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DEVELOPING A PRICE INDEX FOR WATER RIGHTS IN THE AMERICAN WEST

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ABSTRACT: Price indices enable timely measurement of changes in general price levels, and calculation of real incomes and output. Price escalation terms in lease agreements are commonly tied to a price index. In addition, the financial sector uses indices to track historic values, and for comparing past performance across various investments. Drawing from the literature on both hedonic price indices and water markets, we develop a hedonic price index for water rights in the American West using the dummy variable method. This method allows us to isolate the time trend in water right market values from the influence of individual water right attributes and supply and demand factors. This new application to water rights markets extends knowledge of hedonic price indices by comparing the results of a multi-period pooled regression to those derived from an adjacent-period approach. Further, our statistical analysis contributes to understanding of water markets. First, we show that rights to divert near urban areas attract higher prices than appropriations located in more rural areas. Second, our models estimate the implicit capitalization rate in water market transactions, defined as the discount rate that equates permanent water right sales prices to single-year lease rates. Third, widening price dispersion estimated across basins and new uses (all else equal) shows that western water markets are inefficient, a finding that holds significant policy implications.

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