶ Can we find the 10% gap efficiency between public and private operators?

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 - Get a ranking.
- ▶ We run two alternative models: one with debt as an input, the other with debt as a control.

Data

- ▶ Collection of the 2009's *annual reports on price and service quality* (publicly available in the city hall) for the 325 biggest French water services (each one has a city of at least 20,000 inhabitants).
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- ▶ Problem: some reports are difficult to find so we got the *delegatee annual report* (strictly confidential).
- ▶ Collection just ended with 285 water services.
- ▶ We should get a sample of 140 water utilities.
- ▶ Our sample in the present paper is made of 72 water services.

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- ▶ Some contextual variables: **source** of water (underground vs. ground), **touristic** area or not, **population density**, **pooled water** provision, **bundled** with the sewage service, **managementdummy**.

Data

Variable	Private Management		Public Management	
	Mean	St.D	Mean	St.D
Dependant variables				
<i>Revenues (in thousands)</i>	12,958.90	14,734.31	7,808.51	18,948.91
<i>Debt (in thousands)</i>	4,683.29	7,807.93	6,756.84	7,185.28
Physical outputs				
<i>Volume billed (in thousands)</i>	8,954.51	9,333.08	5,913.10	14,044.494
<i>Length of mains</i>	717.15	739.68	531.96	791.29
<i>Nb of customers</i>	40,442.82	50,985.12	29,472.32	57,168.54
Quality indicators				
<i>Drinking water quality</i>	99.74	0.099	99.75	0.154
<i>1/Linear Leakage Index</i>	0.18	0.320	0.16	0.528
Environmental variables				
<i>Population density</i>	198.779	98.078	187.400	94.114
<i>Touristic Area (1 if yes)</i>	0.853	0.359	0.921	0.273
<i>Water Source (1 if underground)</i>	0.706	0.462	0.684	0.471
<i>Pool of authorities (1 if yes)</i>	0.412	0.500	0.605	0.495
<i>Activity (1 if bundled)</i>	0.559	0.504	0.447	0.504

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0.800	0.204	0.413	1	29 (40.27%)

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Table: Efficiency summary - Test 1

	Private Management	Public Management
	Score	Score
Mean	0.759	0.846
Min	0.434	0.388
Max	1	1
Best Rank	2	1
Nb of efficient services	12 (31.57%)	17 (50.00%)
Nb of services with score \geq 0.90	1 (2.63%)	4 (11.76%)
Nb of services	38	34

Table: Private vs. Public management - Test 1

Results II

Mean	Standard dev.	Min	Max	Nb of efficient services
0.772	0.206	0.402	1	21 (29.17%)

Table: Efficiency summary - Test 2

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Table: Efficiency summary - Test 2

	Private Management	Public Management
	Score	Score
Mean	0.731	0.819
Min	0.421	0.381
Max	1	1
Best Rank	2	1
Nb of efficient services	8 (21.05%)	13 (38.23%)
Nb of services with score \geq 0.90	4 (10.02%)	6 (17.64%)
Nb of services	38	34

Table: Private vs. Public management - Test 2

Conclusion

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- ▶ Need to fill in gaps in other coded data: quality of customer relationship (complaints for 1,000 customers), exports, industrial consumption.
- ▶ Run alternative regressions using alone-SFA models.

Looking for advices

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- ▶ Heterogeneity Controls: suggestions to improve it?
- ▶ Outliers detection: methods?
- ▶ Our variables: debt, revenues?

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