Competition regulation of infrastructure: getting the balance right *

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Infrastructure services such as energy, water, transport and communications systems, play a pivotal role in Australia's economic and social development. The efficient provision and use of such economic infrastructure — its location, availability, quality and pricing — underpins economic growth and living standards.

Its importance is conveyed by the expression *essential* infrastructure. This has two dimensions. At the household level, while such services account for only some 5 per cent of consumer spending, they loom much larger in the quality of life of the community – vividly illustrated whenever there are power blackouts or scares over the quality of drinking water.

Infrastructure also forms the 'platform' upon which most businesses depend to produce and market their goods and services. Indeed, more than two-thirds of the total demand for infrastructure services comes from Australian businesses.

Infrastructure places major demands on the nation's capital resources, accounting for about one-fifth of Australia's total capital stock. Given that there are no alternative uses for most infrastructure once it is in place, inefficiencies in infrastructure investment can impose substantial costs on the community.

A significant determinant of the performance of Australia's infrastructure is the regulatory structure within which it operates. Governments have radically transformed regulatory, governance and ownership arrangements for such infrastructure over the past decade and a half. This has been part of a broader effort by Australian governments to improve the performance of the economy through reforms in financial, labour and product markets.

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There was a pressing need for infrastructure reform

Demands for cheaper and better quality infrastructure services were precipitated by increased competitive pressures on Australian industries as barriers to foreign imports and investment declined. Firms facing new external pressures realised that lack of efficiency within power, freight and communications industries were inflating their costs and handicapping their competitiveness.

A number of reviews at State and Commonwealth levels, as well as a series of international benchmarking studies, confirmed the suspicions of downstream businesses.

Poor performance of our infrastructure was manifest in excessive and misplaced capital investment, substantial overmanning, problems of timeliness, quality and lack of innovation in service delivery, poor financial returns and a mounting debt burden for taxpayers. Prices for some services (for example, telecommunications, electricity and rail freight) bore little relation to those which would apply if efficient production methods were used. At the same time, prices for some other infrastructure services (for example, irrigation water and urban rail services) fell well short of costs. Complicating the story were a mish-mash of opaque cross-subsidies which typically favoured households at the expense of business.

A recurring theme of official reviews was that because many government business enterprises were statutory monopolies — with competition expressly prohibited or suppressed — they lacked incentives to be cost conscious and innovative. Managers had limited operational flexibility, and unclear and conflicting directions, as governments pursued efficiency and social objectives in ways which cut across the achievement of both. Government ownership and restrictions on competition had long been politically favoured ways of providing subsidised access to infrastructure for particular groups. As the reviews found, however, attempting to achieve social objectives by those means had come at the expense of productivity, cost and innovative service delivery.

While there were diverse approaches to reform in the 1990s, certain features stand out:

- perhaps the most fundamental was the introduction of competition to improve incentives for efficient infrastructure investment and use, including through the structural separation of contestable activities (such as electricity generation);
- social and regional concerns were addressed more directly through subsidies financed out of general taxation, rather than inefficient cross-subsidies; and

- those enterprises which remained in government hands were required to be more commercial and accountable, and new governance arrangements reduced the scope for political and bureaucratic interference in their day-to-day operations.

With the agreement to establish a National Competition Policy in April 1995 — following the Review chaired by Fred Hilmer — all Australian governments moved to implement a more coordinated and systematic approach to developing an open, integrated domestic market for goods and services.

The gains from reform have been substantial

That was only seven years ago. Much has happened in the relatively short time since then. Indeed, what we have witnessed has been almost a revolution in public policy, and one that has embraced all Australian jurisdictions (a revolutionary development in itself). The very magnitude and speed of the changes, however, have contributed to misunderstandings about the process and a backlash from sections of the community who perceive themselves to be losers.

In reality, while there have been some losers (at least in the short term) the benefits from NCP have been more pervasive than many people appreciate.

At the most general level, Australia has experienced a resurgence in productivity growth over the past decade which is impossible to explain other than as the outcome of microeconomic reform. That productivity surge has in turn flowed through to higher income growth. Without it, Australian households' annual incomes would on average have been around $7,000 lower than they were at the end of the 1990s.

The increased competitive pressures on firms to raise their productivity also forced them to share the gains with their workers and with their customers through lower prices.

