APPENDIX C

Impact of economic regulation on airport investment incentives

RESPONSE TO STAKEHOLDER SUBMISSIONS TO THE PRODUCTIVITY COMMISSIONS' INQUIRY INTO AIRPORT REGULATION

A common contention running through many of the airport submissions, to the Productivity Commission's (PC) Issues Paper is that continued investment in airports would be at risk if the current light-handed airport regulatory regime was replaced by more substantive economic regulation. We consider this argument to be simplistic and without evidential backing.

First, under current arrangements it cannot be presumed that airports are investing the right amount on the right things. Airports are monopolies that face many incentives to invest inefficiently.

Second, significant investment can, and is, delivered under effective regulatory regimes. Experience has shown that carefully designed regulatory regimes can and do provide appropriated incentives for investment whilst protecting against the misuse of market power. It is the specifics, rather than the existence of a regulatory regime, that affects investment.

Dismissing the case for regulation based on the possibility it might impact on investment is like throwing the baby out with the bathwater.

Unregulated monopolies will invest inefficiently

Under current arrangements it cannot be presumed that airports face incentives to invest efficiently. The literature in fact suggests to the extent an airport has market power it faces several incentives that reduce the efficiency of investment.

- It may have an **incentive to underinvest** as this would allow the service provider to increase profitability by justifying and charging scarcity rents. As noted above, this reduces consumer surplus and results in welfare loss for society[1].
- It may have an **incentive to undertake inefficient investment** by spending resources to obtain or protect a monopoly position ("rent seeking" behaviour).[2]
- It may **not chase productive efficiencies** that minimise its costs (or lead a 'quiet life'). A lack of competitive pressure may reduce the incentive for the firm to look for way to minimise costs by adopting cost-saving or innovative technologies.[3]

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1 There is a body of literature on the risk that monopolies will defer investment or under invest in capacity expansions. Dobbs (2004) found that firms with monopoly power who are able to control the scale of their investments will under-invest and will wait too long before adding to such investment. Consequently, prices to final customers are always higher than in competitive markets. Dobbs notes that under inelastic demand, the level of under investment can be substantial. In the airport sector, Zhang and Zhang (2003) showed that a profit-maximising airport is less inclined towards capacity expansions than a welfare maximising airport. (sources: Dobbs (2004), Intertemporal Price Cap Regulation under Uncertainty, The Economic Journal Vol. 114, No. 495 (2004) 421-440; and Zhang and Zhang (2003), Airport charges and capacity expansion: effects of concessions and privatization, Journal of Urban Economics 53 (2003) 54-75, at. 65.)

2 See for example Joskow, Paul (2006) Regulation of natural monopolies, A. Mitchell Polinsky & Steven Shavell (eds), Handbook of Law and Economics

3 See discussion in PC, 2002, *Price Regulation of Airport Services*, Inquiry Report, p84

Regulatory regimes can deliver a high level of investment

High levels of investment can, and have, been achieved in sectors subject to effective regulatory regimes including for airports.

The AAA's submission notes that capital expenditure (per passenger) incurred at Australian airports is broadly consistent with peers[4]. In other words, Australian airports have been investing to a similar degree as other international airports on a per passenger basis. These international airports are under different, and often heavier handed regulatory arrangements and have equally been investing to keep up with growing demand. This implies the presence of a regulatory regime does not necessarily act as a barrier to investment. The level of investment that has taken place at Heathrow (see Box 1: and Changi, which are subject to price and revenue caps respectively, are good examples of this.

[4] AAA Submission to the Productivity Commission, 2018 Inquiry into the Economic Regulation of Airports, p 61 (source: https://www.pc.gov.au/__data/assets/pdf_file/0019/231427/sub050-airports.pdf). Based on benchmarking undertaken by InterVISTAS which shows Sydney Airport's 5-year average of capital expenditure per passenger is mostly below its comparators, Adelaide and Perth (to a lesser extent) are largely in line with comparators and Brisbane and Melbourne are above.

Box 1: Heathrow Airport

Heathrow Airport provides a helpful case-study of how a privately-owned airport can deliver significant investment under a form of price control.

