



Power in the Public Interest

ELECTRICITY PRICE TRENDS DEREGULATED vs REGULATED STATES

based on EIA data through October 2007

by
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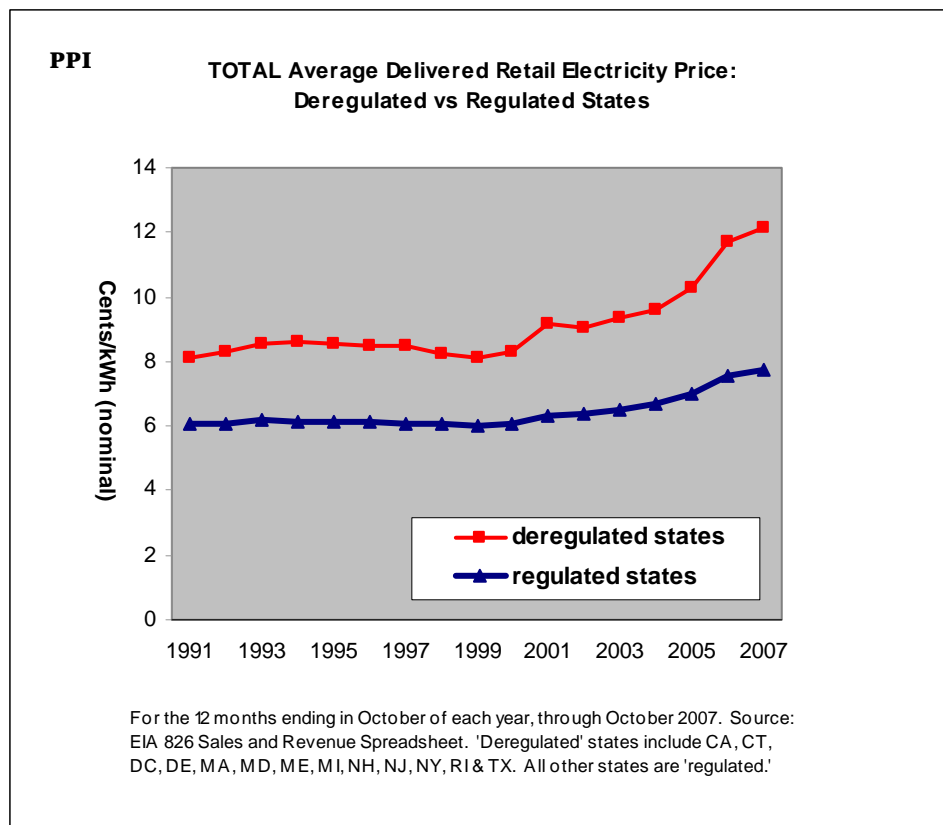
ELECTRICITY PRICE TRENDS, DEREGULATED vs REGULATED STATES

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National Picture. The gap in retail electricity prices between deregulated and regulated states¹ continues to widen. The difference has more than doubled, from 2.1 cents/kwh in 1999 to 4.4 cents/kwh in 2007 (nominal dollars).

Figure 1 shows retail prices in the price-deregulated group, compared to prices in the rest of the states, which kept regulated rates (including price caps and credits).² Prices are for the twelve months ending in October of each year, through October 2007—the latest data available. They are for total delivered cost (generation, transmission, distribution) to all customers in a state, and include sales by investor-owned utilities, consumer-owned utilities, and private energy marketers and providers.

Figure 1 – All Customer Classes



¹ The term “deregulated” as used in this paper, and as commonly used elsewhere, means *price*-deregulated, i.e., prices are set by a market, not directly by a regulator. The market rules themselves, however, are regulations; in this sense all electricity systems are “regulated.”

² For more on categorization of states, see Explanatory Notes at the end of this paper.