A study of trends over the past decade, shortly to be released by the Commission, shows that, notwithstanding recent re-adjustments, prices paid by households for services such as electricity and telecommunications have fallen significantly. Real electricity prices were lower in 2000-01 than they were in 1990-91 in most capital cities and the price of telecommunications services in Australia fell by more than 20 per cent in the same period. Less obvious but real benefits have also come from lower prices to business for electricity, rail freight, port charges and telecommunications.

Technological change has clearly played a role in a number of cases. However, other recent research by the Commission on the role of ICT in productivity growth shows that the uptake and effective use of new technology is itself directly related to the enhanced competitive incentives and organisational flexibility engendered by microeconomic reforms.

Not all infrastructure prices have fallen. And this is intentionally so. Australia's scarce water resources have long been underpriced and this needed urgent change to promote sustainable use. Consumption-based charges and rising real prices for water have succeeded in reducing per capita consumption by approximately 17 per cent in major urban and regional areas — with significant environmental and capital savings because additional dams have not been required. Urban transport prices also increased in real terms over the past decade, but greater cost recovery has meant less burden on government budgets and taxpayers alike.

The latest assessment by the Commission also shows that these price reductions have not come at the expense of degraded service levels; that lower prices for infrastructure services have been most favourable for low income households and, contrary to popular belief, that the trends have generally been the same across metropolitan and regional Australia.

Many of the gains from reform have come from making better use of existing infrastructure assets. As costs have been pushed down, prices have been able to be reduced. But sustaining the benefits from infrastructure reform in the future also depends on regulatory structures providing appropriate incentives for new investment. Getting that balance right is the biggest challenge now facing pro-competition regulation.

What *is* pro-competition regulation?

The policy problem is that the potential for substantial market power 'comes with the territory' for certain major infrastructure services, such as telecommunications or airports. Left unchecked, incumbents operating in previously legislated monopolies or firms with natural monopoly characteristics can have incentives to seek high profits or operate in ways which may be inconsistent with the interests of the community. Indeed, that was part of the reason for such infrastructure being in government hands in the first place.

National competition policy sought to address this infrastructural problem by:

- enhancing competitive disciplines on government business enterprises through the application of competitive neutrality principles and structural reform of public monopolies;

- establishing in each jurisdiction arrangements for oversight of prices charged by utilities and other corporations with monopoly power; and
- establishing rules to enable potential competitors to gain access to the services of significant monopoly infrastructure.

There were also specific arrangements for sectors such as telecommunications, where the initial lack of competition and the fast pace of change meant that the Government was reluctant to rely on general trade practices law.

Given the 'experimental' nature of some of these reforms, and the potential for them to generate costs as well as benefits, it was envisaged at the outset that there would need to be independent reviews of the new regulatory arrangements after a few years. A recent suite of Productivity Commission inquiries — encompassing reviews of the National Access Regime, telecommunications competition regulation, airport services pricing, rail reform and the Prices Surveillance Act — has provided the opportunity for an independent and public stocktake of key elements of the pro-competition regulation governing Australia's economic infrastructure.

The Commission's final reports on the national access regime, airport services pricing and the Prices Surveillance Act have yet to be released by the Government — so there are limits on what I can say today. But it should come as no surprise that the Commission found that there were legitimate grounds for maintaining regulatory oversight in the areas it analysed. Much of the current regulatory framework was judged to be broadly appropriate. Nevertheless, the Commission found that significant modifications were needed to reduce the risk of regulatory error and to ensure a pay-off to the community in the long-term.

Competition is a *means*, not an end in itself

National competition policy and related policies were based on an understanding by all governments that, by and large, competition leads to greater productivity, lower costs and improved service, and so eventually to higher incomes and standards of living. Competition forces firms to get their costs down and to pass the savings on to their customers. And the constant threat of losing market share to competitors helps to ensure that firms, whether large or small, are responsive to consumer needs.

However, as the Hilmer Review noted in the report which led to the NCP:

> Competition policy is not about the pursuit of competition per se. Rather, it seeks to facilitate effective competition to promote efficiency and economic growth while accommodating situations where competition does not achieve efficiency or conflicts with other social objectives. These accommodations are reflected in the content and

> breadth of application of pro-competitive policies, as well as the sanctioning of anti-competitive arrangements on public benefit grounds. (Hilmer et al. 1993, p. xvi)

Governments have plainly recognised that there are circumstances in which restraints on competition can be justified in the community's interest. Indeed, there can really be no such thing as completely unfettered competition in any area of economic life. As on the sports field, market competition needs to occur within a framework of rules, obligations and rights which constrain the behaviour of the players. The question is really about the nature and degree of any constraints and how they affect performance.

