

The Missing Benchmark in Electricity Deregulation¹

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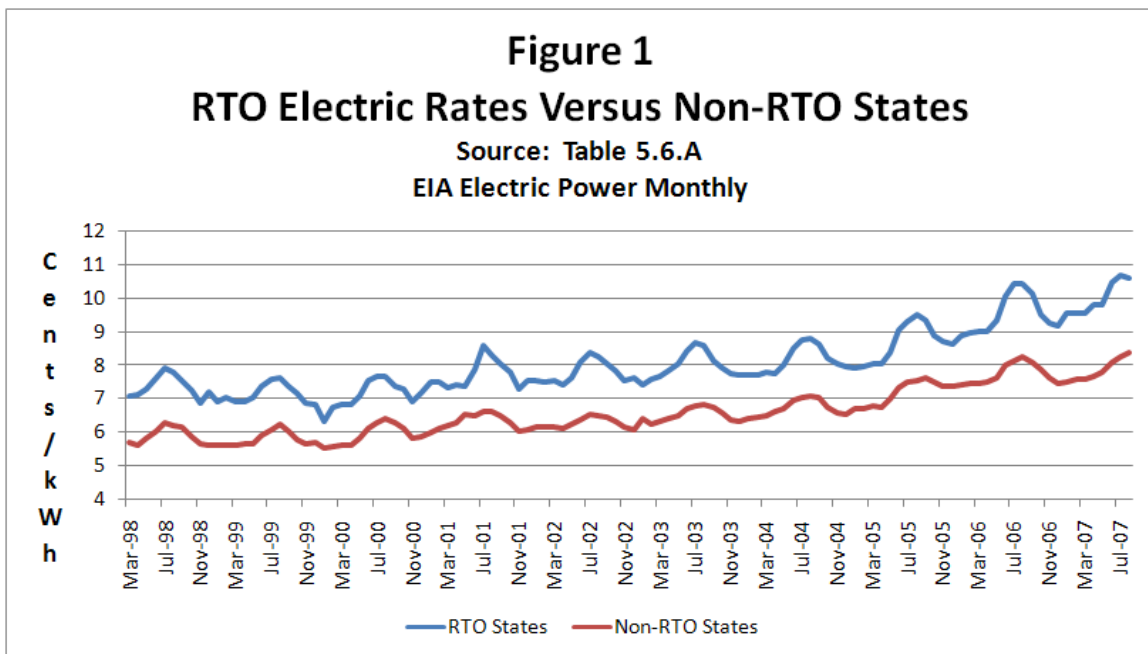
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Advocates of centrally administered markets are quick to assert that today's ISO/RTOs are the most efficient mechanism to encourage the needed investments in new generation and transmission that can stabilize and potentially reduce the retail price of electricity for businesses and ratepayers. However, Figure 1 reveals a widening price differential between RTO and non-RTO states.²



¹ The majority of the research is taken from “Why Are Administered Markets So Expensive?” by Robert McCullough, Berne Martin Howard, and Michael Deen (forthcoming in *Public Utilities Fortnightly*).

² The RTO states are: California, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Texas, Vermont, Virginia, West Virginia, and Wisconsin. The non-RTO states are: Alabama, Alaska, Arizona, Arkansas, Colorado, Florida, Georgia, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Mississippi, Montana, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Utah, Washington, and Wyoming.

How can we analyze this problem? RTO supporters often argue that prices are rooted in increasing input costs, primarily fuel costs. Yet there is no consistent, formalized benchmark to help us determine if and by what magnitude RTOs prices are higher than marginal costs. The logical comparison would be real time prices in the RTOs against system lambdas as discussed below.

RTO Real-time Prices

Limitation: Lack of data transparency (e.g. the costs of generating units) means relatively few checks and balances against strategic bidding (even FERC cannot see the entire picture).

Limitation: RTO regulations that run into hundreds of thousands of pages of dense formulas, special exceptions, and unique terminology effectively act as barriers to entry. On the other hand, market prices in Texas are calculated with an algorithm which fails frequently, requiring a “rule of thumb” market price rule.

