



Politics, Finance and Transport: Megaprojects in Australia

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Overview

1. Introduction
2. The Macro Level: Transport funding
3. The Micro Level: Project Delivery
 - Evidence of Australian Megaprojects
 - Unit Costs
 - Cost Risk
 - Demand Risk
4. Improving Delivery and Planning

1. Introduction



SMH

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1. Introduction

- Infrastructure decision making has lost public confidence
- Multiple multi-billion dollar project failures in past decade
- Lack of bipartisan support for policies or projects
- Lack of effective long - term planning and programming



1. Introduction

- Reforms are needed – how do we target them?
- Are we allocating the right amount of resources?
- Are we using the resources wisely?
- Apply Flyvbjerg (Megaprojects and Risk) analysis to Australia
- Identify specific reforms needed to reach acceptable practice

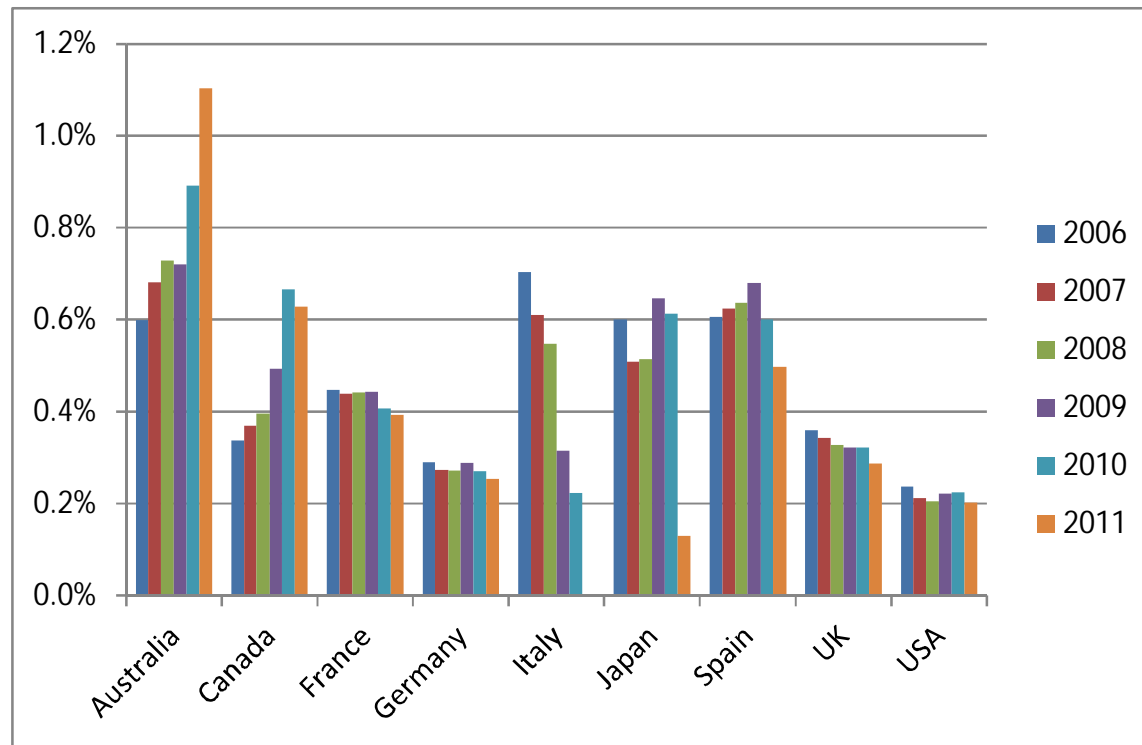
2. The Macro Level: Transport Funding



APH website

2 Macro Level: Transport funding

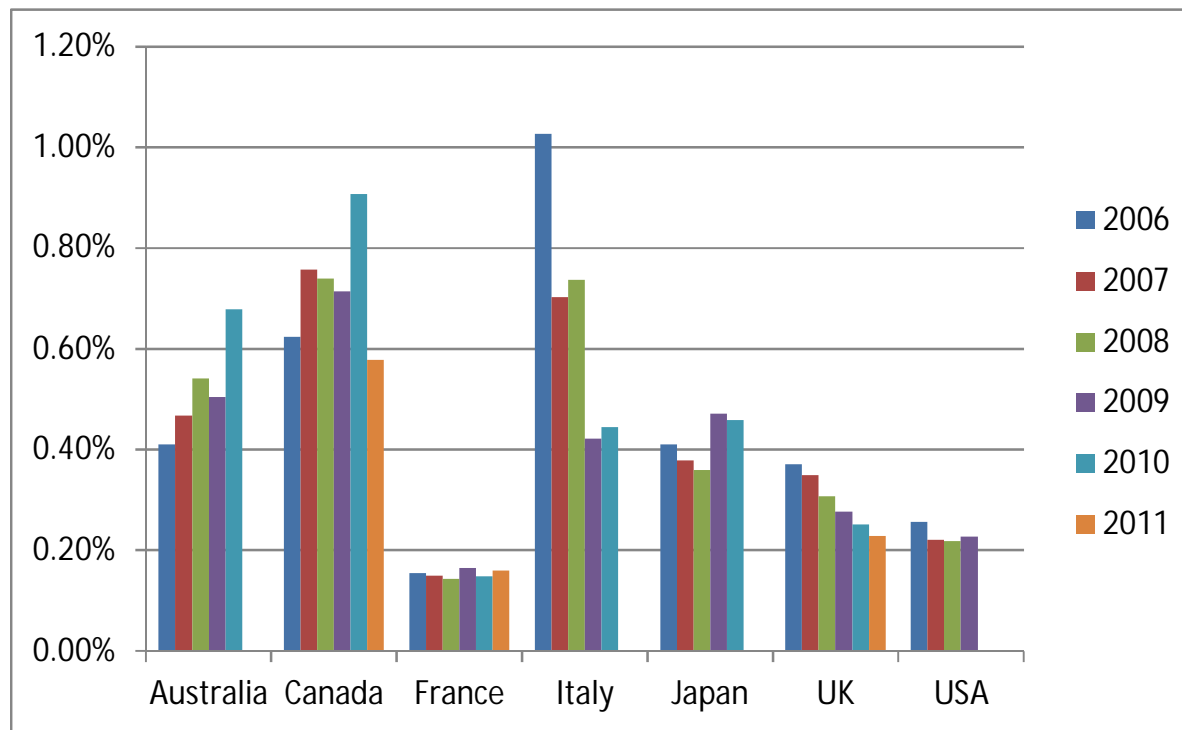
- Capital funding has become inconsistent
- Was average by OECD standards before 2008
- Increased to very high 2009 to 2012, then dropped back again



Road and Rail Investment as % of GDP (OECD data)

