



PPPs and economic regulation: substitute or complement?

Prepared for the ACCC regulatory conference

Warwick Davis, July 2018

Overview

1

PPPs v economic regulation – substitutes or complements?

2

How PPPs and regulation could/should work together

3

Case study 1: Thames Tideway Tunnel

Case study 2: Desalination projects in NSW and Victoria

PPPs and economic regulation

Substitutable...

- Both are “contracts” that facilitate investment and ongoing service provision

A good fit where

PPPs

- Large, well defined investment
- Produces a flow of services that are readily monitored
- Large benefits from competition for the market
- No direct user charging

Economic regulation

- Direct user charging means incentive to invest is strong
- Ongoing investment creates complexity
- Primary concern to avoid monopoly pricing or other uses of market power

...but also complementary

- But the two can be combined (complementary) in some circumstances.
- Most obviously, where difficult to write a complete contract

PPPs used instead of regulation

PARTNERSHIPS VICTORIA PPP PROJECTS

Home → Infrastructure investment → Public private partnerships → Partnerships Victoria PPP projects

There have been 32 Partnerships Victoria projects contracted worth around \$30.1 billion in capital investment.

Contracted projects

- [Ballarat North Water Reclamation Project](#)
- [Barwon Water Biosolids Management Project](#)
- [Bendigo Hospital](#)
- [Biosciences Research Centre Project \(AgriBio\)](#)
- [Camposie Water Reclamation Scheme](#)
- [Casey Community Hospital](#)
- [Citylink-Tulla Widening Project](#)
- [EastLink](#)
- [Fulham Correctional Centre Contract Extension Project](#)
- [High Capacity Metro Trains](#)
- [Hopkins Correctional Centre](#)

- Sometimes, PPPs used where economic regulation of the (intermediate or ultimate) service supplier could have substituted – Why?

Hospitals

Courts

Bioscience

Prisons

Major building developments

Schools

Desalination plant

Roads (toll and other)

Rail

User charges

PPPs – two key economic issues resolved

Opportunism and commitment

- What guarantee do I have that you will keep your promise to me to recover my costs?
- Time inconsistency + investment in specific assets = opportunism

Information asymmetry

- Only I know whether I am efficient
- Why should I give effort to keep costs down? (Moral hazard)
- When costs are low, is it because firm is efficient, or was the contractor not demanding enough?

PPP
contract

- Bundle construction with operation
- Price and quality controls (not costs)
 - Define risks in contracts

These familiar issues are managed differently in regulation...



Regulatory contract

Opportunism / commitment

- A RAB
- Allow for contractual incompleteness through regulatory discretion
- With legislative direction on objectives, and requirements for transparency

Information asymmetry

- Regulator uses *ex ante* allowance (incentive regulation) to get firms to reveal efficient costs
- Then shares savings with consumers
- Regulates quality as well as price

...the regulatory contract allows for more flexibility for managing uncertainty and unforeseen events

Example of cost overruns

Suppose an investment is made

The asset is damaged by an (unforeseen) event

Whose job is it to fix it, and how much does it cost?

- **Regulation** has discretionary, transparent processes to deal with cost overruns
- For example, can recover costs if:
 - in the “long term interests of users”
 - Can demonstrate that costs incurred are efficient
 - Cost not reasonably foreseeable (e.g. was insurance an option?)
- In a **PPP** the responsibility and cost oversight (usually) entirely depends on the contract
 - This may be fine if there is minimal complexity
 - Risk allocation clear in contract

When do problems occur?

- *Long term nature of private finance contracts created a problem for public bodies related to loss of expertise (UK National Audit Office 2018)*
- *Risks taken by private sector are too large - Carillion failure (2018)*

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The two approaches can work together

PPP contracts cover construction and operation

- Can still realise benefits of bundling construction with operation (Hart 2003)
- But payments treated differently in the construction and operation phases

PPP locks in construction cost

Private firms better at management of construction risk

Difficult for regulators to set cost allowances and a commercial rate of return

Regulation during operational phase

Appropriate incentive balance (setting cost allowances and incentive mechanisms) requires predictability

Independent regulators better at avoiding capture than PPP 'contract enforcers' – transparency a key element

Case studies

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Case study 1: Thames Tideway Tunnel

Case study 2: Desalination projects in NSW and Victoria

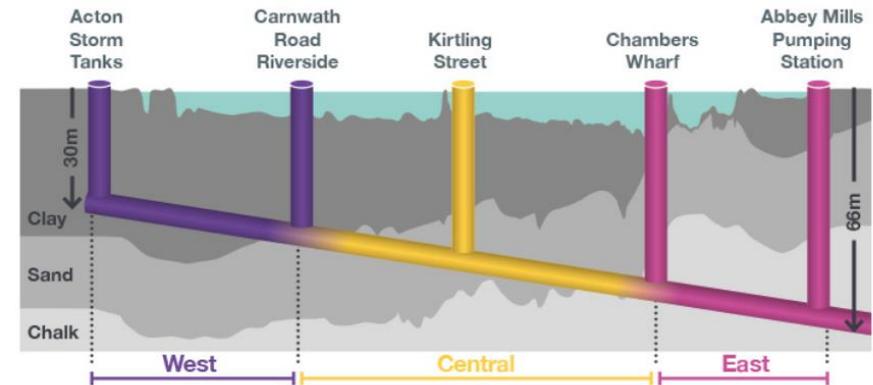
Case study 1: Thames Tideway

The Thames Tideway Tunnel

- A major infrastructure project developed by Thames Water
- Purpose: update aging infrastructure to capture, store and convey wastewater that may otherwise discharge into the River Thames.