In some situations, competition may need to be more 'fettered' than in others, to address social objectives such as equity of access or quality standards, or to overcome market failures, including environmental spillovers and information problems. But restricting the potential entry of (qualified) players will rarely be the best way of meeting such concerns. Indeed, in the case of natural monopoly — a defining feature of some key infrastructure services — government has regulated to *facilitate* competition.

The 'natural monopoly' problem

Where total market demand can be supplied at lowest cost by a single provider, because of great economies of scale or scope, there is likely to be room for only one firm to survive and this can be the most efficient outcome. This is typically the situation for some transmission and distribution networks. To achieve effective competition in markets that rely on that infrastructure, however, the shared use of such 'bottleneck' facilities at cost-reflective prices will generally be necessary.

Vertically integrated infrastructure operators providing upstream or downstream services, have particular opportunities to earn monopoly profits from those services by denying access or making the terms and conditions so unattractive that competitors are disadvantaged. In telecommunications, for example, Telstra owns the local loop and provides retail services to customers. As a result, Telstra has an incentive to restrict the development of competitors' services using the local loop where this would improve its overall profitability. In contrast, owners of essential facilities without upstream or downstream activities — such as airports — have incentives to optimise use of their facilities by others. But they still might be expected to use market power to extract excessive prices and make high profits where market circumstances allow.

While natural monopoly is rightly the focus of pro-competition regulation, market structures in transition from government statutory monopoly can also require regulation to ensure that evolving competition is not stifled by powerful incumbents.

However, when developing regulatory regimes, the ‘problem’ of market power should not be overstated, for at least five reasons:

- First, the availability of substitutes limits the exercise of market power. For example, rail track providers may be sole suppliers but, for most freight or other services, they face intense competition from other transport modes, notably road.
- Second, technological advances can also increase competitive pressures. Microwave and satellite technologies are increasingly threatening the dominance of telecommunications incumbents reliant on poles and cables.
- Third, where barriers to entry are not insurmountable, even sole suppliers will find it difficult to sustain high prices and excess profits. For example, consumer choice of electricity retailer and telephone number portability have lowered the barriers to new providers.
- Fourth, there will not always be an incentive or the scope to exploit market power even where it appears to exist. With more than four times as much operating profit earned from non-aeronautical activities such as retailing and car parking, the owners of the major airports have incentives to moderate their pricing of aeronautical services so as not to reduce passenger throughput and undermine total airport profitability.
- Fifth, any countervailing power of major users can also be a constraint on monopoly behaviour. Taking the example of airports again, attempts to exercise market power can expect to be resisted by airlines, who have some commercial clout of their own, (especially in dealing with smaller airports reliant on holiday markets).

These factors caution against considering market power in a static context, or one which doesn’t account for market reactions to that power being exercised. An incumbent’s excess profits will generally be a magnet for other profit seekers. This can take the form of attempted entry to the same business activity, or the invention of and development of substitutes.

Even a natural monopolist can in time face competition from alternative ways of meeting the needs of its customers. For example, pay TV networks and, to some extent, mobile and satellite services, now carry both internet and telephone services that were once the preserve of the copper-based local loop. And while most mobile calls currently terminate on the fixed network, that may change.

Even where monopoly power is exercised, it may not have significant negative impacts on efficiency. In particular, to the extent that monopolists can structure their prices to 'soak the rich' or hit hardest their least price-sensitive customers, there may be little distortion in supply or consumption patterns.

Of course, there may be distributional consequences, but whether these warrant concern is not always straightforward. For example, the losers from higher than necessary airport charges would potentially be passengers paying higher fares and airline shareholders earning lower returns. But the diversity of share ownership in airlines and airports — directly or indirectly through large superannuation funds — and the mix of foreigners and Australian residents amongst shareholders and passengers, mean that any distributional effects may be largely 'neutralised'.

It follows that the existence *and* impacts of market power need to be tested carefully and reviewed periodically so that regulation can be rescinded where it is no longer likely to provide efficiency benefits.

Investment matters too

Access and price regulation have the potential to improve efficiency where natural monopoly is a problem and/or markets are in transition. However, the regulatory challenge is to ensure that prices are set neither too high nor too low. There are dangers both ways. Given the legacy of government ownership and control of vertically integrated monopolies, it is not surprising that much of the initial regulatory focus has been on reducing prices. This has been to the direct benefit of consumers and using industries and has led to market innovations and expanded choice.