FERC Form 714 Hourly System Lambda

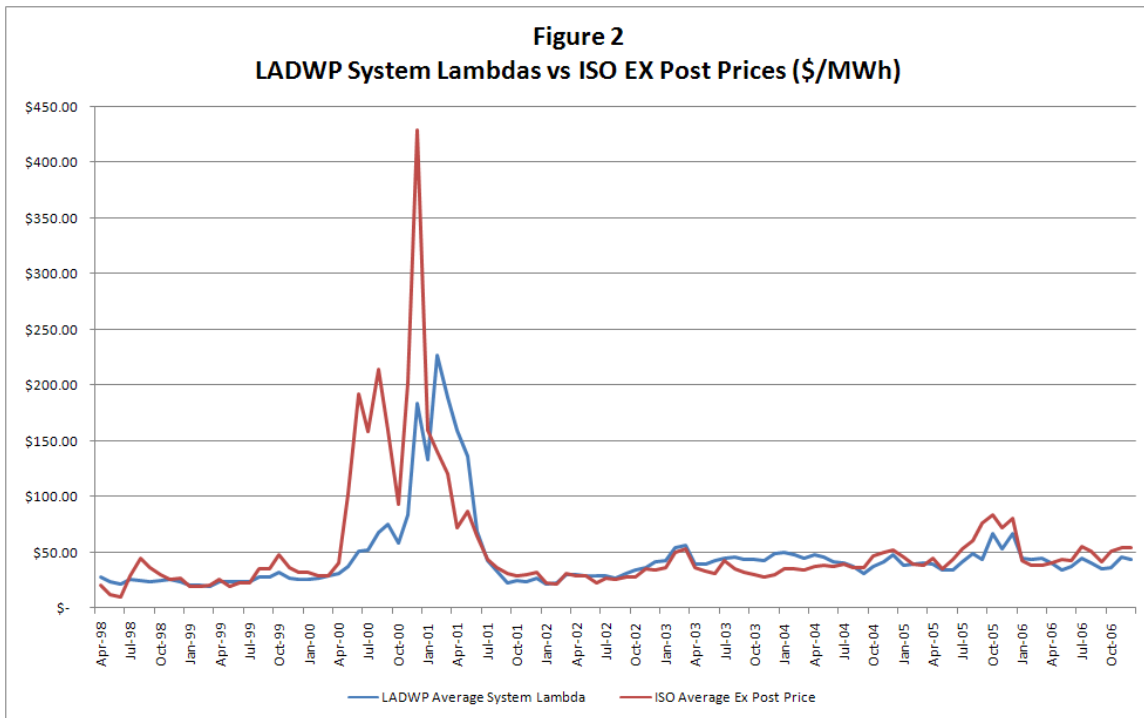
The system lambda “represents the variable cost of the last kilowatt produced over a particular hour” of a generator’s dispatchable units; thus, “system lambda is closely associated with the marginal cost of producing electricity and offers a good indicator of the competitive price for electrical energy.”³

Limitation: FERC does not require RTOs to report system lambdas.

This limitation is particularly provocative in California, much of which is organized under the California ISO. The city of Los Angeles, however, is served by the municipal utility, the

