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USING MARKETS TO EXPAND WATER SUPPLY PORTFOLIOS: THE CALIFORNIA EXPERIENCE

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ABSTRACT: In California, growth, drought, and declining imported water supply necessitate expanding water supply portfolios statewide. While infrastructure projects provide an effective solution to water shortage, environmental concerns and scalability issues reduce the feasibility of new storage and conveyance. As a result, many water users rely on reallocation of water entitlements through market mechanisms to increase water supplies. Single-year water transfers are frequently completed to address temporary drought-related scarcity, and long-term transfers are emerging to accommodate future growth. In addition, water market transactions provide water for the environment. We draw on our proprietary database of over 1,000 water market transactions in California to assess the use of water transfers to expand water supply portfolios. We estimate the impact of drought, population growth, price appreciation, use, location, and state-facilitated water transfer programs on prices and annual trading volumes. A system of equations explaining annual trading activity and prices is developed using Two-Stage Least-Squares (2SLS). This 2SLS model has been used in feasibility studies analyzing the economic benefits of proposed conveyance and storage projects.

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