

The devil and the details

Italian water pricing reforms between technical rules and political will

Antonio Massarutto
DIES, University of Udine

Jean Monnet Module on Water Utility Management
Pisa, June 3d, 2015

Aim of the research

- «Full-cost recovery» is an established principle, but:
 - Too often reduced to an accounting identity
 - Too little attention to the design of costs that are actually allowed for recovery
 - Particularly important for capex, given the long economic life of WSS assets \Leftrightarrow importance of depreciation rules and cost of capital
 - International comparisons highly biased by different approaches chosen in national contexts
- Aim of the paper:
 - show how micro-economic details of water price regulation affect investment performance and financial viability
 - Show how discretionary margins left to policymakers in the implementation of regulatory principle affect industry viability
- Methodology:
 - Assessment of investment needs through a parametric model
 - Analysis of how different regulatory approaches to water pricing have modified the definition of costs allowed for recovery
 - Analysis of how regulatory schemes impact on investment capacity of water utilities through an appositely designed financial sustainability indicator

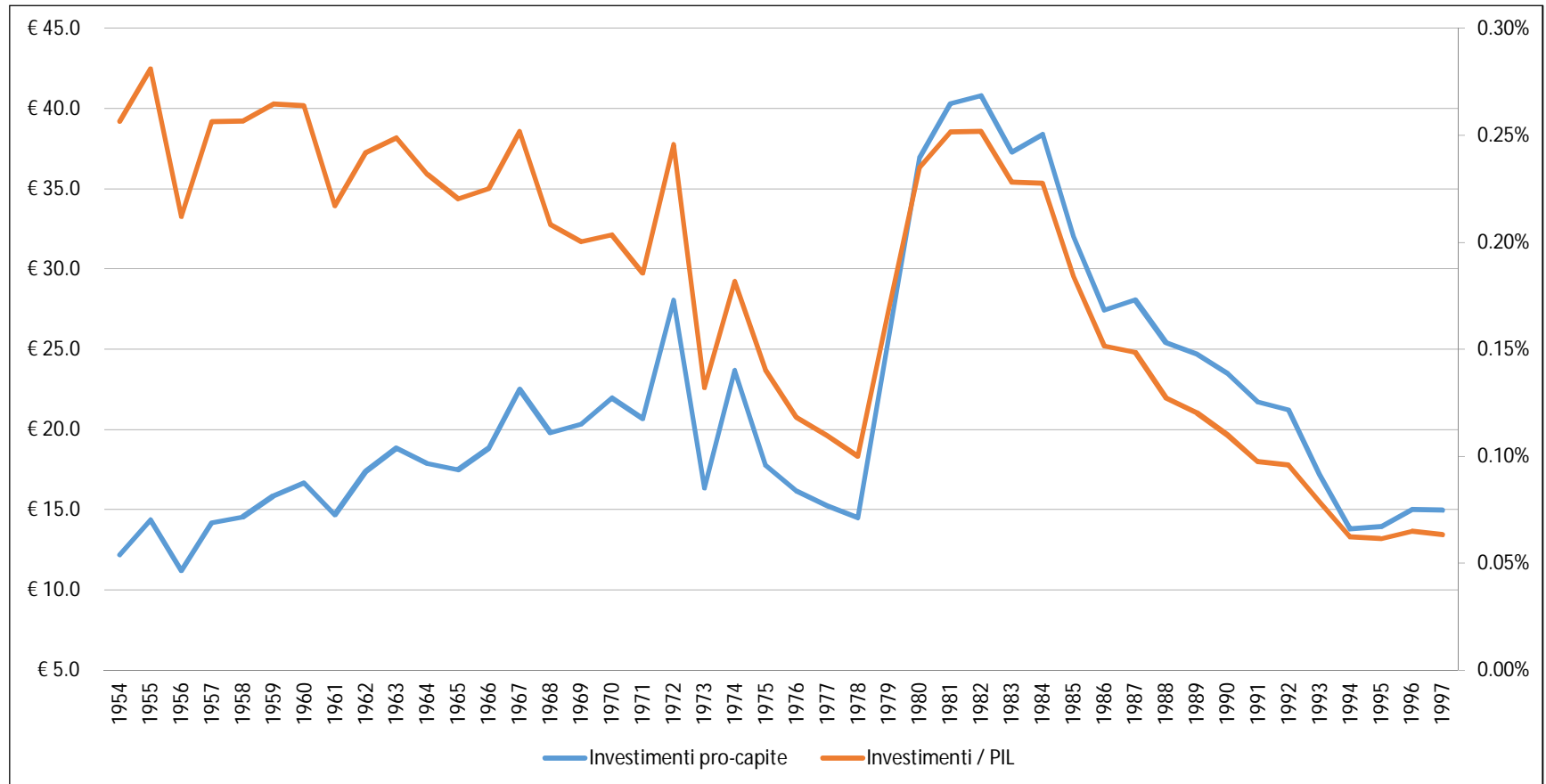
Background (I)