However, the major risk associated with the regulation of essential infrastructure is that setting prices too low could deter new investment in the facilities themselves. At a conceptual level it is clear that access and price regulation involve a significant intrusion into the property rights of facility owners and can distort their investment behaviour. While available evidence of adverse impacts on past investment is largely anecdotal and difficult to verify, the potential risks of adverse consequences from regulatory action appear to be looming larger. Some of these are documented in the Commission's final report on the National Access Regime.

There is a potential tension between the efficient use of existing facilities and incentives to build new ones. Once investments have been made, the actual costs of running transmission and distribution networks are relatively low. With capital effectively having no alternative uses, there is a theoretical case — at least from a short-term perspective — in setting prices to recover only marginal or operating costs. However, this would deny the firm the opportunity to recover its fixed costs. While the service might continue to be provided for the asset's economic life (though possibly with inadequate maintenance), such a pricing policy would destroy incentives for any replacement investment.

No firm, including existing facility owners, will commit to major new capital outlays without the expectation of profits commensurate with the commercial risks involved. As the old proverb has it, there is “many a slip twixt cup and lip”. Realised returns can be affected by unforseen delays and costs during the construction phase, unanticipated changes in market demand, uncertainty about how an untried technology will perform or the possible emergence of a superior competing technology. So even without regulatory risk, the extent of profitability cannot be assured. For investments which are particularly risky, or that have the expectation of only normal returns allowing for such risk, the potential for regulatory action to deter or even stop new investment is heightened.

In the case of access regulation, there may also be perverse incentives for investors to build smaller facilities than would be sociably desirable so as to ensure that there is little spare capacity beyond their immediate requirements, thereby removing any threat that they would be required to grant access at prices they considered too low.

Another disadvantage of unduly low regulated prices is that the investment required to maintain, extend or replace existing infrastructure may be delayed. This can result in a deterioration in service through breakdowns and increasing congestion. The effects of this may go unnoticed for some years, until a crisis point is reached. Two illustrations from overseas are the UK rail services failures and the Californian energy crisis.

In the long term, consumers and business users are likely to be worse off with inadequate essential infrastructure than if appropriate services are provided at higher prices.

Prices need to be at least sufficient to cover the long-run costs of facility operators, including an adequate return for the risk involved. But prices should not be set so far above costs as to detract from the efficient use of services or to inhibit investment and innovation in related markets. This is a particular risk in markets such as new value-adding telecommunication services, where investors are already grappling with rapid and unpredictable technological change and demand for the platform service is sensitive to price. There is also the possibility that high regulated prices could lead to the inefficient duplication of facilities where users have no option but to build their own.

It follows that there needs to be a balance between the short-term gains for users and consumers in having low prices, and the community’s long-term welfare, which also requires the efficient timing and scale of investment. The Commission has found that the regulatory framework needs to provide clearer signals about how this balance is best achieved.

Regulators need statutory guidance

Life wasn't meant to be easy for competition regulators. The tasks they face are complex and require considerable information if regulators are to consistently improve on market outcomes. Firms which are subject to regulation typically know more about their operations and markets than the regulators could ever be expected to know. When technology and market demands are changing rapidly — which is increasingly the case — the difficulties for regulators are compounded.

Ultimately, a large element of judgement is unavoidable in deciding whether and how to intervene, and this raises the prospect of regulatory error. As already argued, where long-lived investments in essential infrastructure are involved, the costs of regulatory error can be substantial. In addition, regulatory interventions risk dampening incentives for cost saving, innovation and entrepreneurship in regulated firms, or those depending on them.

These informational difficulties are an inherent (what might be called an 'incentive neutral') source of regulatory error. But regulatory error can also have more *systemic* origins, reflecting the susceptibility of regulators to various forms of 'capture'. Their significance will depend on how regulatory frameworks are designed, including the independence and degree of discretion afforded regulators and how their objectives are specified and their performance monitored.

As is well known, the traditional concern based on the American experience was of capture of regulatory agencies by industry incumbents, who have more incentive than anyone else to find ways of influencing how regulators interpret the rules in their particular cases. But, depending on the institutional settings, quite different forms of influence can operate. These include favouring the interests of current consumers (and electoral constituents) over the interests of future consumers; which could lead to new entrants being favoured over incumbents.

