

Cost-Reflective Pricing

Synopsis

- In line with the 1994 COAG water reforms, the water industry sets prices to cover the full cost of service provision. This has rationalized water use and made the industry substantially more commercial in its outlook.
- There are further improvements that could be made, particularly with regard to the internalisation of externalities in price and investigation of the value of scarcity pricing in times of drought.
- There are also a number of circumstances emerging that may inhibit the industry’s ability to ensure that prices set are cost-reflective. Caution needs to be exercised to ensure that these circumstances are mitigated.

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Background

In February 1994 the Council of Australian Governments (COAG) agreed to a major package of water reforms that included, among other things, the following general objectives related to water pricing:

- (a)(i) *The adoption of pricing regimes based on the principles of consumption-based pricing, full-cost recovery and, desirably, the removal of cross-subsidies which are not consistent with efficient and effective service, use and provision. Where cross-subsidies continue to exist, they be made transparent*
- (ii) *Where service deliverers are required to provide water services to classes of customer at less than full cost, the cost of this be fully disclosed and ideally be paid to the service deliverer as a community service obligation.*

True cost-reflective pricing ensures capital and operating costs are met, including the cost of maintenance and expansion of infrastructure, and that an adequate rate of return on investment is achieved. In practice, the introduction of more cost reflective pricing has contributed to a very significant improvement in the efficiency of the Australian urban water industry, and, by making water a controllable cost for both industry and consumers, led to an important reduction in water consumption. There are, nevertheless, a number of critical issues left largely unaddressed including:

- Pricing to reflect externalities (costs or benefits which accrue to third parties, for which they are not compensated or do not pay, but which arise as a result of water use)
- Pricing to reflect water scarcity

Further structural and institutional reforms are currently being debated, spurred on in part by drought and the desire to make water service provision more contestable. As these unfold it will be important that the achievements of the past 15 years are not eroded and that pricing remains transparent, cost-reflective and economically efficient.

Issues

Role and Structure of Water Prices

True cost-reflective pricing is a critical component of efficient water management and allocation. Basic rules of economics apply; if a resource is under-priced it will be over-consumed and vice versa. Within the total economy, over- or under-investment in water affects investments in other sectors that might be more productive or produce greater social benefits.

Typically, water prices in Australia contain a fixed charge and a usage-based charge. This is considered the most economically efficient way of pricing a monopoly service where the marginal cost of providing the service is below the average cost of service provision. Such a situation arises because headworks are large indivisible capital investments. Once constructed, the marginal cost of production is low, but as capacity is taken up, there is a need for further, capital intensive investment in new source development. Unless these costs are factored into the price charged, funds for system augmentation will not be available. If there were just a single usage charge, it would be economically efficient if it reflected the marginal cost of production. However, as marginal cost may not fully cover costs of augmentation in the future, a fixed charge is also incorporated in the price. This is common among all users and does not subvert the water conservation signals expressed through the usage charge, the second component of Australia's urban water charges.

It should also be noted that there is an emerging case for scrutinising the impact of current pricing structures. Notwithstanding the earlier comment about the economic efficiency of a two-part tariff (fixed costs and consumption charges) in an industry displaying characteristics of a natural monopoly, under current pricing structures, each customer is effectively charged a different unit cost and the lower their consumption, the greater the cost per unit of water consumed.

It is also important in understanding water service charges that the cost to households of this utility compared to others such as telephone, council rates and the like is small.

Pricing Reform Priorities

Pricing reform has occurred over the past 15 years, largely as a result of the COAG water reform process. However, it cannot be said that the formula for pricing is set, or that we have a perfect model for assessing the price that should be charged. There are evident deficiencies that must be addressed. Critical among these is:

- Incorporation of externalities. Externalities arise when a third party benefits or suffers a loss from the use of water for which that party does not pay or is not compensated. For example, an angler whose catch is reduced due to discharge from a sewage treatment plant suffers a loss for which they are not

compensated, meaning that the price charged for water does not reflect the full economic cost of providing the supply. CSIRO has found that such costs may be significant. Frequently, the 'third party' is the environment, which suffers a loss as a result of over-abstraction of water or the discharge of wastewater. The Committee for Economic Development of Australia, the National Water Commission and other have called for renewed focus on incorporation of externalities in price, or their mitigation.

- Scarcity pricing. The price of most commodities reflects supply and demand conditions. This is not so with water. Instead, governments and the water industry have attempted to curb demand during times of shortage through the imposition of water restrictions. A question arises, however, as to whether setting prices to reflect scarcity would be more economically efficient than water restrictions (or perhaps both may be required).

With regard to the latter point, a recent paper by the Independent Pricing and Regulatory Tribunal in NSW reported that modelling suggested that to achieve a decrease in water consumption equivalent to that which has occurred in Sydney under Level 3 restrictions, a price increase of between 57% to 121% would be required, assuming residential and commercial/industrial consumers were both taken into account. These are significant rises and the Tribunal suggests that Sydney at least is not likely to be capacity constrained until 2028. Nevertheless, IPART also notes that the impacts of climate change are uncertain and that environmental flow requirements may be increased in future.

Notably, in some jurisdictions, regulators have introduced a two-part tariff system for usage charges that includes a premium, above the marginal cost of supply, for those residential customers with high water usage. In part, the Including Block Tariff (IBT) is an attempt to curb demand and is therefore a form of scarcity pricing. IBT is a common feature of water pricing in numerous jurisdictions across Australia for both residential and industrial customers. The extent to which the structure of blocks could be improved, or might change over time in response to scarcity, or prices overall might increase in response to scarcity requires ongoing research.

