

Inquiry into Public Infrastructure
Productivity Commission
LB2 Collins Street East
MELBOURNE VIC 8003

PUBLIC INFRASTRUCTURE PRICING

The purpose of this note is to bring to the attention of the Commission a publication by the Commonwealth Treasury (in which I was involved while at the Treasury) that may assist the Commission in finalising its report into public infrastructure. The Treasury publication may, in particular, be of interest in relation to infrastructure pricing.

The Treasury publication is: *Financial Monitoring of Government Business Enterprises: An Economic Framework*, Treasury Economic Paper 14, AGPS, 1990 ('TEP 14').

Chapter 4 (Pricing of Goods and Services) of TEP 14 presents a practical pricing strategy for goods and services provided by business units of government businesses. These goods and services may be provided directly by government, indirectly via enterprises owned and controlled by government or provided by the private sector under government contract which includes pricing controls. Funding of associated capital investment may include debt or government/private equity. The goods and services are not pure public goods (joint consumption unable to be excluded by pricing).

The business units subject to TEP 14 discussion typically have some degree of legislated market presence and assets (invariably infrastructure assets) that are lumpy by nature. The pricing strategy in TEP 14 seeks to simulate pricing that would be achieved were the business units subject to a fully competitive environment. That is in line with the Commission's draft report that sees direct user charges as providing "an incentive for efficient provision and use of infrastructure". Achieving such efficiencies obviously depends on how the infrastructure prices are set.

Consistent with the Commission's draft report, TEP 14's pricing strategy is underpinned by a business unit's short-run marginal cost (including 'congestion' costs as current capacity is reached) – not long-run marginal costs. In contrast, often in Australia, infrastructure pricing is set on the basis of long-run rates of return, resulting in capacity expansion automatically leading to price increases. Thus, the pricing strategy in TEP 14 ensures the crucial separation of infrastructure pricing from associated long-run marginal costs or rates of return:

- prices set on the basis of short-run demand and supply considerations (or pricing to utilise all of currently available capacity); and
- annual returns from such pricing compared to long-run target rates of return then determine whether capacity needs to be expanded or reduced.

This strategy recognises that efficient provision and use of infrastructure require, first, pricing set to maximise utilisation of available capacity and, secondly, capacity set in response to short-run returns compared to long-run rate of return target. As noted, this

strategy seeks to emulate pricing and investment decisions in a competitive market. Using bread to illustrate the parallel, say at current bread prices, capacity meets demand and associated profits keep the bread makers in business. At current capacity, changes in the demand for bread would be expected to immediately affect prices. These price changes would affect profits and changes in profit would be a signal to bread-makers (including potential new entrants) to increase or decrease bread-making capacity.

The infrastructure pricing strategy in TEP 14 is summarised in the following two paragraphs from page 38.

*“In short, global target rates of return cannot be regarded simply as rates of return to be achieved through price adjustments, or even to be exceeded if possible. With pricing strategies designed to allocate current capacity most efficiently, sustained returns of individual services in excess of targets – which reflect the market risk associated with those services – suggest that an increase in capacity investment is economically justified. Sustained returns less than the targets point to a contraction in capacity being required. *Rather than being a passive minimum benchmark, the targets are central to investment decision making and enable the usually difficult question of whether the level of public infrastructure is adequate to be answered.*”*

Regardless of the approach taken to determine the global target rate of return for each enterprise, the pricing of enterprise services should ideally be independent of the target and based on efficient pricing principles designed to make the best use of current capacity of each individual business unit. Pricing services so that the use of available capacity is, where possible, maximised during peak as well as slack periods accords with these principles and with private sector practice.”

Setting prices to maximise utilisation of available capacity would see consequent price variations over cycles that varied in length depending on the infrastructure involved. For electricity generation/distribution, government-run bus services, toll roads or parking spaces, for example, daily cycles through peak and slack periods would be expected. Where possible, capacity on stream would also be varied during the day (bus numbers and size of buses in the case of bus services). With water assets, pricing would be expected to vary on an annual seasonal basis with changing seasonal demand and rainfall.

Water pricing brings with it the interesting complication that water supply depends not only on dam capacity but also on rainfall (including expected rainfall). Say a government's water authority achieves annual returns matching the government-imposed rate of return target at a time when water supply (dam capacity and rainfall) and water demand are balanced and rainfall is at 'normal' levels. In a subsequent drought, efficient pricing would see prices rising significantly to reduce demand to available supply and water allocated to those who value it most (ignoring the practical inevitability of some temporary restrictions and allocations of cheap water to households). Resentment over green lawns would give way to acceptance that some put high enough value on having them – as with long showers, vegetable patches and even clean patio areas. The water authority's annual profit and rate of return would likely increase – the authority's commercial signal that water supply needs to be increased as much as possible by alternative water supply measures (like the daily

changes in bus numbers or sizes). Only in times of 'normal' rainfall would this be a signal for increased dam capacity.

Flexible water pricing would ideally be accompanied by user-friendly water meters so the cost of watering a lawn in a particular season is known in advance – and by user-friendly electricity meters (to bring in corresponding issues with government-controlled electricity pricing) so the cost of having a shower at a particular time of day is known in advance.

In sum, regardless of infrastructure type, increasing general demand at fixed capacity (and rainfall with water assets) would see prices increase generally (still with daily and/or seasonal variations) and some price-induced reduction in demand. The overall result would likely be increased profit and rate of return relative to required long-run return signalling the need to expand capacity. Pricing according to demand/supply considerations after the capacity change would be aimed at achieving returns consistent with the government-imposed required long-run return. In these circumstances, provision and use of infrastructure could simulate what might be expected in a fully competitive environment.

I hope TEP 14 proves of use to the Commission even at this late stage.

Wayne Mayo
5 May 2014