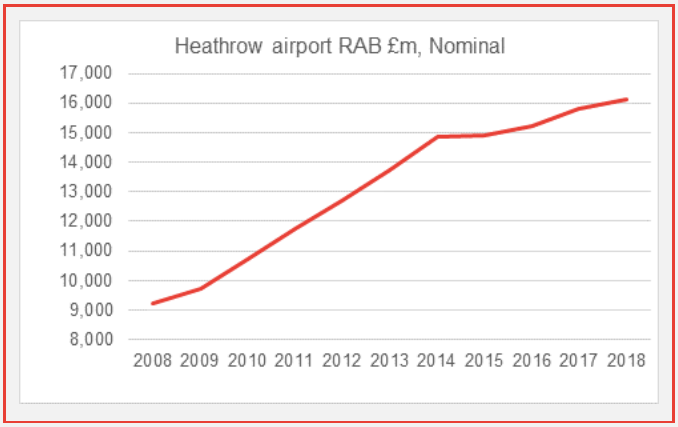
Heathrow is subject to *ex ante* price caps set to recover an efficient level of future expenditure for the airport, based on the airport's proposal and submissions of users. This requires forecasts of future demand and expenditure which can be complex. The forecasts included in the regulatory determination are informed by "constructive engagement". Under this process airports and airlines directly negotiate with each other to determine traffic forecasts, service requirements, and investment programmes.

The AAA's submission notes that since 2002 Australian airports have invested over $15 billion in infrastructure, of which around $10 billion has been in aeronautical assets[5]. And suggests that this investment is a direct result of the current light-handed airport regulatory regime. While these figures appear sizeable, as highlighted in the AAA's own submission, for all but one Australian airport, capital expenditures per passenger are higher at Heathrow Airport, which is subject to more heavy-handed regulation.

Irrespective of whether Heathrow's regulatory regime is viewed as a success, it is clear that it has enabled significant investment to occur.

Furthermore, as demonstrate in the figure below Heathrow's Regulatory asset base has grown significantly by 174% from £9,233 in 2008 to £16,108 in 2018. This implies that investment at the airport has involved major augmentations and not just capital expenditure to maintain and replace the existing assets.

Heathrow Airport's RAB growth from 2008 to 2018



Source: RAB data published by Heathrow Airport[6]

Outside of airports, there are other examples of where significant investment has taken place in regulated industries. For example, the UK's National Audit Office suggested that the features of the

5 AAA Submission to the Productivity Commission, 2018 Inquiry into the Economic Regulation of Airports (source: https://www.pc.gov.au/__data/assets/pdf_file/0019/231427/sub050-airports.pdf) Figure 4.11

6 AAA Submission to the Productivity Commission, 2018 Inquiry into the Economic Regulation of Airports (source: https://www.pc.gov.au/__data/assets/pdf_file/0019/231427/sub050-airports.pdf); Heathrow Airport RAB data (Source: https://www.heathrow.com/file_source/Company/Static/PDF/Investorcentre/RAB-Sep-2018.pdf)

UK's water industry regulatory framework specifically contributed to a favourable climate for investing (see Box 2:).

Looking closer to home, large, lumpy investment has been enabled in Australia's regulated sectors such as energy, rail infrastructure, and ports.[7] For example:

- Capital investment in the Hunter Valley and interstate networks operated by ARTC grew by an average of 23% per annum from 2007 to 2012 from what had historically been a stable level of investment.[8]
- The forecasted investment in the energy network reached historically high levels in the determinations in place in 2011. These forecasts represented real increase from the previous regulatory periods of around 82% in electricity transmission, 62% in electricity distribution and 74% in gas distribution.[9] A significant portion of this growth was likely driven by the imposition of more stringent reliability and safety requirements.

Box 2: UK Water industry

In 1989 ten publicly owned water and sewerage authorities in England and Wales were privatised, largely because of concerns about chronic under-investment and high levels of inefficiency. In concert with the privatisation an independent regulator (Ofwat) was established to set prices for these privatised businesses.

Price were determined on the basis of companies' demand and cost forecasts for a coming 5 year period. Companies' business plans were assessed for efficiency by Ofwat who ultimately determined the prices. Companies were incentivised to make efficiency savings as they could keep the difference between agreed forecasts and their actual costs subject to meeting set service level requirements.

Under the resulting, stable regulatory regime, in the six years after privatisation, water companies invested £17 billion, in improving their networks. This was almost double the level of investment that took place in the six years before privatisation where £9.3 billion was invested.[10]

In total more than £116 billion has been invested over the last 25 years. The industry has invested, on average, half of its sales revenue in new assets and companies currently invest around £80 million a week in maintaining and improving assets and services[11].

After an initial period of major investment, the resulting efficiency gains have led to relatively stable prices, notwithstanding significant ongoing investment. Ofwat considers this is largely because companies have exploited cost efficiency gains by reducing operating costs or increasing the efficiency of their contracting models. These cost savings have not led to reduced service standards as compliance with key service indicators has improved since privatisation.

7 ACCC (2013) Productivity Commissions Review of the National Access Regime, ACCC Submission to the Issues Paper, February 2013

8 Ibid

9 AER 2011 cited in ACCC (2013) Productivity Commissions Review of the National Access Regime, ACCC Submission to the Issues Paper, February 2013

10 Water Services Association of Australia and IPA, (2015) *Doing the important, as well as the urgent: Reforming the urban water sector*, November 2015

11 ibid

Analysis of productivity growth in the sector has found that the UK's water and sewerage businesses materially outperformed those in comparators sectors of the economy in the decades after privatisation and leading up to the GFC in 2008[12].

