Submission to Productivity Commission Draft Report

"Australia's Urban Water Sector", April 2011.

This submission draws on my extensive and ongoing research into the Australian urban water sector as detailed in the following references, most recently as a 2010 National Water Commission Research Fellow undertaking the project entitled "Productivity, efficiency and technological progress in Australia's urban water utilities". My comments relate to *Ch. 7 Pricing of Water and Wastewater* and *Ch. 12 Structural Reform Options for Large Urban Cities* in the draft report.

Ch. 7 Pricing of Water and Wastewater

In the section entitled 'Impediments to flexible retail pricing' subsection 'Responsiveness of demand' (pp. 185-187) the available Australian evidence is summarised, including Hoffman et al. (2006) (please note correct reference details below), with the suggestion that the price (in)elasticity of urban water reinforces the argument that the lack of responsiveness limits its effectiveness in managing demand. Certainly, studies of urban water demand, both in Australia and elsewhere, as comprehensively surveyed in Worthington and Hoffman (2008), indicate that the price elasticity of water demand is inelastic. However, this should be heavily qualified in that the long-run price elasticity of demand is indeed quite elastic.

For instance, in Hoffman et al. (2006) the estimated price elasticity from linear and nonlinear demand equations lies between -0.507 and -0.588 in the short run and -1.167 and -1.442 in the long run. On this basis, Hoffman et al. (2006, p. 357) conclude: The most important finding is that the short-run price elasticity of demand, although inelastic, is larger than previously thought. The price elasticity of demand is also more elastic in the long run than in the short run. This implies that the price mechanism can be an effective tool for managing the demand and consumption of residential water". This is also consistent with the available international evidence on urban water demand (Worthington and Hoffman 2008).

Other work by the authors (Higgs and Worthington 2001; Hoffman et al. 2006; Worthington and Hoffman 2008; Worthington et al. 2009) is more supportive of the Commission's findings, particularly Draft Recommendation 7.2 (p. 177) that utilities should charge tenants directly for all water charges (Hoffman et al. 2006). There is also support for the Commission's Draft Finding 7.3 (p. 180) that inclining bock tariffs currently distort the volumetric component of two-part tariffs with efficiency gains from moving to a flat volumetric rate. For example, Worthington et al. (2009, p. 439) conclude that in inclining tariff structures, "...consumption rates are so low, and the limits so high, there is almost no meaningful price signal. Moreover, the reliance on high access charges in two-part tariffs structures means there is likely to be much misperception of the marginal price of water and this further distorts outcomes".

Ch. 12 Structural Reform Options for Large Urban Cities

In the section entitled 'Other efficiency consequences of structural reform' (pp. 315-326) the Commission discusses the nature of the economies of scale and scope found in urban water utilities. In particular, the Commission urges some caution in interpreting studies of economies of scale, particularly as there may be little allowance for the individual circumstances that affect utilities or whether there is any controls for production and customer density, drinking water standards and customer standards. I would like to point out three recent studies that may be of assistance to the Commission in this regard.

First, Worthington (2010a) undertakes a comprehensive review of existing efficiency studies concerning urban water utilities. This provides suitable guidance on the types of contextual factors that should be taken into account and the available evidence on economies of scale and scope. Second, in an empirical study of Australia's 55 largest urban utilities, Worthington (2011) concludes that environmental factors only account for a relatively small percentage (6.5 percent) of the variation in observed scale inefficiency where the utility outputs are specified as chemical and microbiological compliance, real loses per connection, the number of water main breaks and water quality and service complaints.

Finally, Worthington and Higgs (2011) conclude that strong economies of scale prevail in large Australian urban utilities at relatively low levels of output: 50-75% of the mean output or about 63-95,000 connected properties or 18-27,000 ML supplied water, after which equally strong scale diseconomies arise. As in the Commission's own findings on economies of scope, Worthington and Higgs (2011) provide the first known Australian results, thereby complementing the scant international literature, that there are strong and ongoing economies of scope regardless of size, thereby supporting the argument for vertical integration in the urban water sector.

References

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