

Paying for urban water services: some insights from across the ditch.

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Introduction

- An emotional and emotive issue?
- Managing water resources and managing water services.
- The pricing of water or pricing for the supply of water?
- Urban Water service investment in NZ
- The Australian problem
- The pricing choice
- Findings
- Some Issues worthy of consideration

An emotional and emotive issue?

Kapiti voters vow to fight water meter

The Dominion Post, 29 August 2007

***Charging for water is ghost of policies
past***

“Scoop” independent news, 30 August 2007

***Whatever happened to water meter
consultation?***

Kapiti Observer, 13 September 2007



Competing demands for water resources and water services

- The right to water
- Water resources and the tension between rural and urban demands
- Rural infrastructure needs versus urban infrastructure needs
- Domestic versus non-domestic pricing tension
- Transparency and accountability in water resource and water services management



The pricing of water or pricing for the supply of water?

A

**Critical
Distinction?**



Some Quick Sample Stats

- Water infrastructure investment 2005/06 for councils excluding regional councils and Dunedin City was valued at **\$4,309,981,621** (source: Annual Reports – 72 councils)
- Wastewater infrastructure investment 2005/06 was **\$5,0935,036,751** (71 councils excluding Dunedin City and Manawatu District Council)
- It was not possible to discern from Annual Reports, Annual Plans & Long-Term Council Community Plans (LTCCPs) how current rates are modelled.



Some Observations & Anecdotal Evidence

- Water services is supported by a large infrastructure investment in NZ
- Differing levels of pricing sophistication across councils
- Pricing model construct difficult to determine from annual reports, annual plans, LTCCP, etc.
- A different approach to sustainable management of water resources and water services



The Australian Problem

- Focussing the debate – COAG, 1994
- Under-pricing of water services (NCC, 1997)
- Existing pricing coincidentally considers cost of service provisioning (DNR, 1987; DCILGPS, 2000)
- Australia is the driest inhabited continent in the world (NWC, 2005)
- Adoption of user pays pricing represents a major strategic change
- Water pricing has historically been politically sensitive (PWD, 1984; DNR, 1988; Miller, 1999)



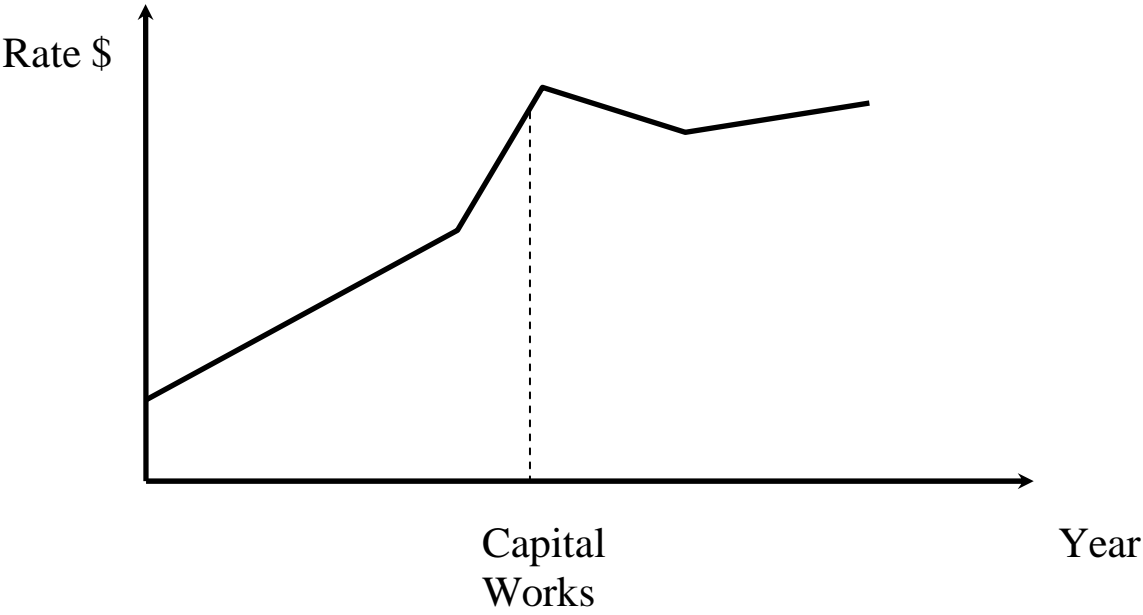
Some Background

- Water driven settlement and the right to water.
- Lumpy investments, rate spikes and political sensitivity.
- Queensland and secession
- Council of Australian governments