Impact on Prices of increased competition

One of the drivers of reform in the Australian urban water industry is the demand to introduce greater competition in the procurement of services and, potentially, in supply. Increased contestability raises a number of issues with regard to accountability, the regulatory framework, the maintenance of water quality and protection of public health and sustainability that are addressed elsewhere. Competition in procurement of services has grown over many years and will continue to grow in future and the water industry generally welcomes such developments as they should put downward pressure on costs. However, contestability in the provision of water supply (e.g. 3rd party access rights; sewer mining) raises a number of questions with regard to water prices, including, but not limited to:

- The way in which water supplied from alternative sources should be priced (which might become a particularly complex issue if externalities are taken into account)
- The extent to which cheaper source of supply distort the water conservation message
- The price that should be charged for access to existing infrastructure by 3rd parties.

Each of the above is demanding of research effort.

Limits to Efficiency gains

World leading efficiency gains have been achieved by the Australian water industry as a result of corporatisation – following which water companies became responsible for their own profitability – and the related withdrawal of government subsidies. There are, no doubt, further efficiency gains available within the water industry, which, if achieved, would reduce the marginal cost of supply and the average cost over time. However, while further efficiency gains may be available, the following should be considered:

- Approximately 70% of water company costs are associated with underground infrastructure and headworks (dams and associated infrastructure to collect, transport and treat water prior to its distribution via the reticulation system). The very significant efficiency gains the industry has achieved post-corporatisation have arisen substantially through the industry's focus on strategic asset management, a field in which Australia is a world leader. Simply put, strategic asset management directs expenditure to critical assets taking into account their vulnerability. However, there are limits to the efficiency gains that can be made and under-pricing of water has the potential to put undue cost pressure on the industry. This could lead to a reduction in the investment that can be made in water. Infrastructure maintenance and upgrading to the detriment of the consumer. Furthermore, customer and regulator expectations for service quality are increasing (e.g. reduction in service outage time; improvements in water quality) and may increase costs. These costs should be reflected in prices.
- The second issue concerns the future sustainability of water systems. It has become increasingly apparent that we are reaching (or perhaps have reached or exceeded) the limits of easily accessible water supplies. As our cities grow we will need to invest in alternative water supplies. Accessing such supplies will make our systems more robust – as they will be less vulnerable to drought – and if planned properly will minimise environmental impact. It is likely, however, that development of alternatives will be more costly than traditional supply sources, and even when surface water supplies remain untapped, the costs of their development will be higher than they would have been in the past as the community now demands that higher environmental standards be achieved. Unless prices reflect the costs of accessing these supplies, their development will be delayed or will not occur without subsidisation of the industry by government, a circumstance that no one would consider desirable.

Caution with regard to institutional reform

The current push toward institutional reform comes from what some agencies and spokespeople have referred to as planning failure. That is, the perceived failure of water authorities to develop new sources of water supply. In reality, lack of new water source development has arisen because of uncertainty over climate change and the fact that sources that can now be developed because of technological advances, such as micro-and ultra-filtration were not available economically in the past. Nevertheless, there is a renewed call for institutional reform including:

- Greater private sector participation (as mentioned)
- Vertical and horizontal disaggregation of service provision
- Separation of retail and distribution services
- The creation of independent entities to direct planning; and
- Reorganisation of state regulators.

Additionally, the Federal Government has signalled its intention to drive water reform.

Within this milieu, it is critical that prices set at all levels (retail, distribution, bulkwater) reflect full cost recovery and reform, not obscure relations between these levels of between operators, planners and regulators such that cross-subsidisation once again emerges.

Quantum of Dividend Payments

Water service providers pay to their government owners a dividend, in the same manner as publicly listed companies pay a dividend to their shareholders. Such dividend payment should reflect the commercial performance of the provider. Anecdotal evidence suggests that some governments have required some providers to pay extraordinary dividends, beyond the level that would be prudent if normal commercial arrangements applied. Such 'capital raids' burden water service providers with debt or inhibit their ability to provide services. Such demands are anathema to the delivery of efficient cost-reflective water services.

Impact of over-pricing of water

The above discussion has focussed primarily on under-pricing of water. It should be clear that over-pricing of water would produce extraordinary profit and would be an abuse of the monopoly position currently held by most Australian water authorities.

Summary of AWA's Position

AWA believes strongly that full cost-reflective pricing is critical if economically efficient allocation of water resources and investment in them is to be made. The Association acknowledges that certain social objectives might be achieved through subsidisation of water prices, but where this occurs all subsidies should be transparent and bounded.

AWA also believes that externalities should be internalised in prices and that an attempt should be made to identify the principles that should apply to such internalisation. Further research in this field is required.

AWA further believes that research should be undertaken into the benefits or otherwise of scarcity pricing. Where benefit is identified, principles for implementation should be developed. Further research in this field is required.

AWA's position is welcoming of greater private sector involvement in the provision of water services, but stresses that this involvement must take place within a robust regulatory framework to ensure that consumers are protected and that all parties maintain full cost-reflective pricing.

AWA is also welcoming of future improvement in institutional structures, but stresses that such reforms must be transparent and economically efficient and that they do not result in obscure relationships between parties that might lead to the re-emergence of hidden cross-subsidies.

In regard to the points made in the preceding two paragraphs, AWA believes that the Federal Government should convene an appropriate national forum of all jurisdictions to explore and commission further research on the practicality of introducing competitive pressures and private sector service provision in the urban water services sector. The National Water Commission's call for the development of an urban water supplement to the National Water Initiative may be a good place to start this discussion. These initiatives would logically cover a wide range of issues, but efficient pricing of services should not be ignored.

Finally, AWA affirms its respect for the constitutional right of each jurisdiction to shape its urban water services institutions as it sees fit, notwithstanding that the Association sees value in developing some national principles for water pricing and in other areas of reform, as were established in the COAG water reform process.

References

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