Federal Reserve Bank of Dallas Considers Water Scarcity

Jeremy Brown December 10, 2013

This year, as state officeholders – and later voters – considered a new funding program for water infrastructure, supporters of the measure warned of the economic consequences that Texas would incur if it failed to act. Several unsettling figures were plucked from the State Water Plan (SWP) and repeated far and wide.

In a report this month, the Federal Reserve Bank of Dallas calls water scarcity "one of the most pressing economic issues facing the state" and a "potential drain" on the Texas economy. (For an account of the role of the regional bank, check out this fascinating October 2013 Texas Monthly profile of the Dallas Fed's president and CEO, Richard Fisher.) The report does not attempt to calculate estimated economic hits, as the SWP does. Instead, it presents water markets as an answer to scarcity and identifies the factors that could discourage their use and development.

The Dallas Fed explains that water markets "can allocate water to its most productive uses and help to alleviate shortages. Prices are not set by an agency but are negotiated in the market process – rising in periods of relative scarcity and falling during times of relative abundance." The bank points to water markets in the Lower Rio Grande Valley and the Edwards Aquifer as examples that the rest of the state could use as models.

But the Dallas Fed cautions that certain aspects of the current water law framework could inhibit or distort water markets. Since Texas law treats surface water and groundwater differently, so does the report.

Groundwater

The bank notes that, physically, groundwater lends itself more readily to a market than surface water does. Groundwater can be pumped from anywhere overlaying an aquifer; it does not have to be conveyed within an aquifer region the way that surface water within a basin does. Legally, however, things are not so simple.

The rule of capture – endorsed in *Edwards Aquifer Authority (EAA) v. Day*, and strengthened in *EAA v. Bragg* – poses a significant market barrier. "Because water becomes private property only after a landowner draws it from the ground, there is a strong incentive to be the first to pump. Economists call this the 'tragedy of the commons.' Groundwater pumping from an aquifer has negative spillovers because one person's actions leave less for everyone else. The system sends users exactly the wrong message: Pump faster as water becomes scarcer."

Translation: the *Day* and *Bragg* property rights regime is convenient for landowners but bad for the sorts of markets that property rights advocates generally endorse; and as a result, property rights in groundwater – as distinct from the rights in the real estate with which the groundwater is associated – are worth less.

The Dallas Fed recommends ditching the rule of capture for a cap-and-trade system similar to the one that the EAA uses. It suggests that if a cap-and-trade system were to survive judicial scrutiny under *Day* and *Bragg*, it would have to assign ownership rights based upon historical usage and above-aquifer land acreage.

Surface Water

The bank recognizes that current surface water laws and practices are more conducive to markets than is the case for groundwater. But it observes several potential obstacles: (1) river authorities sell water based upon their politically driven policies rather than supply and demand; (2) river authorities frequently use "take or pay contracts," which discourage conservation by requiring buyers to pay for water whether they use it or not; (3) river authorities and major cities hold so much water that they (particularly the river authorities) could distort markets; and (4) Texas has over-allocated its river systems.

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