2 Macro Level: Transport funding

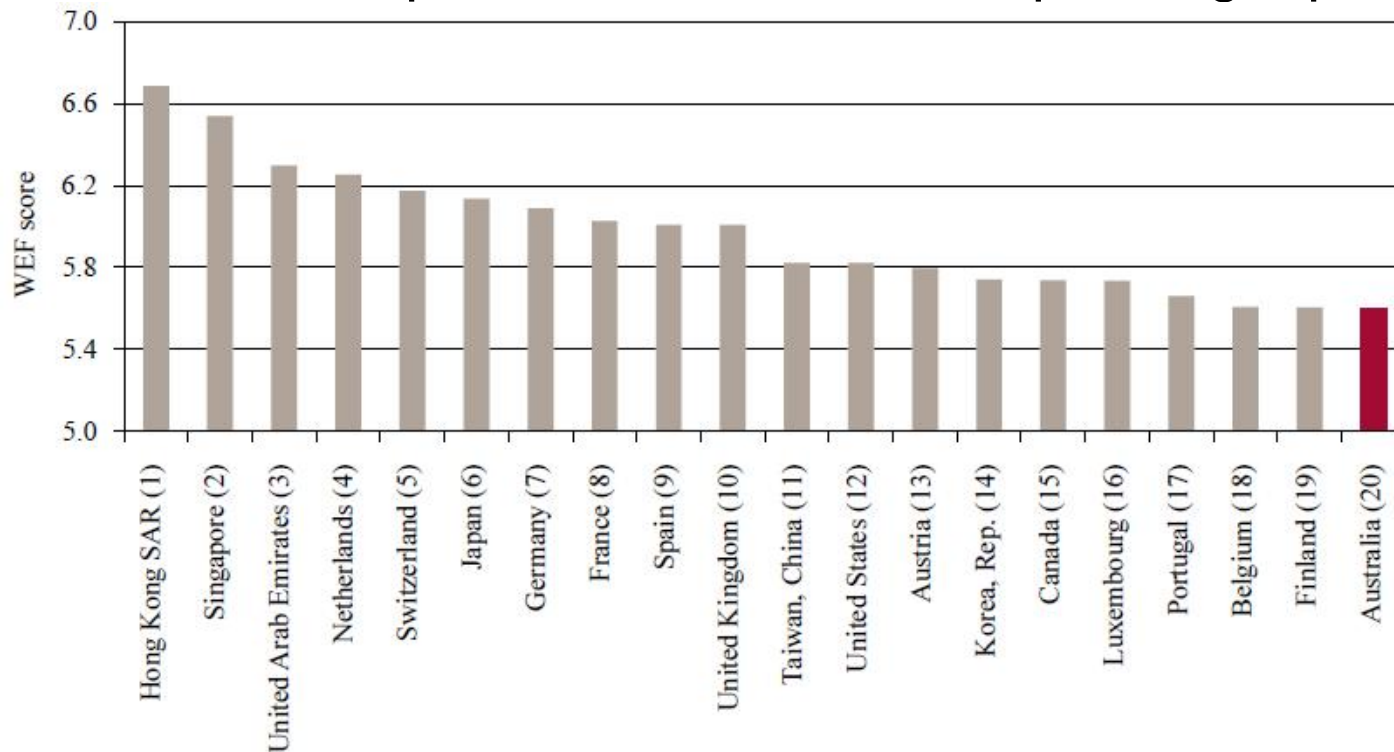
- Maintenance funding low relative to size and road/rail length
- Compares poorly to Canada with similar population density
- Funding skewed towards capital during period of high growth



Road Maintenance Funding as % of GDP (OECD data)

2 Macro Level: Transport funding

- What is the end result for infrastructure?
- Population growth (+1.5%pa) among highest in OECD (+0.5%pa)
- Inconsistent capital, low maintenance spending = poor quality



Infrastructure Quality Rankings 2014 (World Economic Forum)

2 Macro Level: Transport funding

The road less travelled:

- Travel demand management?
- Developer contributions?
- Reviewing policy on population growth rate?



Transport for London



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3 The Micro Level: Comparing Megaproject Delivery



3 Micro Level: Project Delivery

- Measure efficiency and risks in project delivery (Flyvbjerg 2003)
- Unit Costs: are projects efficient?
- Cost Risk: are cost estimates reliable?
- Demand Risk: are demand forecasts accurate?



Road building across Blue Mountains, 1860s

3 Micro Level: Data Issues

- Database of 38 projects, 1992 to 2015; \$200m to \$5300m
- All public data; Qld TMR and WA PTA provided demand data
- Major data weaknesses:
 - No post completion checks
 - No database of forecasts
 - Business cases not public



Lolcats

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Australian Megaproject Database