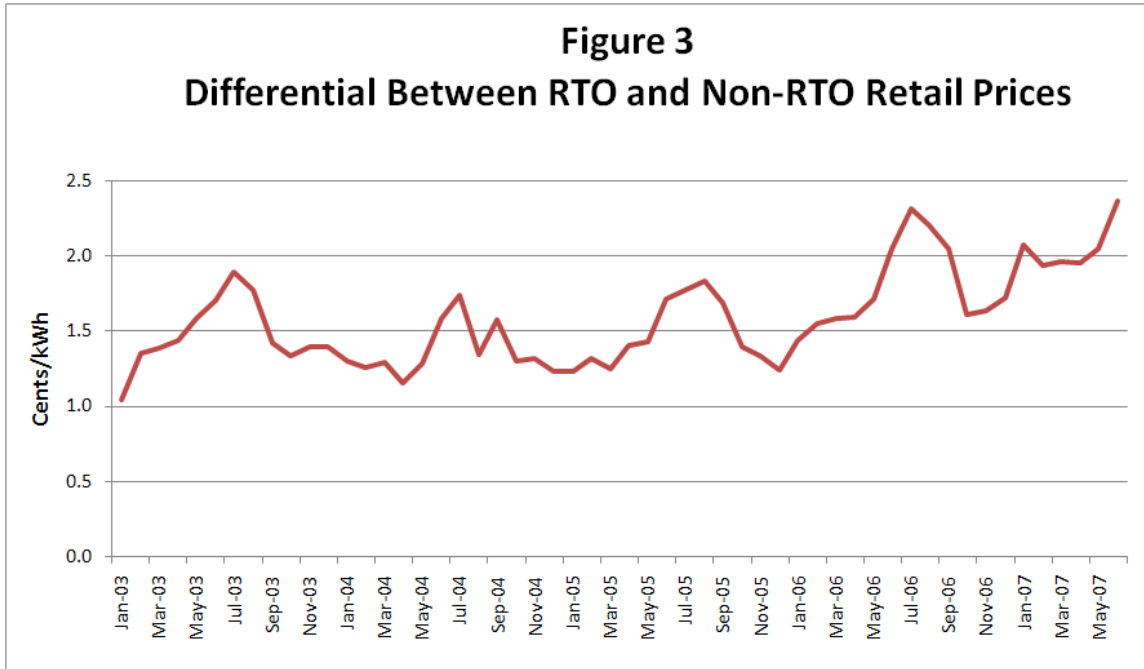
³ “Using Hourly System Lambda to Gauge Bulk-power Prices,” William C. Booth and Judah Rose, *Public Utilities Fortnightly*, May 1, 1995; <http://www.pur.com/pubs/634.cfm>

Los Angeles Department of Water and Power, which still reports system lambdas. While we would expect the competitive forces at CAISO to provide lower costs than LADWP's traditional vertically integrated utility model, the opposite appears to be true (Figure 2).

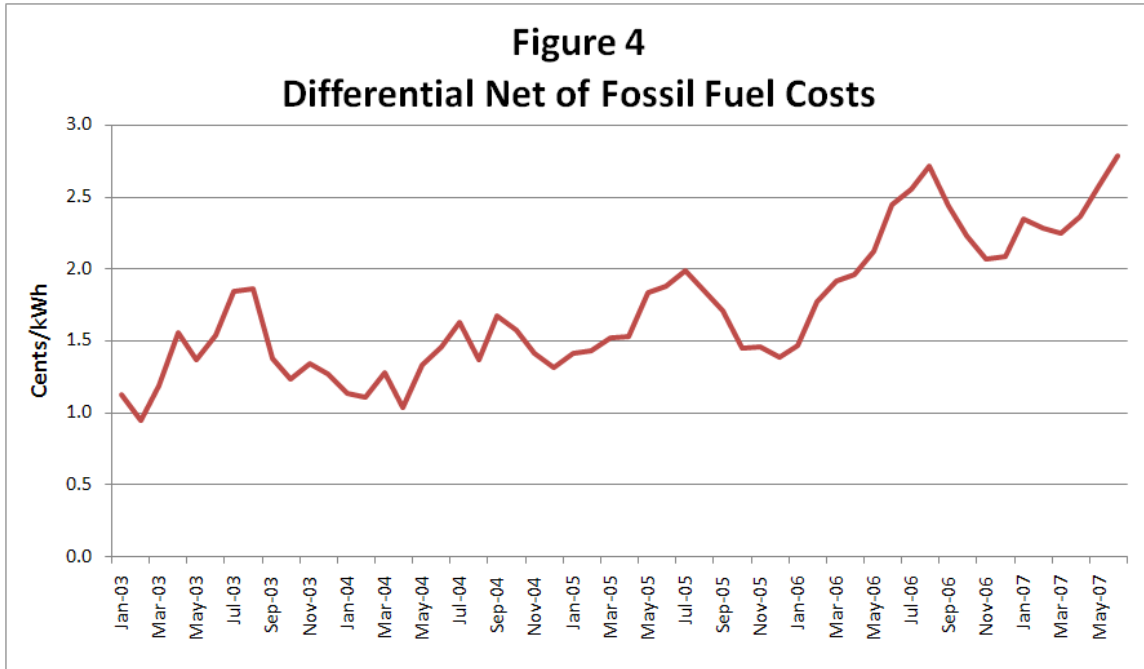


Is natural gas the explanation for the increasing rates in RTO states?