At 25 kilometres long, up to 66 metres deep and more than seven metres wide, the Thames Tideway Tunnel will be the biggest infrastructure project ever undertaken by the UK water industry.

It will generally follow the route of the River Thames, enabling it to connect to the 'combined sewer overflows' (CSOs) dotted along the riverbanks, passing beneath all other infrastructure in London and through a variety of different ground conditions.



Well suited to PPP for construction

- Capital cost £4.2 billion - the largest privately funded infrastructure project in Europe.
- It was urgent.
- There are massive tunnelling risks involved, as much of the tunnelling will be carried out under central London.
- The construction time, estimated at 10 years, is much longer than most other projects.

Case study 1: Thames Tideway

PPP had special regulatory features...

Ofwat and licensing

- Ofwat has a special regulatory framework for large or complex infrastructure projects
- Incumbent supplier competitively tendered
- Winner (Bazelgette) is regulated via a licence

Regulatory features

- Cost of capital
 - Bid on the basis of the lowest WACC in the 'construction phase' (up to 2030)
 - From 2030, WACC will be set by Ofwat
- Pre-determined construction cost threshold (apply to Ofwat if want more)
- Ofwat issued economic guidance to placate potential bidders ("we will treat you fairly")
- Rights to appeal to Competition and Markets Authority

Complementarity

- The tricky task of achieving an efficient risk allocation, and determining a commercial return, was left more in bidders' hands.
- Once the project is operational, it reverts to a standard incentive-based regulatory approach.
- Achieved real, post tax bid WACC of 2.5%.

Case study 2: NSW and Vic desalination plants

A comparison of two approaches

- Victoria built desalination plant as a PPP
- NSW built as a government project, then privatised the lease

- NSW allowed for the state regulator to have a role in approving the costs of the (operational) plant
- Victoria did not

- Can we evaluate which is better?
- Depends on your view of
 1. uncertainty and the nature of the project
 2. regulation and regulators

Victoria

PPP motivation

- Desalination built on the back of a bad drought
- High capex / low opex project
- Build it fast



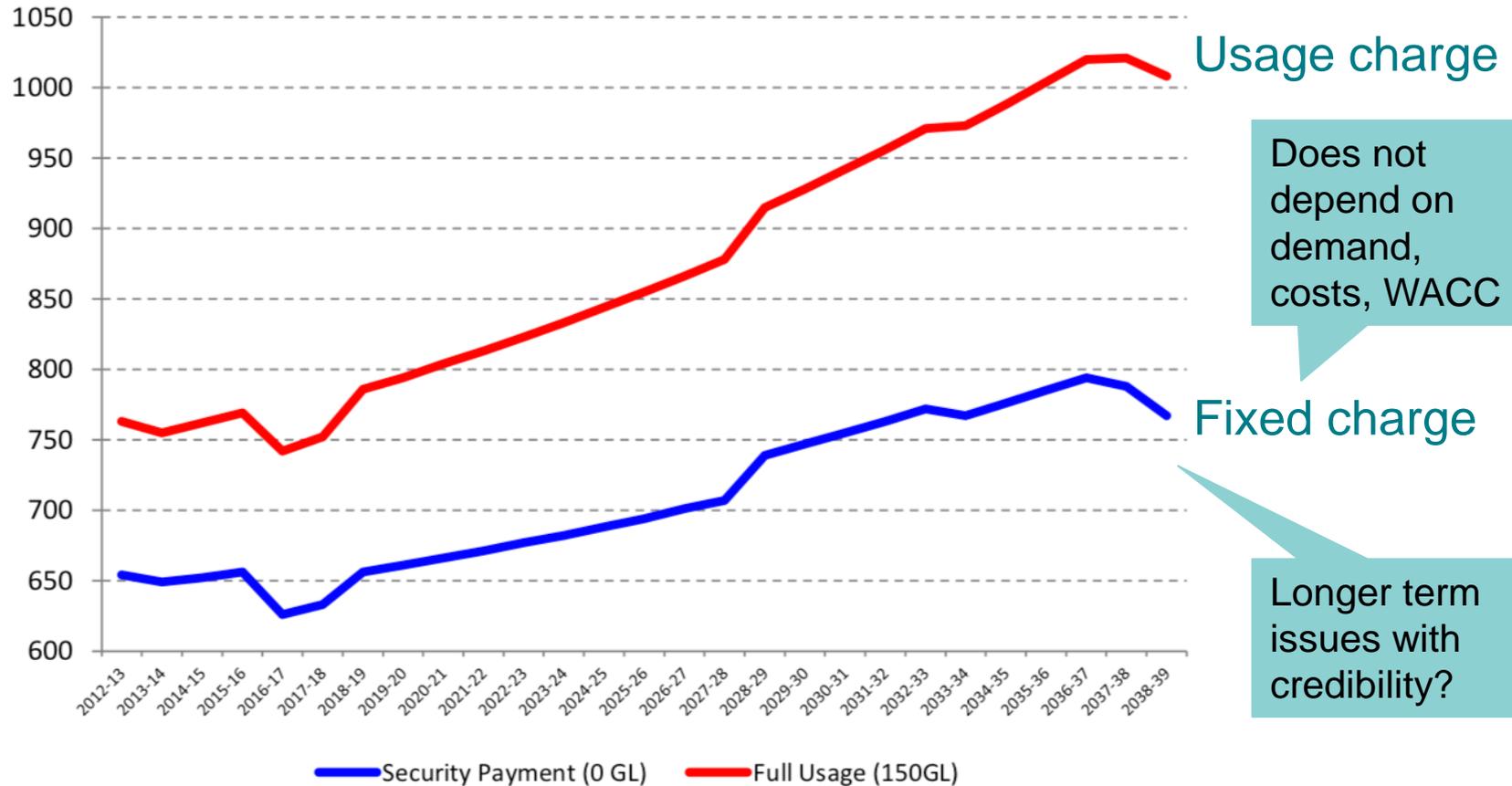
- Private operator to finance, design, build, operate, and maintain the project for 30 years
- Capital cost = \$3.5 bn
NPC = \$5.7 bn
Total \$nom = \$23.9 bn