- The regulatory context: EU level
 - Focus on «full cost recovery» including ERC
 - Focus on using water prices as economic incentives twd water use efficiency
- The regulatory context: national level
 - Mostly concerned on cost recovery and limits to price increase
 - Public debate dominated by public vs. private and «commodification»
 - Little focus on benchmarking and financial sustainability
 - Little focus on ERC
- The regulatory context: applied economic literature mainly focused on:
 - Static efficiency and water price elasticity
 - Comparing private vs. public
 - Governance and institutions of economic regulation

Background (II)

- Italian WSS reform started in 1994
 - Aim: move from a fragmented system, mostly financed by public expenditure, to a self-sufficient water industry funded by tariffs
 - Strategy: concentration of management units (from 13.000 to < 100);
- The 2011 turning point
 - Unsatisfactory achievements: investment restarted but not rapidly enough; quality improvements limited;
 - Mounting popular discontent attacking «privatization» as a scapegoat
 - Popular referendum against law requiring competitive tendering and more private-like establishments; also against the principle of recovering financial cost of capital (on the claim that water services should be «not for profit»)
 - Reorganization of regulatory competences, now attributed to a national independent authority; new tariff scheme appositely designed to implement referendum outcomes

Legacy from the past: chronic underinvestment



Investments: planned, actual (and required)

1954-1969	1970-1978	1980-1989	1990-1997	ATO plans		First regulatory period	
				Original plan	Revised plan	Planned	Actual
16,2	18,0	32,4	17,3	37,3	30,6	61	33

Mean investment
(€/inhab/yr, normalized 2012)

Actual + planned investments vs. Investment requirements (€/inhab/yr, normalized 2012)
Sample: 9 ATOs

	1	2	3	4	5	6	7	8	9	mean
Actual + planned	67.4	11.9	30.0	31.6	37.8	61.1	20.5	53.3	36.0	38.8
Requirements	150.5	54.4	56.0	51.9	86.4	105.2	108.7	52.8	58.1	80.4
Absolute gap	83.1	42.5	26.0	20.3	48.6	44.1	88.2	-0.5	22.1	41.6
Ratio	2.23	4.57	1.87	1.64	2.29	1.72	5.30	0.99	1.61	2.07

Methodology

- From «full-cost recovery» to «financial sustainability»
 - Static vs. dynamic approach
 - Accounting vs. financial approach
 - Sustainability \Leftrightarrow ongoing capacity to generate free cash flows to guarantee capital + interest outflows
- Steps of the research
 - Define financial sustainability (short vs. medium and long term)
 - Choose appropriate indicators
 - Apply to a sample of 10 utilities (fully in detail) + some others (less in detail) on the basis of data availability (NOT statistically representative! Nonetheless good territorial coverage and «fairly» representative)
 - Shortcoming: all data supplied on a voluntary basis; no data disclosure by regulatory authorities, neither at national nor local level)

Financial sustainability indicators: short vs long term

- Short-run financial sustainability (SRFS):
 - ratio between actual FCF and existing financial obligations (SRF1).
 - Captures the capacity of actual arrangement for managing WSS to generate adequate cash flows in face of already existing liabilities.
 - A value > 1 indicates that the operation is generating more cash than actually needed at present; this can be set aside for future investment, or extracted by company owners.
- Medium-run financial sustainability (MRFS)
 - Considers perspective cash flows (allowed by *already approved tariff plans* and/or *implicit in the price regulation mechanisms already in place*) and planned investment along the concession contract
 - Measures the capacity of actual rules to fund planned investment programs
 - MRF < 1 means that actual investment plans are not coherent with actual pricing levels / rules
- Long-run financial sustainability (LRFS):
 - based on the ratio between perspective FCF, calculated as for MRF, and a conventional value corresponding to the reconstruction cost of existing assets.
 - Compares the existing structure with the one that should be put in place in order to compensate the true depreciation of existing assets.
 - If LRF < 1 , it means that at present the system is able to set aside only a fraction of what is theoretically needed; in other words, replacing the existing asset base would be feasible in the future only with a price increase equal to $1/\text{LRF}$.