Furthermore, a 2015 review of economic regulation in the water sector led by the UK's National Audit office found that the regulatory framework specifically contributed to a favourable climate for investing. Included in its findings were that:[13]

- The regulatory framework contributed to major improvements in water quality since privatisation by providing conditions that encouraged private investment and promoted environmental and quality improvements.
- Ofwat's 2014 price review successfully encouraged companies to reflect better customer priorities in pricing and service decisions. Ofwat required water companies to demonstrate how they had engaged with their customers in developing their business plans which led to much more detailed customer research and engagement.
- The regulatory framework has helped to establish a favourable climate for financing, benefiting both companies and consumers.

The effect of regulation on investment is a function of the specifics of the regime

Concerns around the impact of regulation on investment are nuanced. This is because the level and efficiency of investment undertaken by a regulated monopoly will depend very heavily on the specific nature of the regulatory framework it is subject to and how this is governed and implemented.[14]

The economic literature tends to focus on the consequences for investment that can arise from:

- **Regulatory discretion** — A regime that give a regulator significant discretion can create regulatory uncertainty which can increase the cost of financing and therefore investment costs.
- **The form of the control and other regime specific features** — For example, overinvestment or gold plating can arise under regimes where providers are able to recover a guaranteed return on any capital expenditure made.[15] Conversely if the nature of the regime leads firms to expect prices will be set too low (such that they will not recover costs and make an appropriate return) this can

12 Frontier Economics (2017) *Productivity improvements in the water and sewerage industry in England, scince privatisation*, Final Report for Water UK, 29 September 2017

13 National, Audit Office (2015), *The economic regulation of the water sector,* 14 October, 2015

14 For support for the view that it is the details of the regulatory specification that matter in terms of the effect on risk see Alexander et al (1996), *Regulatory Structure and Risk and Infrastructure Firms e an International Comparison.* The World Bank (Policy Research Working Paper, December; Alexander et al (2000), *A few things transport regulators should know about risk and the cost of capital*. Util. Policy 9, 1e13; Gaggero, A.A., (2007), *Regulatory risk in the utilities industry: an empirical study of the English-speaking countries*. Util. Policy 15, 191e20; Grayburn, et al. (2002) *Report for the National Audit Office by NERA on Regulatory Risk*. Appendix 4. Published in National Audit Office, "Pipes and Wires", 10 April; Stern, J., (2013), *The Role of the Regulatory Asset Base as an Instrument of Regulatory Commitmen*t. CCRP Working Paper No. 22, March. Centre for Competition and Regulatory policy (CCRP).

15 This creates an incentive for the business to increase the value of the asset base to which the regulated rate of return is applied (by overinvesting or gold plating), and thereby increase the revenue that it may earn

lead to a lack of new investment. Regulation can also potentially introduce imitations on a firm's ability to respond to external shocks[16].

- **Regulatory error from information asymmetry** — information constraints and limitations on the regulator's ability to foresee all potential eventualities, mean their decisions may distort infrastructure investment incentives. For example, under *ex ante* price regulation the regulator may be required to forecast demand and estimate an efficient level of future expenditure to determine a revenue requirement and price path that will enable recovery of this. This can be complex and result in setting a revenue requirement that is either too high or too low (vis-à-vis the outcomes that would arise in a competitive market) such that investment is either greater or less than the efficient level.

What can be concluded from the above is that the impact of regulation on investment is primarily driven by the specifics rather than the existence of a regulatory regime.

Furthermore, well designed regulation can reduce the risk of any unintended impacts on investment. The ACCC has noted that the ways in which regulation can affect investment are now well-known and well-understood. And consequently, regulators, have and are, adapting their regulatory approaches to remove and reduce these risks[17]

For example, information asymmetry may be less of a concern under a Final Offer Arbitration framework which encourages airports and their users to reach an agreement on new investment. This would reduce the potential for regulatory error as direct intervention would be limited to extreme cases where a party feels that it would be substantially better off by going to arbitration. In these cases, a robust arbitration framework, with clear objectives and obligations, will mitigate the risk that arbitrators make decisions that compromise efficient airport investment, and encourage confidence in the framework (i.e. reduce regulatory risk).

16 For example, under a price caps a regulated firm might be prevented from responding to sudden unexpected changes in the demand for services or uncontrollable cost increases which can increase its risk and therefore the cost of investment (see Box 3).

17 https://www.pc.gov.au/inquiries/completed/access-regime/submissions/submissions-test/submission-counter/sub016-access-regime.pdf

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