

Senate Standing Committee on Economics

ANSWERS TO QUESTIONS ON NOTICE

Treasury Portfolio

Budget Estimates

1 June – 3 June 2010

Question: BET 281

Topic: Urban water reform

Hansard Page: Written

Senator Eggleston asked:

- a) I see that you have been doing a lot of work urban water modelling. Can you provide a description of this work?
- b) What are the main uses of this modelling?
- c) What does the modelling show about the different costs of supplying water in different ways, that is desalination vs dams vs stormwater savings, etc?
- d) Some of the results indicate that water restrictions are costly so what is the alternative?
- e) Would these prices be higher or lower if the supply options for water are constrained for example by restricting the amount of dams can be built?
- f) Is this work highlighting any deficiencies in urban water policies that currently exist?
- g) Has the work at all looked at the future demands for water supply given projected increases in our population?
- h) Has the Productivity Commission done other work in urban water reform? And what were the findings of that work?

Answer:

- a) The Staff Working Paper ‘Developing a Partial Equilibrium Model of an Urban Water System’ outlined the development of a model that can be used to quantify the costs and benefits of policy options to reform urban water systems. This work involved development of a partial equilibrium model of an urban water system to investigate capacity augmentation decisions, pricing policies and the use of water restrictions. The modelling framework is based on the solution to a constrained optimisation problem, with the objective to maximise community welfare in the urban water market. The modelling abstracts from the transaction costs of implementing policies, and the institutional and regulatory settings required for efficient water market outcomes.
- b) This modelling work is used to show how a market for urban water might operate and to quantify the cost of policies for a hypothetical urban water system.
- c) The modelling is calibrated to a hypothetical urban water system, drawing data on supply costs from dams, desalination, household tanks, groundwater aquifers and rural–urban trade from cities around Australia. The cost of supplying water in these different ways varies significantly across cities, so it is not possible to make broad, one-size-fits all statements about the different costs of supplying water. Firm policy conclusions would require the application of the model to specific urban water systems.

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- d) The base market framework in the modelling is to have a more responsive market for urban water, such that prices could adjust upward to ration water during times of scarcity, and adjust downward during times of plentiful supply. Under this framework, rationing water using water restrictions leads to a loss of welfare by water consumers.
- e) All else equal, prices would be higher if economically viable supply options are ruled out by policymakers for other reasons, such as for environmental reasons. The modelling framework can be used to assess the costs of such policy decisions to consumers of water, which then can be compared to the environmental benefits used to justify the policy.
- f) No. The model is applied to a hypothetical city, which synthesizes features of Australian capital cities. The results therefore are illustrative only, and cannot be used as a template for making specific policy judgements. The model would need to be calibrated to a specific urban water system in order to make these judgements.
- g) Yes, in the model consumption is projected to grow at 1.2 per cent per annum, in line with population growth projections for Australian capital cities from the Australian Bureau of Statistics.
- h) Yes. In March 2008 the Commission released a research paper titled 'Towards Urban Water Reform: A Discussion Paper'. There were no findings as this was not an inquiry or commissioned study. Rather, the paper discussed options for reform in the areas of water pricing, supply augmentation, and structural and institutional reforms.