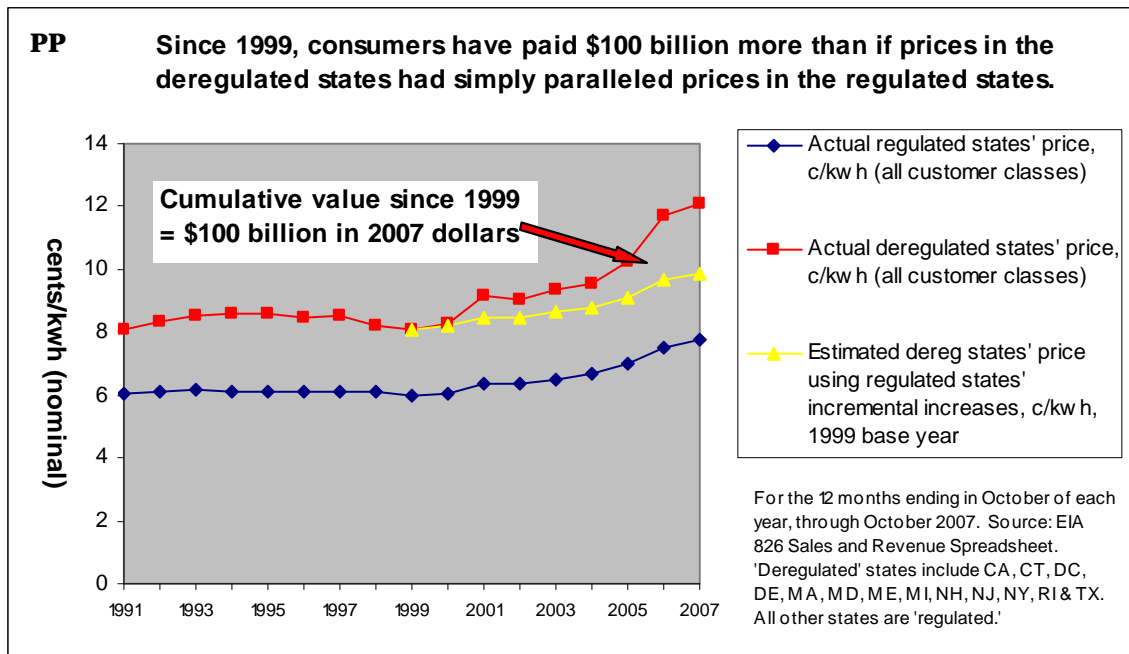
In 1999, the average price for customers (all customer classes) in the later-deregulated states was 8.1 cents/kwh; the comparable figure for the collective regulated states was 6 cents/kwh—or a difference of 2.1 cents. As of October 2007, the difference had widened to 4.4 cents (12.1 cents/kwh for the deregulated group and 7.7 cents/kwh for the regulated states³).

For the 12 months ending October 2007, consumers in the deregulated group paid \$139 billion for their electricity. The same amount of electricity at the regulated states' average rate would have cost \$89 billion—a difference (or comparative purchasing-power disadvantage to the deregulated states) of \$50 billion for the 12-month period. Cumulatively since 1999, in constant 2007 dollars, if invested at 5% annual return, the difference in value is \$360 billion.

This is not to say that deregulation is responsible for the whole gap, or that the gap can be closed. The gap *does*, however, reveal the significant economic disadvantage suffered by customers in the deregulated states, and the imperative for them (as well as states about to face deregulated prices) pursue the most effective form of economic regulation of electricity.

Benchmark Parallel. Figure 2 shows a hypothetical yellow line of the average price in since 1999, in the deregulated group, *if* prices had simply stayed parallel to (but above) the average price in the regulated states—roughly similar to historical trends prior to 1999. Cumulatively since 1999, consumers in the deregulated group paid \$100 billion more (in 2007 dollars) than what they would have paid in the hypothetical “stay-parallel” case.

Figure 2 – Hypothetical Parallel Prices



³ Some figures appear off by one decimal due to rounding.
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Again, one cannot say that the deregulated states would have precisely followed the “yellow” price-path had they not deregulated. Exact prices might have been higher or lower, depending on a number of factors, including growth, density, resource mix, and effective regulators.

The hypothetical yellow line *does*, however, provide a conceptual benchmark for examining why the average deregulated price has risen above it. A fair place to start would be the wholesale market design in the regional transmission organizations (RTOs). By design, the most expensive needed resource, often a natural gas plant, sets the price for *all* needed resources, regardless of their underlying cost. So if the price of natural gas increases, as it has, or if an even more expensive resource (e.g. coal) becomes the marginal resource, prices for *all* resources will increase as a result. By contrast, in regulated cost-based systems, a higher-cost resource will not significantly affect the amount consumers must pay for a lower-cost resource.

Customer Classes. The following pages show comparison-charts for the deregulated and regulated groups, broken down by class of customer—residential, commercial, and industrial.

