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# Hartman and Seastone, Water Transfers Economic Efficiency and Alternative Institutions

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## *Water Transfers Economic Efficiency and Alternative Institutions*

By

L. M. HARTMAN and DON SEASTONE

Baltimore and London: The Johns Hopkins Press. 1970

Pp. 127, $5.75

Hartman and Seastone explore in a useful way the water institutions of the West and their effect on the economics of transfers of water rights from one use to another, or from one place to another. The book should be interesting to engineers engaged in water-rights administration and the planning of water-use projects and to water lawyers. Full appreciation may require at least the "short course" in matrix analysis and input-output models and the economist's lexicon. This reviewer notes some deficiency in this respect.

The authors recognize that the basic objective of Western water laws governing acquisition and transfer of water rights is to protect property rights in water—including the rights of those party to the transfer as well as the rights of others. They do not seem quite prepared to accept the proposition that officials responsible for the administration of water laws cannot properly influence economic efficiency (maximization of national income) while acting on water-right transfers.

When water is diverted from a stream and used for the irrigation of land (or for most other purposes), a part of the water is consumed by evaportation and transpiration and a part returns to the stream. In common terminology, consumptive use equals diversion from the stream minus return flow thereto. When return flow passes beyond control of the water user and returns to the stream, it is again public water, subject to appropriation by downstream users. A change of point of diversion which returns the flow back in the stream at a point below instead of above the diversion point of a downstream appropriator dependent on the return flow, cannot be allowed without conditions to protect the appropriator being leap-frogged, even though the downstream appropriator has a junior right. Hartman and Seastone use an example in which the flow available for diversion is the controlling factor and a downstream appropriator dependent on return flows is leap-frogged. They thus show how a person acquiring a water right and transferring it downstream can have less water available for his diversion than he had at the original point of diversion. Appropriators downstream from the new point of diversion would, of course, then have an increase in supply available to them for diversion.

The point of the example is that the accounting of return flows required by existing water institutions may discourage water transfers by increasing the cost to those wanting to acquire and transfer a water right for a new use. Admittedly, the example given can occur in real life and the problem might be cured, as suggested, by giving the transferrer some control over his return flow. However, most likely situations such as the example will not create a serious impediment to water-right transfers for two reasons.

First, as the authors recognize, most water transfers will be from irrigation to municipal and industrial uses for which the demand is relatively inelastic and much higher valued. In this case the effects of the present procedures for accounting return flows will have only a slight effect on allocation efficiency.

Second, the flow in the stream and the point of reentry of return flow are not always controlling factors. It will likely be more common, at least in "upstream" states such as New Mexico, that downstream rights, including the rights of downstream states under our compacts, can be protected by permit conditions framed to avoid any increase in consumptive use as a result of the transfer. In fact, in many cases it should be possible to permit the transferrer to increase the amount of his diversion so long as the consumptive use is not increased. This possibility is of importance where the nature of the new use is such that the percentage of diverted water consumed is less than the percentage consumed in the original use.

There are some minor misstatements in the discussion of New Mexico water law which this reviewer points to with reluctance, in case that they be traced to conferences with him. The book suggests that the State Engineer may, at his discretion, set a hearing on a protested water-right transfer application. He must, of course, conduct a hearing before acting on any protested application and should undertake hydrographic surveys of river basins only as directed by the court. In fact, the State Engineer was directed by the Legislature (Section 75-4-2, NMSA, 1953 Comp.) in 1907 to undertake hydrographic surveys of each stream system in the state, beginning with those most used for irrigation, to obtain the data needed for adjudication of water rights and for other purposes.

The authors find the New Mexico system for transferring water rights, which is managed by an administrative official (the State Engineer) and which provides an opportunity for appeal to the courts, more conducive to economically efficient decisions than the Colorado system in which the court has original jurisdiction. Several persuasive reasons are given for this finding. The New Mexico system allows a relatively flexible, investigative procedure in lieu of the more

rigid, adversary procedure of a court. The administrative procedure tends to discount the difference in skill of attorneys and witnesses retained by the parties to the advantage of water-right owners not parties in the matter. Here again, it might be useful to recognize that the economic efficiency of a water-right transfer is not a proper concern of the deciding officer under either the New Mexico or the Colorado system. However, this is not to say that amendments of the law which would promote economic efficiency without jeopardizing property rights should not be considered.

The authors use an "input-output model" to examine economic interdependencies within a region and the cost and economic efficiency of water transfers from one water use activity to another. This technique should be useful in the formulation of water development and management plans and in the determination of the cost of achieving social objectives. It is demonstrated that this method could be applied in determining the cost of growing municipal and industrial demands of a region by comparing transfers from the usually lower-valued irrigation uses with importation costs from regions of surplus water supply.

The authors do not directly explore the economic interdependency of a region of deficient water supply and a region of surplus water supply to determine whether economic and social benefits and costs related to a major interregional water transfer might be advantageous to both regions. Such transfers are, and apparently will be for some time, a subject of interest at least in the western United States and a sequel on this subject could be useful.

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