Project	Type	Year	Real Cost (\$M 2015)	Cost/Lane-km (\$M)	PPP Outcome
Sydney Harbour Tunnel, Sydney	Tunnel	1992	\$1106	\$99	Profitable
M2 Motorway, Sydney	Surface	1997	\$914	\$11	Profitable
Eastern Distributor, Sydney	Tunnel	1999	\$1310	\$55	Profitable
City Link Melbourne	Surface	2000	\$3947	\$30	Profitable
Sydney Airport Rail	Tunnel	2000	\$1615	\$81	Bankrupt
South East Busway, Brisbane	Surface	2000	\$912	\$28	
Pacific Motorway, SEQ	Surface	2000	\$1491	\$4	
Brisbane Airtrain	Surface	2001	\$362	\$21	Bankrupt
Yelgun - Chinderah, NSW	Surface	2002	\$573	\$5	
Liverpool – Parramatta T-Way, Sydney	Surface	2003	\$546	\$9	
Alice Springs - Darwin Rail	Surface	2004	\$1894	\$1.3	Bankrupt
Cross City Tunnel, Sydney	Tunnel	2005	\$967	\$115	Bankrupt
M7 Motorway, Sydney	Surface	2006	\$2423	\$15	Profitable
Regional Fast Rail, Melbourne	Surface	2006	\$1066	\$2	
Mandurah Rail Line, Perth	Surface	2007	\$2133	\$15	
Lane Cove Tunnel, Sydney	Tunnel	2007	\$1414	\$79	Bankrupt
Inner Northern Busway, Brisbane	Surface	2008	\$614	\$68	
Tugun Bypass, Gold Coast	Surface	2008	\$676	\$24	
East Link, Melbourne	Surface	2008	\$3114	\$13	Profitable

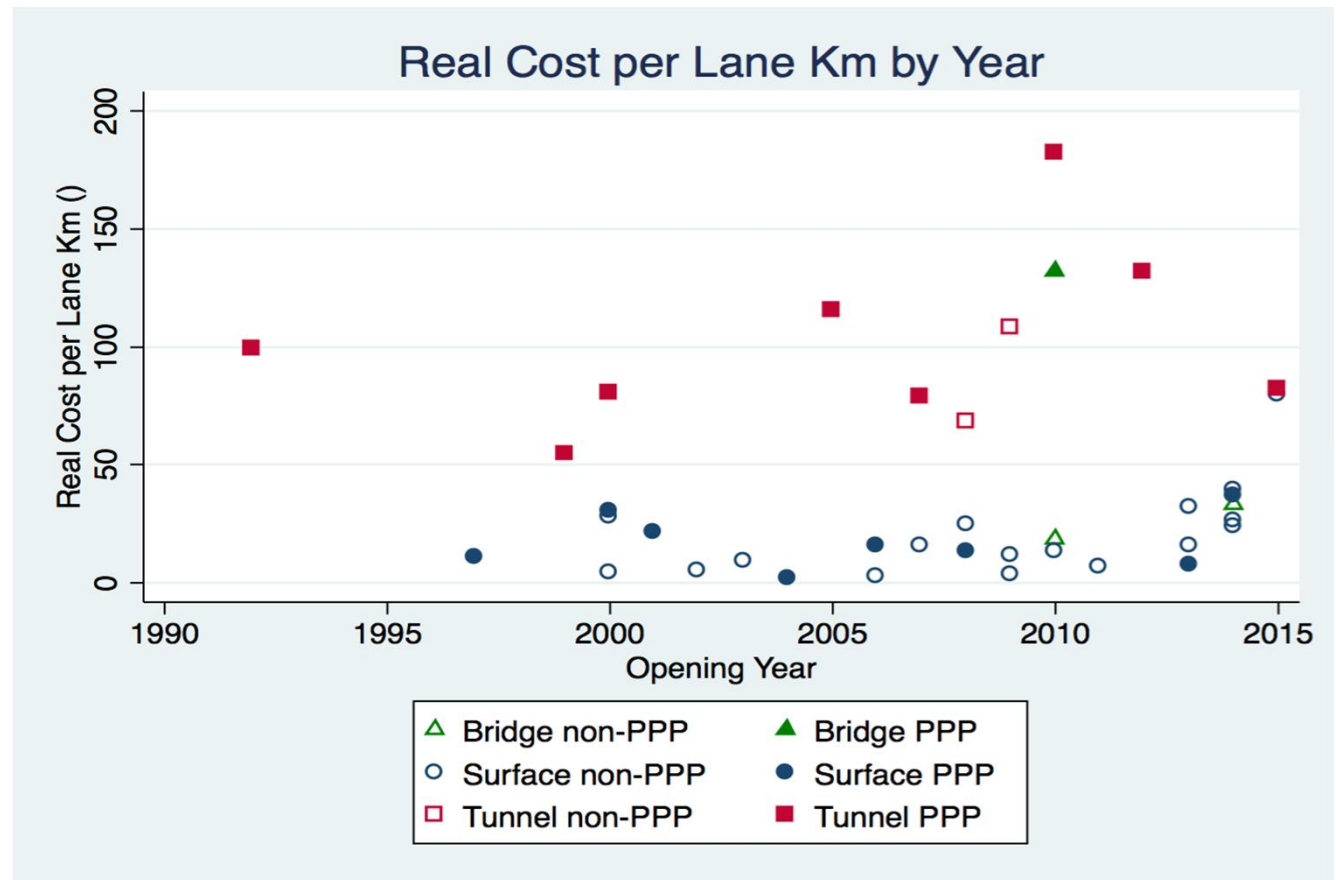
Australian Megaproject Database (continued)