Regulators may also feel constrained by the precedents set by their own past decisions. Apart from a natural reluctance to admit error (that we all share!) the regulator must consider the potential for subsequent litigation where past errors have imposed substantial costs on particular businesses. To avoid this risk any correction in regulatory behaviour is likely to be incremental and defended in terms of new circumstances.

Finally, regulators may have a risk-averse attitude to the possibility of firms earning high profits because these may be associated, in the public mind, with failure by the regulator to control the excesses of market power.

Regulatory discretion cannot be eliminated, and indeed, some discretion is desirable. However, to reduce the risk of regulatory error, statutes need to be clear about three things: the objectives of regulation; the behaviour at which intervention should be targeted, and the principles governing the type of intervention.

These basic requirements are not often met. For example, the Productivity Commission found that the National Access Regime was deficient in all three respects. It proposed the inclusion of an objects clause and pricing principles in the national regime and a change to the regime's 'declaration' criteria to reduce the possibility that services will be subjected to access arrangements without the prospect of a significant economic payoff.

Given the manifold uncertainties and information difficulties, there are limits to what regulators can be expected to achieve. Rather than aiming for an ideal but unattainable outcome, the public policy goal should be a set of regulatory arrangements that will improve efficiency through time, while minimising the scope for regulatory errors. A framework is needed in which regulators are encouraged to intervene only when significant improvements in efficiency are in prospect and not to be too ambitious in fine tuning the prices they regulate.

A number of the Productivity Commission's general proposals, which mainly apply to existing assets, will also help facilitate efficient investment in essential infrastructure services. However, the Commission has come to the view that special additional provisions will also be needed if new investment is not to suffer from an inherent regulatory tendency to truncate the up-side potential of a proposed investment, while allowing investors to bear all the downside risks.

Recent references by regulators to average rates of return earned by companies on the stock exchange underline this problem. For example, if no project were allowed to earn more than the ASX average, then any proposed project with an above-average specific risk profile — requiring the possibility of above-average returns — would not proceed.

The problem of regulatory truncation is an important policy issue, but determining the best approach to dealing with it is not at all straightforward. It should nevertheless become a priority for government consideration and the Commission's final report on the National Access Regime provides guidance on how it might go about it.

These and other detailed proposals in that report are highly relevant to the imminent COAG Energy Review. It would be unhelpful to good policy development in that sector if delays in publicly releasing the Commission's report meant that the Review got under way without the panel, or industry participants, having the opportunity to consider our findings.

In areas where market power appears to be a problem but the correct regulatory response is uncertain, good process is essential to determine the significance of the problem and how best to address it. For example, in its review of the Prices Surveillance Act, the Commission argued that modified inquiry and monitoring functions needed to be written into a new section of the Trade Practices Act, allowing the Prices Surveillance Act to be repealed. Rather than the regulator having the main say about what firms or industries should be subject to price oversight, the Commission argued for separate and independent public reviews of the market circumstances in such cases, including an assessment of the full range of potential policy responses. The current inquiry by the Productivity Commission into harbour towage, currently declared under the Prices Surveillance Act, is a good example of this approach at work.

Once reviews of appropriate responses to market power problems have been completed and governments have decided their broad approach, the details of implementation can benefit from consultations with affected parties. Such consultations can test the practicalities of proposed regulation and alert people to its implications — thereby reducing uncertainty and the potential for subsequent disputation. The imminent sale of Sydney Airport is a case in point. Whether or not the Government adopts the Commission's preferred option for future airport price regulation, bidders for Sydney Airport should have a clear picture of the regulatory framework for that facility, so that expected airport charges can be factored adequately into the sale price.

Summing up

The broad-based microeconomic reforms of the past decade and a half have sharpened international and domestic competition, and thereby reduced the number of markets in Australia where governments need to intervene to address the adverse consequences of market power.

Given their potential costs and distortions, regulatory interventions such as access regimes and other price controls should be measures of last resort, focused on those activities with demonstrable monopoly power. These now largely involve bottleneck infrastructure services with natural monopoly characteristics. The general provisions of the Trade Practices Act remain as a safeguard for abuses of market power in other circumstances.

The Commission’s recent inquiries have revealed a need to re-balance the emphasis in infrastructure regulation away from achieving immediate gains for users and consumers from existing assets — much of them government owned or previously government owned — to a regulatory framework that will also facilitate efficient investment in new facilities. In this way, pro-competition regulation is more likely to ensure that Australia has modern infrastructure which is developed and used efficiently, with long-term benefits to the Australian community.