Natural gas is a common fuel in both RTO states and non-RTO states, and its actual delivered cost is comparable across the nation. Figure 3 shows the price differential between states in RTOs and other states from 2003-2007. In January 2003, RTO states averaged \$74.43/MWh vs. \$64.01/MWh for non-RTO states for a differential of \$10.42/MWh, or, using more familiar retail pricing units, 1.042 cents/kWh. In 2007 the differential was \$23.90/MWh or 2.39 cents/kWh.



The differential increases when fossil fuel costs are removed from the comparison. Netting out fossil fuels from retail prices shows that the differential for RTO states of \$11.26/MWh in 2003 rose to \$27.55/MWh in July 2007 (Figure 4).



Clearly, the change in fuel costs is not a very effective explanation of the RTO states' increasing prices relative to non-RTO states. An alternative explanation is the transfer of Producers' Surplus that has taken place in several RTO states as discussed in the next section.

Illinois and Producers' Surplus

In 2007, Illinois demonstrated what happens when consumers can no longer capture the values above the supply curve allowed under traditional regulation. The state's first and only wholesale electricity auction, conducted under conditions of extreme secrecy in 2006, resulted in prices for the majority of ratepayers 40% above contemporaneous open markets at the time, as shown in Figure 5. Finally, a bill was passed by the state legislature that gave consumers a \$1 billion rollback, and the auction mechanism has been abandoned (the 2006 bids are still kept confidential to non-participants).