PPP management and regulation

- Obligations on Melbourne Water to buy water
- Contract managed by Department
- Essential Services Commission (ESC) regulates MW retail prices, but not desal input charges
- The ESC *can* affect the pass through of those charges in retail water determinations
 - For example, can spread the costs over the full asset life, rather than the lease life

Structure of payments

Figure 1: Payments to desalination plant operator (\$m nominal)



Source: Ben-David (2013)

NSW

Project motivation

- Desal built on the back of a bad drought (as per Victoria)
- Costly project, build it fast

Public, then private

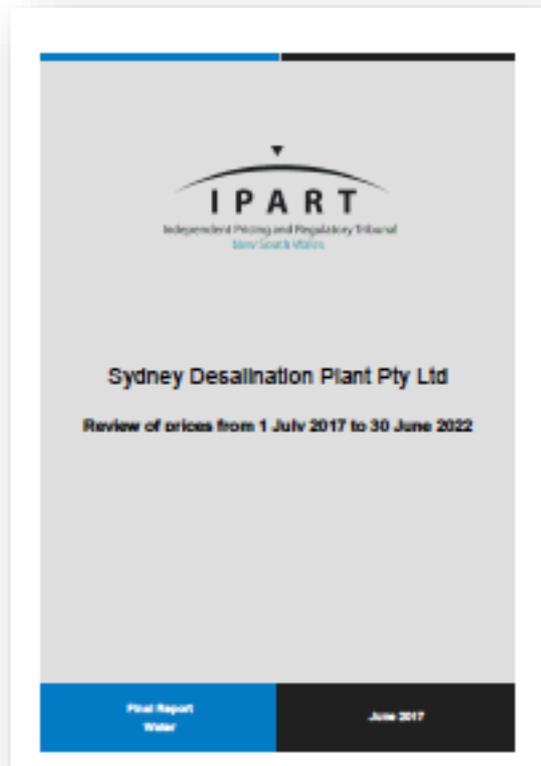
- Sydney Water Corporation (SWC) directed to construct (2007-10) and operate
- NSW Government sold a 50 year lease on the plant in June 2012 backed by a 50 year water supply contract with SWC. Sold for \$2.3 bn.

Plant management and regulation

- IPART sets the maximum prices SDP can charge for its water supply services to SWC
- Can apply standard incentive regulation techniques
 - Efficiency adjustments
 - Energy costs pass throughs

NSW process

- IPART conducts transparent, rolling reviews of SDP's costs



200+
pages
on...

Regulatory term

Consideration of cost pass throughs

Revenue requirement

Expenditure review

Energy costs

WACC

What are the benefits of this compared to the Victorian approach?

Summing up

1

PPP contracts and regulation can be substitutes or complements

2

The long-lived nature of most assets built using PPPs can be a problem

But these problems may take some time to emerge

3

Not all PPPs would benefit from 'regulation'

For more complex PPPs, a PPP that incorporates regulation in the operational phase can address commitment (RAB) while allowing for contractual incompleteness

Such a regime may have better long term credibility

Useful references

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- Iossa, E & Martimort, D. “Risk allocation and the costs and benefits of public-private partnerships”, *The RAND Journal of Economics*, Vol. 43, No. 3 (Fall 2012), pp. 442-474
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- Partnerships Victoria / water.vic.gov.au
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*We apply **economics** to markets, organisations and policies*