	Normalized tariff method (MTN)	Transitional tariff method (MTT)	Definitive tariff regulation (MTI)
Period	1996 - 2011	2012-2013	2014-2015
Operational costs (Opex)	Estimated through a desktop study Revision admitted but not regulated in detail	Based on 2011 accounts and Opex admitted by previous regulation Opex converge to 2011 accounts or Opex admitted by previous regulation depending on specific circumstances	Opex = average between 2011 accounts and Opex admitted by previous regulation Possibility to define a new OP in case of structural change in service
Efficiency gains	Price-cap based on benchmarking formula	No incentives in the transition period Announced for the future	No incentives in the I period Announced for II period
Pass-through costs	Electricity, Bulk water, local charges and taxes	As for MTN	As for MTN Electricity cost is passed through, within the limit of average market price * actual consumption
Asset base	Assets already owned by operators at book value New investment made by operator at historical cost, anticipated according to the contract (compensation ex post on a triennial basis)	Assets already owned at reconstruction cost New investment at reconstruction cost (only actually realized investments after a time lag of 2 years) Assets owned by municipalities at reconstruction cost (cash flow set aside to the FoNI)	As for MTT Additional provision (anticipation for new investments) foreseen in case RAB < than a certain fraction of investment needs
Grants received	Not included	Included (depreciation only). Set aside to the FoNI	As for MTT
Depreciation	Any schedule admitted by tax legislation	True economic life	As for MTT
Financial amortization	Allowed	Not allowed	Allowed in case RAB < 50% of investment needs
Rate of return	Lump-sum rate (7%) on all investments sourced by the operator (on historical cost basis)	Market-based rate on all investments sourced by the operator (on revalued historical cost) Same rate applied to assets owned by municipalities (revenues set aside to the FoNI) Further lump-sum (1%) for new investments to compensate the time lag	As for MTT

	SRFS		MRFS		LRFS	
	MTN	MTI	MTN	MTI	MTN	MTI
1	1,87		1,50		0,23	
2	1,30		0,96		0,27	
3	2,20		0,94		0,31	
4	1,01		1,01		0,16	
5	-0,69	-0,10	1,01	5,69	0,22	0,49
6			1,03		0,30	
7	1,69		1,65		0,29	
8	0,82	3,71	0,54	2,41	0,07	0,71
9	7,78		1,12		0,88	
10	0,93	0,99	0,90	1,81	0,19	0,74
Lombardia					0,32	
Emilia-Romagna					0,45	
Average (unweighted)	1,88		1,07		0,31	

Allowed annual capex: MTN vs MTT-MTI

	MTN	MTT-MTI	Δ%
1	12.948.352	24.207.599	87%
2	10.860.030	18.107.743	67%
3	20.586.000	46.301.324	125%
4	19.600.000	55.084.596	181%
5	2.645.879	4.886.661	85%
6	12.077.956	14.700.320	22%
7	285.349	379.171	33%
8	10.100.681	8.207.085	-19%
9	2.507.945	2.330.267	-7%
10	152.352	5.998.497	3837%
11	8.041.662	9.381.315	17%
12	21.784.874	20.197.822	-7%
13	165.494.951	176.296.218	7%
14	75.939.257	78.989.900	4%
15	9.281.837	12.566.840	35%

Concluding remarks

- About the Italian case:
 - 2011 regulatory revision has gone in the right direction; investment capacity clearly improved
 - New approach still insufficient to secure start-up for areas needing huge investments
 - Regulatory discretion has diminished \Leftrightarrow investors' confidence improved
 - Next steps (all in the pipeline): incorporate ERC; introduce tighter «value for money» requirements; introduce tighter benchmarking to foster cost efficiency; introduce some tariff equalization
- Recommendations for water price regulation arising from the study
 - Need to use financial parameters (possibly more sophisticated than ours) to assess WSS viability
 - Need to incorporate long-run considerations in the assessment of WSS investment plans
 - Need to ensure that $SRF > 1$ does NOT lead to systematic expropriation (by municipalities more than by private shareholders)
- About more general lessons for WSS
 - Micro-institutional details matter (and matter a lot!)
 - Independence of regulators (especially from local elected people) matter a lot!
 - Adaptation of regulations to the phase of investment cycle
 - Political will matters a lot \Leftrightarrow regulatory rules cannot be so tight to eliminate discretionary application of some of them
 - The «ideal water company» regularly sets aside resources for future investment requirements; failure to do so leads to accumulating investment gaps and multiply the need to rely on financial markets for funding and face sudden price increase (very unpopular \Leftrightarrow vicious circle)
 - Financial economies of scale matter: capacity to manage investment on a rotation basis allows to use depreciation cash flows (similarly to «paygo» pensions) \Leftrightarrow case for financial institutions operating on a mutualized basis