Project	Type	Year	Real Cost (\$M 2015)	Real Cost/Lane-km (\$M 2015)	PPP Outcome (7/16 Bankrupt)
Deer Park Bypass, Melbourne	Surface	2009	\$426	\$11	
Epping Chatswood Rail, Sydney	Tunnel	2009	\$3020	\$108	
Forrest Highway, Perth	Surface	2009	\$829	\$3	
Clem 7 Tunnel, Brisbane	Tunnel	2010	\$3493	\$182	Bankrupt
Gateway Upgrade, Brisbane	Surface	2010	\$2212	\$18	
Go Between Bridge, Brisbane	Bridge	2010	\$369	\$132	Profitable
Monash-CityLink-Westgate, Melbourne	Surface	2010	\$1517	\$13	
Northern Expressway, Adelaide	Surface	2011	\$621	\$7	
Airport Link, Brisbane	Tunnel	2012	\$5288	\$132	Bankrupt
Western Ring Road Upgrade, Melbourne	Surface	2013	\$2407	\$32	
Peninsula Link, Melbourne	Surface	2013	\$774	\$7	Viable (Shadow toll)
Butler Rail Extension, Perth	Surface	2013	\$225	\$15	
Ipswich Motorway, Brisbane	Surface	2014	\$2996	\$24	
Seaford Rail Line, Adelaide	Surface	2014	\$292	\$26	
South Road Superway, Adelaide	Bridge	2014	\$948	\$33	
Gold Coast Light Rail	Surface	2014	\$953	\$37	Profitable
Regional Rail Link, Melbourne	Surface	2014	\$3719	\$39	
South West Rail Line, Sydney	Surface	2015	\$1809	\$79	
(Legacy Way, Brisbane) Excluded	Tunnel	2015	\$1507	\$82	Delayed

3 Micro Level: Project Delivery

Unit Costs:

- Steady over time
- Road = Rail
- PPP = non-PPP
- Surface = \$21m
- Bridge = \$61m
- Tunnel = \$102m



