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## The Political Economy of Water Pricing Reforms, edited by Ariel Dinar

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*The Political Economy of Water Pricing Reforms.* Edited by Ariel Dinar. New York: Oxford University Press, 2000. Pp. 405. \$50 hardcover.

Examining issues of water scarcity, pricing, and allocation is always important. Too often attention is given to these critical topics only in times of crisis and they are then forgotten in times of plenty. This book, edited by Ariel Dinar, brings together the theoretical, practical, and problematic aspects of water pricing. The editor has grouped the various chapters by sections that include Political Economy Frameworks and Water Pricing Reforms, Empirical Approaches to the Political Economy of Water Pricing Reforms, Political Economy of Urban Water Pricing Implementation, and Country Case Studies. This review will examine each of these sections.

### **Political Economy Frameworks and Water Pricing Reforms**

This is the theoretical section of the book. Four chapters develop a framework in which water pricing reforms take place within water resource management organizations. In chapter two, Daniel Bromley begins this section by arguing that for the efficient and equitable operation of an irrigation system it is essential that farmers be bound together in the management of water resources, otherwise the advocacy of water pricing will be inadequate and misplaced. In chapter three, Gordon Rausser provides the framework for two bargaining models, both of which show that the default options and admissible coalitions play critical roles. Accessibility to the collective decision-making process is one of the determinants of relative political influence and power for stakeholders such as water users and environmentalists.

The differing governing structures of water districts and the management of water resources are the focus for Richard McCann and David Zilberman in chapter four. Their stated hypothesis is, district managers are likely to distribute benefits in proportion to the political strength of district members rather than in proportion to the members' economic contributions. Understanding how political power within the district affects the distribution of benefits is a key element in the design of the reform. Finally, in chapter five Yacov Tsur points out the problem with water pricing if asymmetric information is present; however, the problem of asymmetric information can be overcome by quantity-dependent water price schedules. Implementation costs alone may change the order of efficiency between the different pricing methods but add no conceptual difficulty.

## **Empirical Approaches to the Political Economy of Water Pricing Reforms**

In chapter six, Steven Renzetti begins by providing much needed background on the structure of water supply costs and pricing rules that can be used. He argues that we must go beyond concentrating on pricing reforms and also consider water supply reforms in general. This means a thorough examination of the political environment in which decisions are made. Next, Xinshen Diao and Terry Roe, in chapter seven, employ a general equilibrium model that finds a strong investment and growth response to trade reform and the reallocation of resources (including water) to the production of fruits and vegetables. This reform has caused the shadow price of water to rise for these crops relative to the pre-reform protected crops (wheat and industrial crops) in Morocco. In addition, those farmers that are worse off after the reform could have the opportunity to earn income by renting water through a market process.

Chapter eight also focuses on Africa, in particular Dakar, Senegal. Alfredo Cueva and Donald Lauria use a Monte Carlo simulation approach for estimating probabilities that recommended rates will result in financial self-sufficiency for the water sector. They challenged the use of deterministic models as they consistently produced higher predictions of net revenues and did not take into account the stochastic nature of water. Finally in this section, Darwin Hall takes us back to the political aspects of water rate design and his experience with the Blue Ribbon Committee on Water Rates for Los Angeles in the early 1990s. He finds that the original embedded cost rate design is consistent with a Peltzman-type model and that the Becker model helps explain the switch to marginal cost rate design.

## **Political Economy of Urban Water Pricing Implementation**

In chapter ten, John Boland and Dale Whittington point a critical finger at increasing block tariffs (IBTs). They argue that IBTs introduce inefficiency, inequity, complexity, a lack of transparency, instability, and forecasting difficulties. They offer an alternative without the blocks: uniform price rebate (UPR). The UPR has a volumetric charge set equal to marginal cost and a fixed monthly rebate that could be targeted to low income households. Jon Strand, in chapter eleven, argues that prices charged to water users in the Honduran capital of Tegucigalpa are below the long-run marginal cost and the low water prices make overall income distribution less equitable, not more. In addition, the effect of low water prices increases water agency fiscal deficits, discourages maintenance and improvement in the system, and can cause consumers to use water inefficiently. One positive note is that low water prices limit water administration corruption.

In chapter twelve, Julie Hewitt analyzes the reasons a utility might choose to use IBTs. Utilities are more likely to adopt the market mimicking IBT if it is located in a hot, dry, sunny region with a lengthy growing season. If utilities wish to keep their variability of revenue low, they are likely not to adopt the IBT. Small utilities are less likely to use IBTs. Rounding out this section, Peter Van Humbeeck analyzes the social welfare effects of tax exemption for underprivileged groups in relation to water and wastewater fees. Water and wastewater expenses were found to be higher, *ex post*, on average for Flemish households. Of greater interest is that the relative welfare of poorer families deteriorates given that water and wastewater expenses make up a greater percentage of their total income.

### Country Case Studies

In the final section of the book, the reader is presented with case studies on the complexity of reforming water prices. In chapter fourteen, Warren Musgrave examines two such reforms that took place in Australia, finding some common characteristics between the two. First, successful reform requires the backing of an effective political coalition. Second, it demonstrates the difficulty of cost identification, measurement, and sharing, especially in the rural sector. Third, it provides potential solutions. Fourth, it indicates that a consultative, incentive based, and transparent process can propel reform into federation. In chapter 15, Luiz Gabriel T. de Azevedo and Musa Asad continue the discussion of bulk water pricing, this time in Brazil. They argue that in the reform process the first goal should be cost recovery, then work towards economic efficiency. Eventually the goal would be to create conditions in which water markets could operate.

In chapter sixteen, Karin Kemper and Douglas Olson expand their analysis to include Mexico and the state of Ceara in Brazil. Even though the Mexican water policy reform was at the national level, they found several commonalities with reform in Ceara, primarily the goal to link the reforms in water management to the economic agenda of the appropriate governments. Joseph Wambia examines the institutional reforms in the Pakistani water sector in chapter seventeen. His analysis is helpful because the social structure includes a number of stakeholders in the reform process as well as unique land tenure characteristics. The government's approach to the reform has been cautious and slow as well as radical, as seen from the opposition to it. Finally, Christopher Ward discusses how the Republic of Yemen's macroeconomic adjustment in the early 1990s has led to reforms in the water sector. Government price supports and subsidies have been reduced, leading to the need for greater efficiency in irrigation practices in order to keep incomes stable.

This book is an excellent resource for anyone interested in water pricing practices and experiences. Although written for the economist, a

number of chapters are easily understandable for the non-economist. The subject matter is as applicable to an industrialized nation as it is to a developing one. In fact, the lessons from the developing countries would be of great interest to western water planners.

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