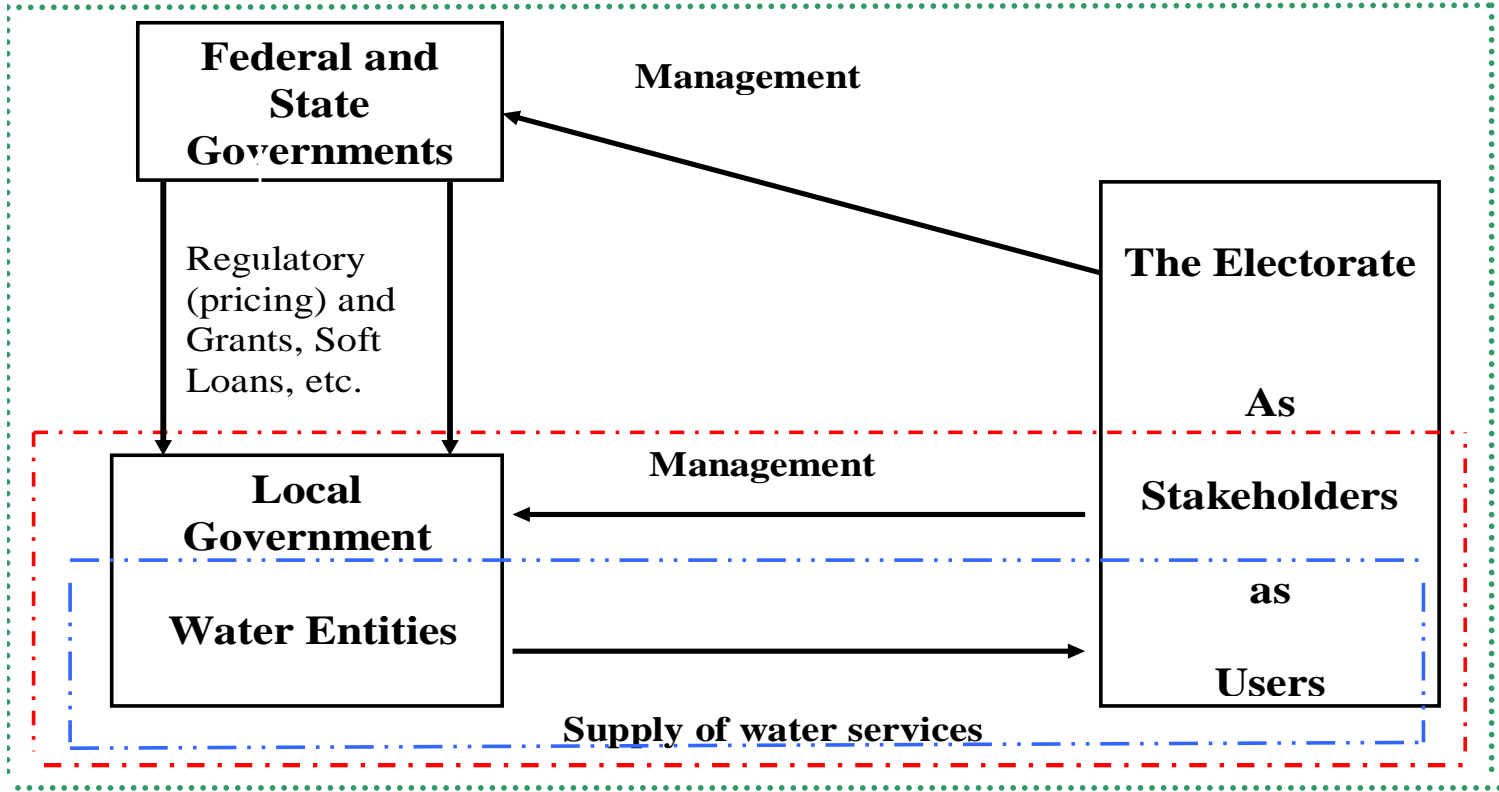


Political implications of the rate spike/jump

The Rate Jump Scenario



The Relationship



The Pricing Choice

The access charging:

$$R_{ac} = FBC + xVC_{exc}$$

Where:

R_{ac} = access charge revenue.

