

Icon Value, would we build it now? Ex-ante, mid-term and ex-post cost benefit analysis of the Sydney Opera House and Sydney Harbor Bridge.

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Overview

The Sydney Opera House and Sydney Harbor Bridge are internationally recognised Australian icons, which are televised to billions around the world each New Year eve bathed in fireworks. Both have achieved the status of “priceless national treasures” and the Opera House was recently valued at \$4.6 billion and estimated to contribute \$775 million to the Australian economy each year. Yet their current icon status was not given an explicit economic value prior, during and immediately after their construction. Both had long gestations, were mired in controversy, strained state finances, generated major political turmoil and the Opera House is oft quoted as a landmark not only for architectural achievement but also budget blowouts and poor project management. It is likely that the standard economist’s tools of Cost Benefit Analysis, as embodied in NSW Treasury economic evaluation guidelines for major infrastructure, would have rejected both structures in their current form, favoring something altogether different and less iconic.

This paper looks at the controversial history of development, construction and initial use of the Sydney Opera House (SOH) and Sydney Harbor Bridge (SHB) through the lens of CBA before, during and after their construction. It assesses Sydney’s two most famous megaprojects against Australian and international comparators and considers lessons for the application of economic evaluation tools for modern megaprojects. An attempt is made to reconstruct formal CBA measures for both the SOH and SHB at different time points and assess the subsidies and implied social discount rates these necessitate. Using a range of historical, state, national and international comparisons, the paper includes perspectives on:

- Icons Status – ratings of the SOH and SHB in national and international measures and listings, including World Heritage Status.
- Icons Peers – comparisons with international and Australian structures – including monuments (Eiffel Tower, Big Ben, Statue of Liberty, Washington Monument, Christ the Redeemer), bridges (notably the Golden Gate, London and Brooklyn Bridges), civic buildings (The Capital Building, the Palace of Westminster, Parliament House Canberra) and Centers for the Arts (La Scala and European Opera Houses, the Kennedy Center, the Guggenheim Museum Bilbao).
- Sydney’s Older Icons– experiences with the NSW’s previous megaprojects the Sydney Town Hall, Queen Victoria Building, Martin Place GPO, St Mary’s Cathedral and the Con).
- Bridges and tunnel issues – specific considerations and experiences relevant for the SHB.
- Opera Houses and Performing Arts Centers issues - specific considerations and experiences relevant for the SOH.
- Developments in the history and understanding of economic evaluation of megaprojects in the timelines of the SOH and SHB.
- Funding the dream – the financial burden on NSW citizens and the role of State Lotteries.
- Forecasting – role of projections, uncertainty and risk in assessments of usage.
- Macro economic impacts – the “Iron Lung” , economic stimulation, trade, employment, inflationary pressure and government fiscal consequences for the SOH and SHB.
- CBA analysis of the SOH – with time points at the 1955 design competition, 1966 Utzon leaves, 1973 opening, 1988 Bicentennial, 2016 current.
- CBA analysis of the SHB – 1900 first design competition, 1924 second design competition and construction, 1932 opening, 1988 Harbour Tunnel construction, 2016 current.

- Possible supplements and alternatives to economic evaluation guidelines for modern megaprojects based on the SHB and SOH experience.

Methods

The analysis makes use of historical sources of forecast and actual expenditure and usage measured at key points in the timelines for the SOH and SHB. Estimate and actual usage numbers are compared and used across comparisons. Reasonable alternative options to the SOH and SHB for use in CBA are developed based on an assessment of second best options considered at the time, current best practice and peer international icons. NSW Treasury guidelines are used as the starting basis for economic evaluations.

Results

Results are presented as cost benefit ratios, implied discount rates and breakeven point estimates for each CBA time point. Extensive cost, time and usage comparison data is presented for comparator megastructures.

Conclusions

The paper concludes that the issues underlying the decisions around the SOH and SHB are more rich and complex than is generally recognised and provided for in standard Cost Benefit Analysis. However, rigorous economic evaluation can still inform and improve decision-making about megaprojects. Recognising the limitations of analysis and the need for judgment calls within a megaproject decision needs to be accepted as part of the decision making process. Based on exploring the economic experience of Sydney's iconic harbor twins the paper suggests policies and approaches to explore to improve future decision making around megaprojects.

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