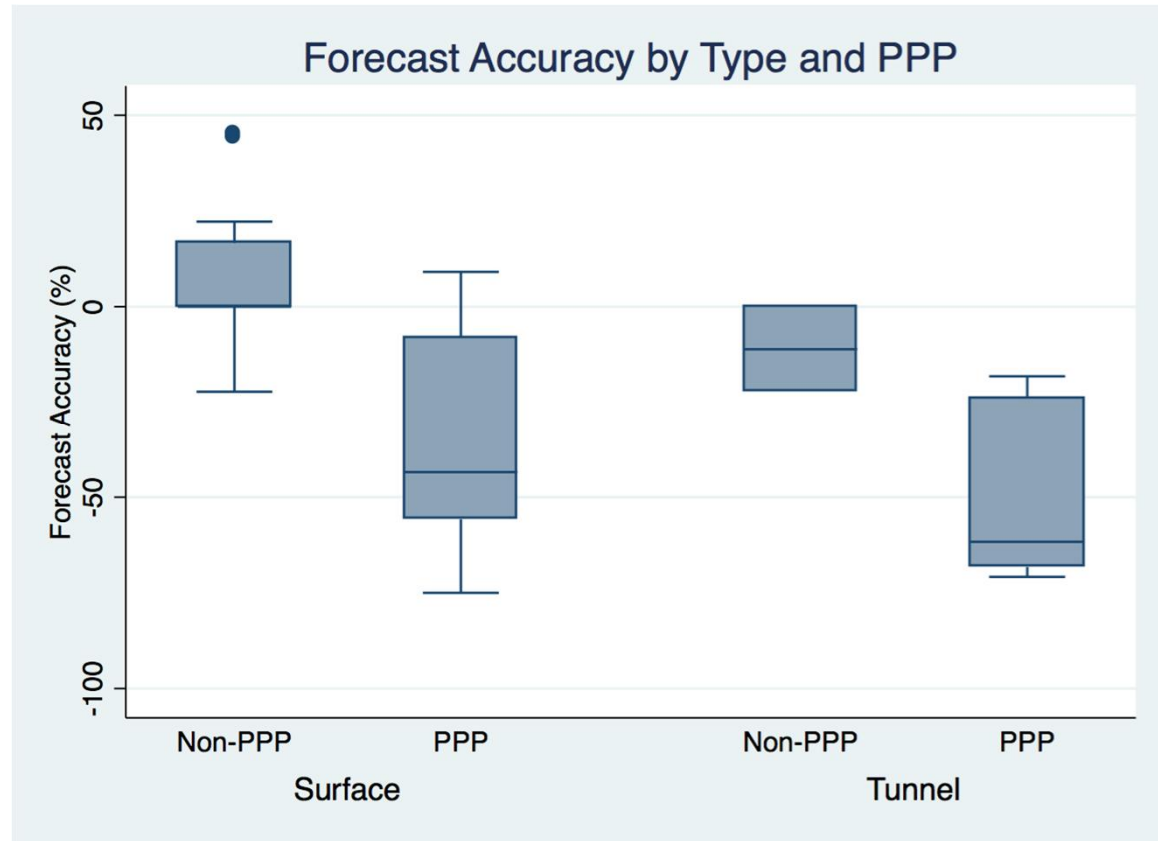
3 Micro Level: Project Delivery

Demand Risk

% planned vs actual

- Steady over time
- Heavily skewed
- Average -15% error
- Public -6% error
- PPP -44% error
- PPP same as Europe

(Flyvbjerg)



3 Micro Level: Project Delivery

Recent Australian PPPs compared to European Megaprojects

- Cost risks well controlled
- Demand risk for PPPs worse than for non-PPPs
- Margin of demand risk difference (44%) statistically significant
- Poor forecasting accuracy for PPPs persistent over time

3 Micro Level: Project Delivery

Why so bad for PPPs?

- Australian PPP issues vs Flyvbjerg recommended practices:
 - Transparency absent
 - Governance structures not independent (regulator/promoter)
 - Demand risk was private, now being transferred back (Melbourne EW Link)
- PPPs perform better where governance better (Chile, USA, Canada)

Managing project risk (Flyvbjerg 2003)

- Decision maker & proponent independent
- Public scrutiny of decision process (transparency)
- Rigorous regulatory regime (accountability)
- Unguaranteed risk capital (risk transfer)

4 An *Effective* Statutory Infrastructure Authority

Political reform:

- Independent statutory body needed for infrastructure decisions
- Decision making power
- Power to say “No”
- Power to allocate funds
- Stable revenue stream



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4 Improving Planning and Delivery

Project Governance Reforms

- **Transparency** is critical
- **Standardisation** of contract forms
- PPP guidelines must include **governance**
- PPP terms too long (UK: up to 20 years; Australia 30+ years?)
- More smaller projects?
- Simpler contract types? (D&C, conventional, not Alliance, PPP)

4 Improving Planning and Delivery

Planning and Project Assessment Reforms

- Need **up to date** models and data –funding needed
- Future **corridors** must be **preserved** in land use planning
- Realistic project assessment:
 - Guidelines should match international practice
 - Realistic discount rates – 4% not 7%
 - BCR **hurdle rate** of 1.5+ (cost risk, demand risk)
 - Guidelines road based; PT parameters deficient
 - All business cases should be made public when funded

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