FBC = Fixed Base Charge calculated as a politically determined percentage of unimproved/improved land value and, in some cases, a predefined service consumption allowance (life-line limit).

X = the units of service consumed over and above the predefined service consumption allowance.

VC_{exc} = a politically determined charge per unit of excess water services consumption.



The pricing choice (Cont'd.)

The proposed pricing formula:

$$R_{up} = FC + xVC + r$$

Where:

R_{up} = User pays revenue.

FC = Fixed direct and indirect overhead costs for the supply of water services that are insensitive to the levels of supply (DCILGPS, 2000a: 13).

X = # of units of service consumed.

VC = Direct and indirect variable costs per unit of service supplied.

R = real rate of return (RROR) on infrastructure investment.



The pricing choice (Cont'd.)

Given that the user pays formula promotes a long-run marginal cost approach, the variable cost (VC) per unit of service component is:

Where:

O_{am} = per service unit contribution toward operations and maintenance costs less depreciation, interest and other financing/non-cash charges (DCILGPS, 2000a: 13).

O_s = per service unit contribution to operations support.

a_{rra} = per service unit contribution to planned future asset renewal, replacement and/or augmentation (10 – 25 yrs planning horizon, 20 – 25 year horizon recommended DCILGPS, 2000a: 9 & 15).