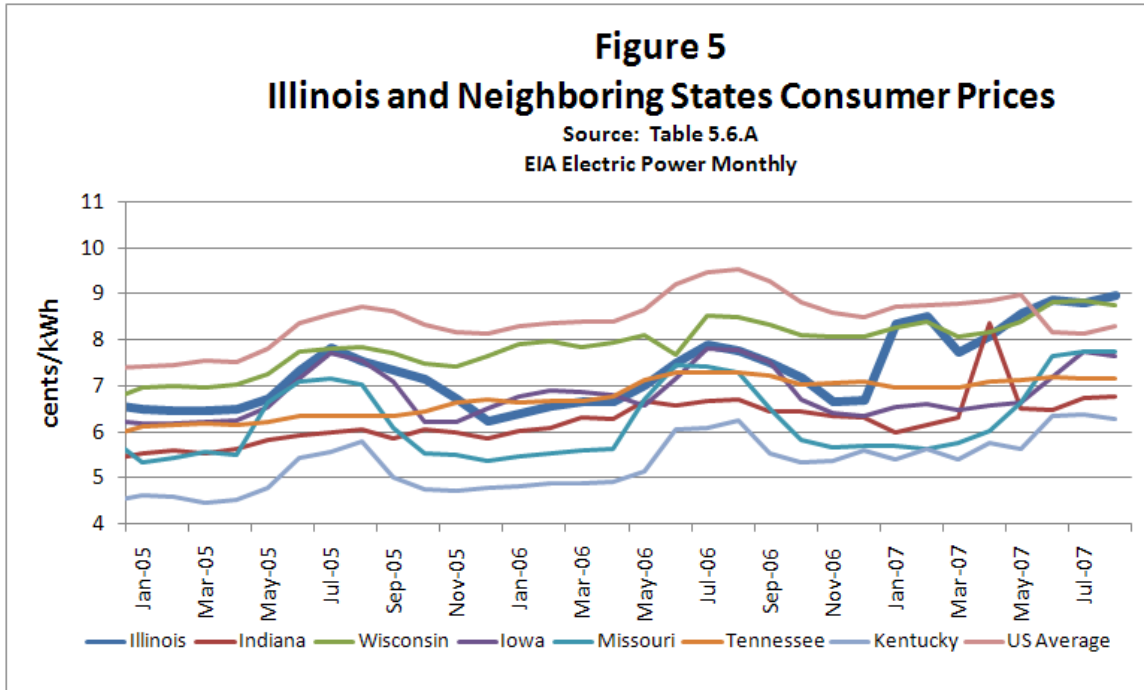
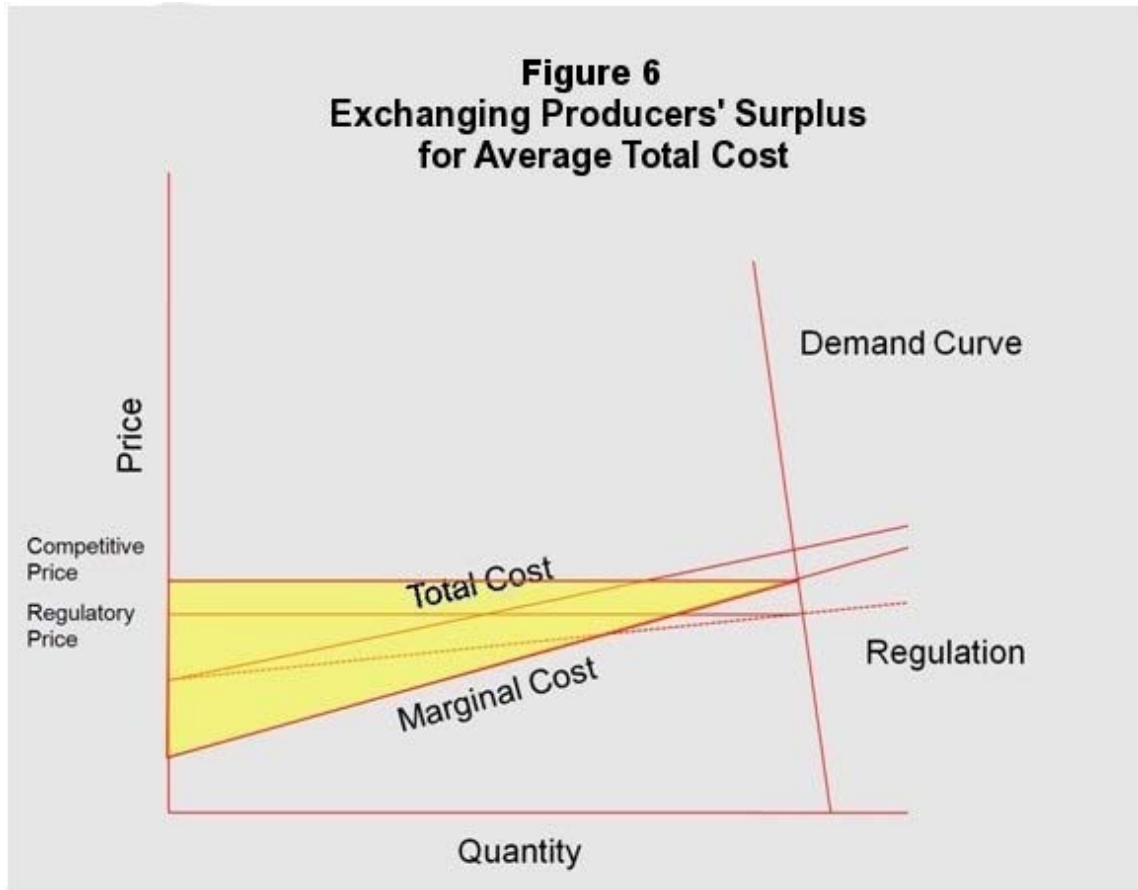