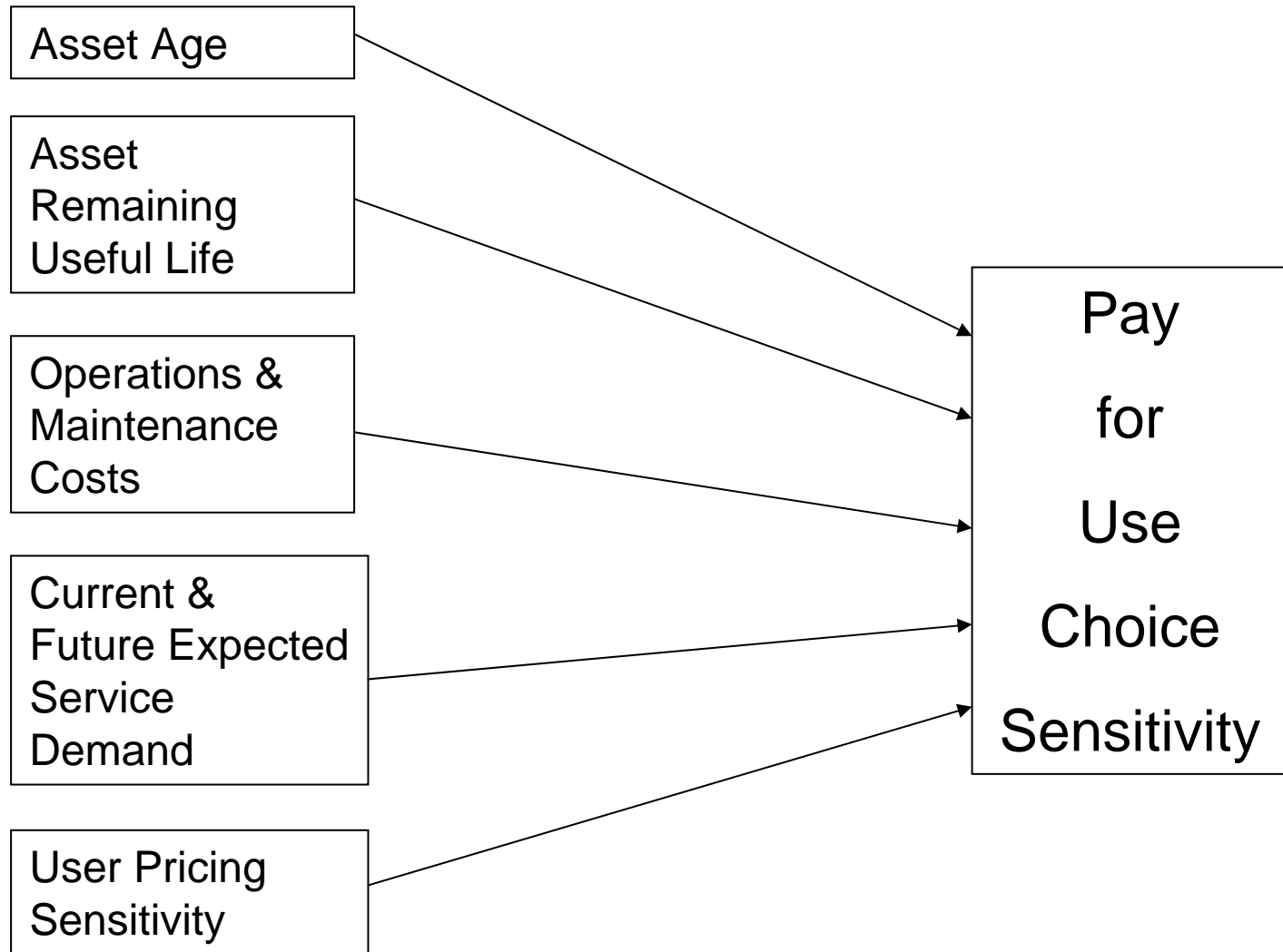


What is the intent of the 'user pays pricing approach?

- The sustained supply of water services through consideration of:
 - Current and future operating and maintenance cost; and,
 - Future asset renewal, replacement and augmentation needs.
- Anchor point for these estimations are the current assets in use – value, age and life expectancy.
- Driven by future demand estimates constrained by estimated water resource availability.



A contingent view for identifying political and transaction cost adoption tension



Findings

Table 2 Pricing Policy Choice Determinants for the Qld Urban Water Industry – Full Model

$$Y_{ppc} = A + \beta_1 POPCON + \beta_2 TYRDST + \beta_3 ELECTM + \beta_4 OAMPPS + \beta_5 CAPEXR + \beta_6 ARREAREV + \beta_7 ANGRO + \varepsilon$$

Variable	Dir (+/-)	Result (1)		Result (2)		Result (3)		Result (4)	
		Coef.f	Wald ^a	Coef.f	Wald	Coef.f	Wald	Coef.f	Wald
<i>Intercept</i>		.961 (.381)	.766	.541 (.571)	.322	1.189 (.162)	1.956	1.146 (.156)	2.011
<i>Political visibility (POPCON)</i>	-	-129.107 (.162)	1.955	-124.227 (.171)	1.874	-111.903 (.173)	1.857	-112.930 (.174)	1.851
<i>Current asset age (OAMPPS)</i>	-	-.002 (.061)	3.497	-.002 (.052)	3.773	-.003* (.025)	5.030	-.003* (.025)	5.040
<i>Current asset investment (CAPEXR)</i>	+	.372 (.222)	1.490	.359 (.235)	1.408	.313 (.267)	1.233	.308 (.270)	1.219
<i>Capacity to pay (ARREAREV)</i>	-	-.006 (.876)	.024			-.007 (.869)	.027		
<i>Growth trend (ANGRO)</i>	+		5.227		5.055		5.169		5.181
<i>Negative growth (ANGRO (1))</i>	-	-1.178* (.025)	5.001	-1.122* (.028)	4.828	-1.123* (.026)	4.944	-1.123* (.026)	4.937
<i>Positive growth (ANGRO (2))</i>	+	.364 (.804)	.062	.273 (.849)	.036	.241 (.863)	.030	.269 (.846)	.038
<i>Tyranny of distance (TYRDST)</i>	+		1.135		1.490				
<i>Region 1 (TYRDST(1))</i>	-	.526 (.582)	.303	.572 (.542)	.372				
<i>Region 2 (TYRDST(2))</i>	-	.599 (.297)	1.089	.651 (.230)	1.441				
<i>Electoral marginality (ELECTM)</i>	+		.779						
<i>Safe (ELECTM(1))</i>	-	-.513 (.462)	.540						
<i>Marginal (ELECTM(2))</i>	-	-.220 (.803)	.062						
<i>Very marginal (ELECTM(3))</i>	-								
Nagelkerke R²			29.2%		28.2%		26.4%		26.4%
Log likelihood			98.501		99.294		100.778		102.025
Model Chi-squared (sig)			21.784 (.026)*		20.991 (.004)**		19.507 (.003)**		19.479 (.002)**
No Change % Classified Correct			89.1%		83.6%		85.5%		85.5%
Adopt user pays % Classified Correct			68.6%		65.7%		57.1%		60.0%
Overall % Classified Correctly			81.1%		76.7%		74.4%		75.6%



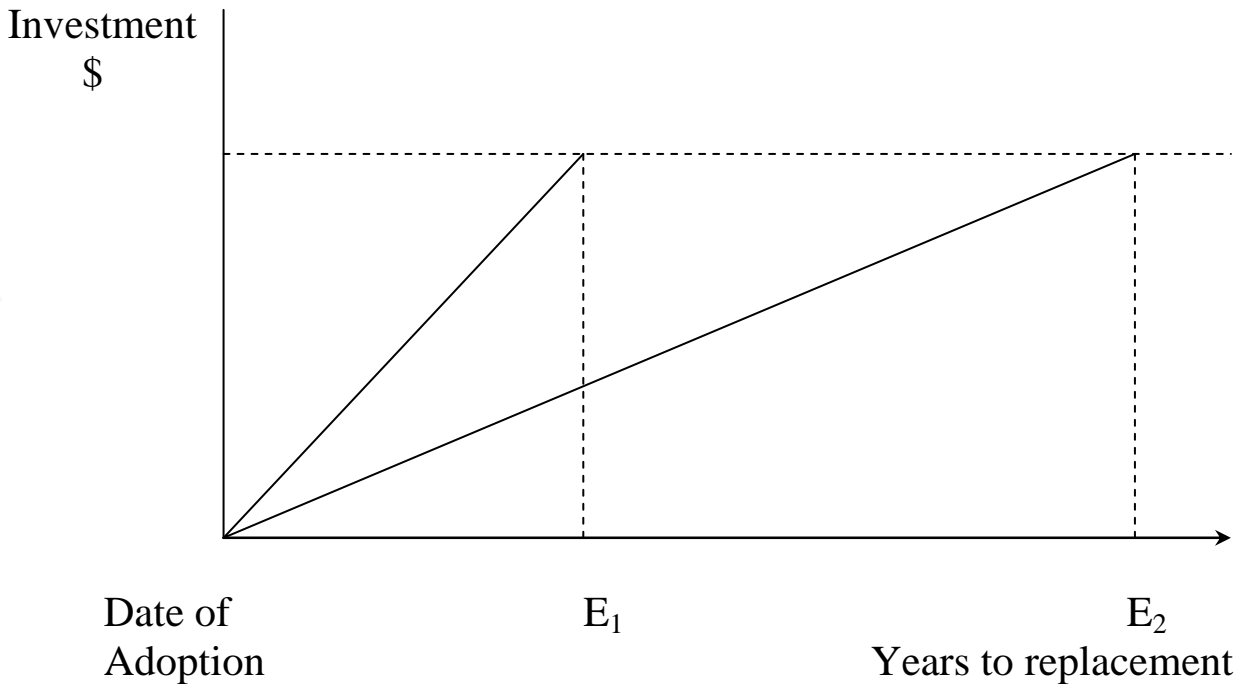
Some areas of further tension

- Potentially requires management to disclose performance information about management of resources and assets.
- Passes asset renewal, replacement and augmentation costs directly onto users – potential for economic wealth transfer and price increases.
- Asset measurement choices, real rate of return considerations and potential for impairment of performance measurement and price increase.
- Higher household numbers use higher amount of services resulting in higher bills that are more sensitive in lower socio economic areas.
- Potential for inequitable treatment of those councils having older infrastructure assets and declining revenue bases



Some issues worthy of consideration

- Paying for supply versus paying for water.
- Potential for inequitable pricing outcomes:



- The issue of economic wealth transfers and a staged removal of grant and soft loan funding?

Some issues worthy of consideration (Cont'd.)

- Pricing model measurement implications:
 - Implications for using Current Cost or Current Cost derivatives:
 - Real rate of return and monopoly rents;
 - Distortion of the relationship between asset values and operating and maintenance costs due asset age;
- Should revenues derived for the purpose of future asset renewal, replacement and/or augmentation be separately recognised?
- Treasury management of these funds including debt to equity considerations and a potential role for CCA.
- User pays – a double edged sword?



***Will present water
management practices
satisfy the future thirst for
water?***