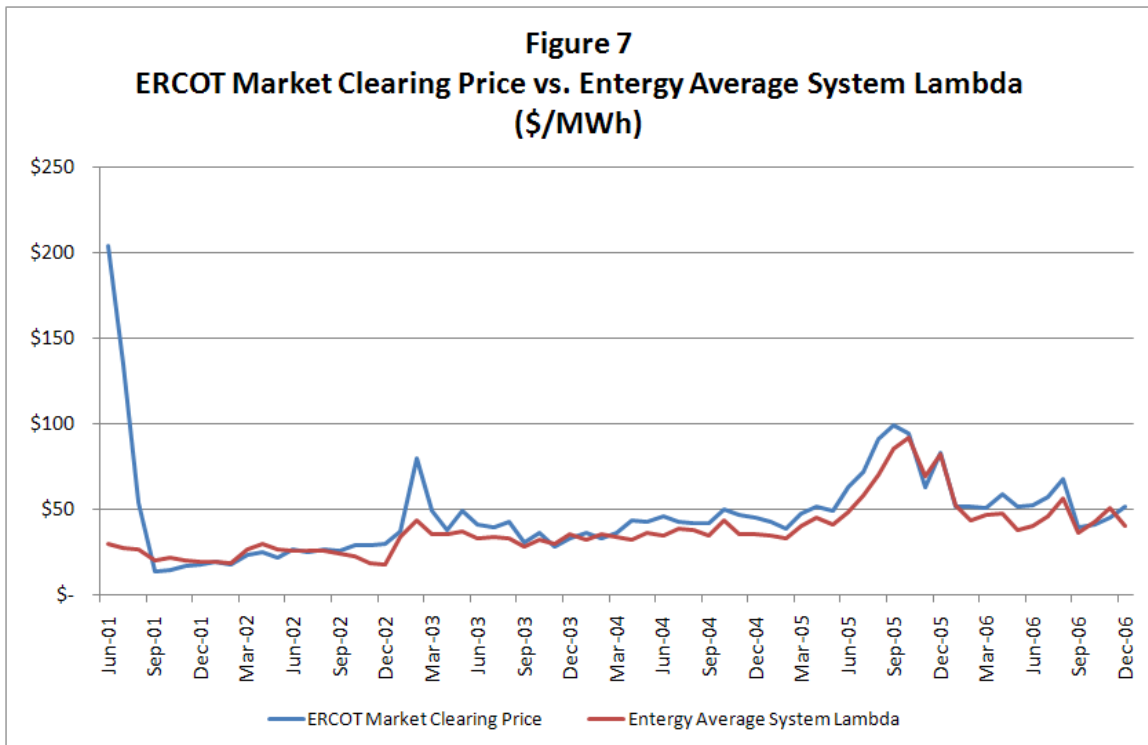
Figure 6 is an economics snapshot of the Illinois experience. The yellow triangle represents Producers' Surplus (the difference between the price consumers will pay at the intersection of the demand curve with the supply curve, and the corresponding marginal cost of production). Under traditional regulation, the supply curve is equal to average total cost (shown by the dotted line). In times when fuel costs are high – as they are today – it is likely that short term marginal cost will confer a windfall on suppliers relative to traditional regulation. This situation is made even worse when there is a strong suspicion that strategic bidding has increased the RTO prices above marginal cost. From a public policy perspective, the absence of marginal cost information for the administered markets is a significant problem, particularly when RTOs rely on auctions and set the rules outside public view.



Require RTOs to file system lambdas

If we want to know whether administered markets are truly competitive, we should again require RTOs to report system lambdas. Figure 7 comparing ERCOT's market clearing price with Entergy's average system lambda graphically illustrates the necessity of restoring transparency to electricity markets so that participants will find it difficult to pursue pricing that does not reflect economic realities. ERCOT is famous for one anonymous participant's strategy of bidding \$990.01/MWh for a small block of energy, which many times actually

sets the market price.⁴ The scheme is similar to Enron's market manipulation ("Project Stanley") in Alberta.⁵



Conclusion

The apparent inability of RTOs to deliver lower prices to end users has prompted a widespread reevaluation of the benefits of administered markets. If FERC is serious about implementing administered markets throughout the United States, it should reinstate the missing benchmark – requiring RTOs to file their system lambdas – so that policy makers can evaluate why prices in RTO states continue to diverge from non-RTO states.

⁴ Under ERCOT rules, “Mr. \$990.01” is not identified to other market participants, even though the bidding behavior appears highly anomalous.

⁵ “Enron’s Per Se Anti-trust Activities in New York,” Robert McCullough, Memorandum, April 12, 2005; <http://www.mresearch.com/pdfs/101.pdf>