Figure 3 – Residential

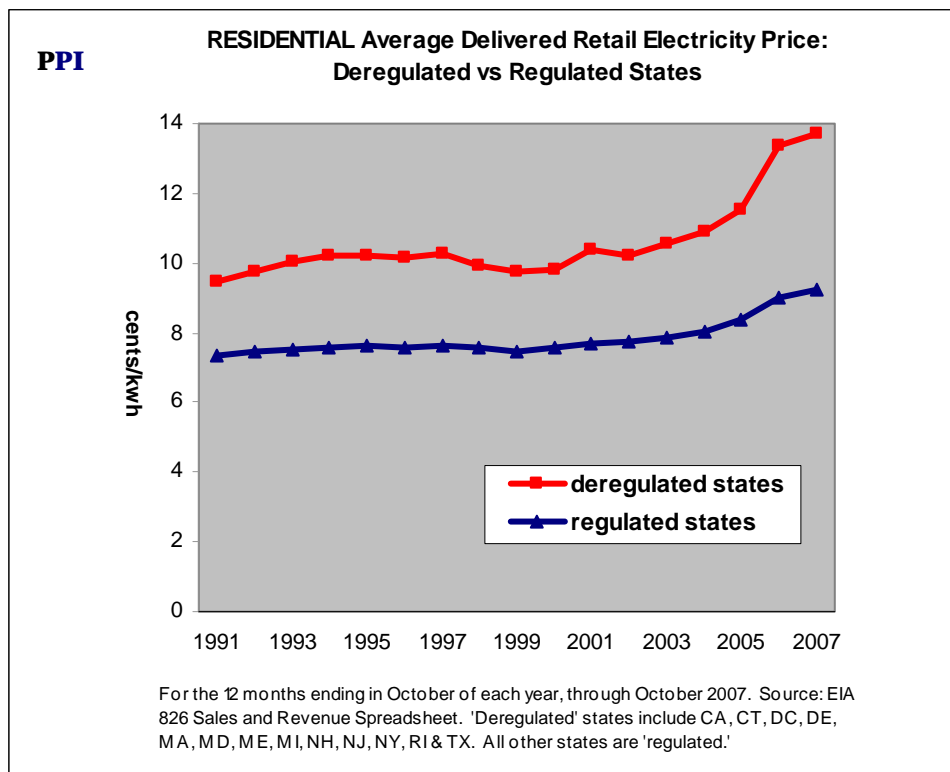


Figure 4 – Commercial

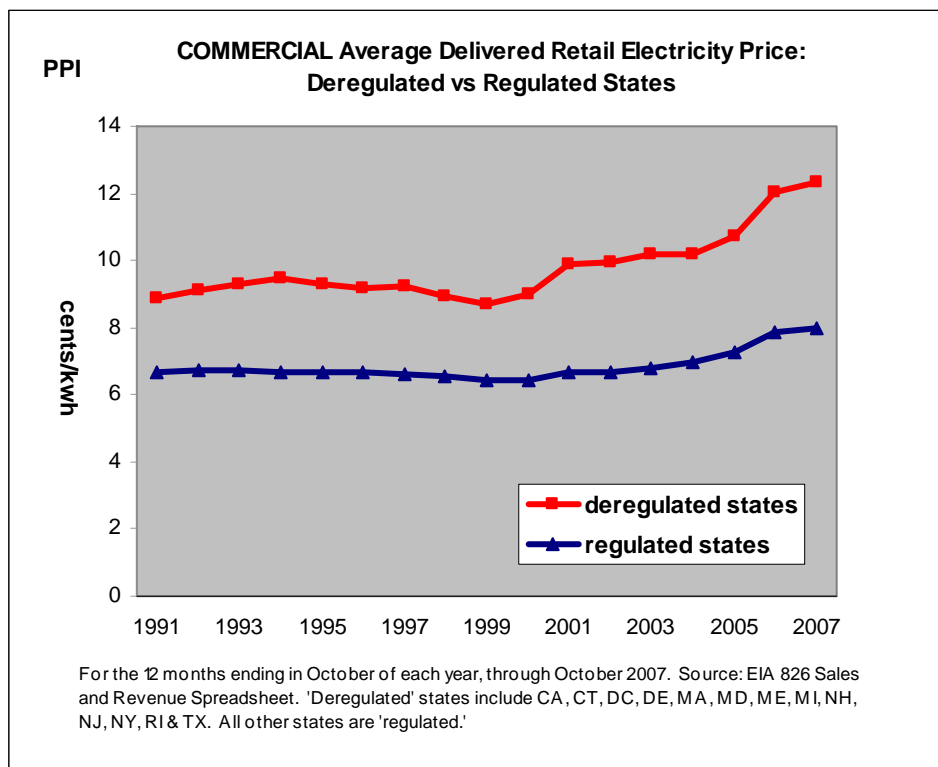
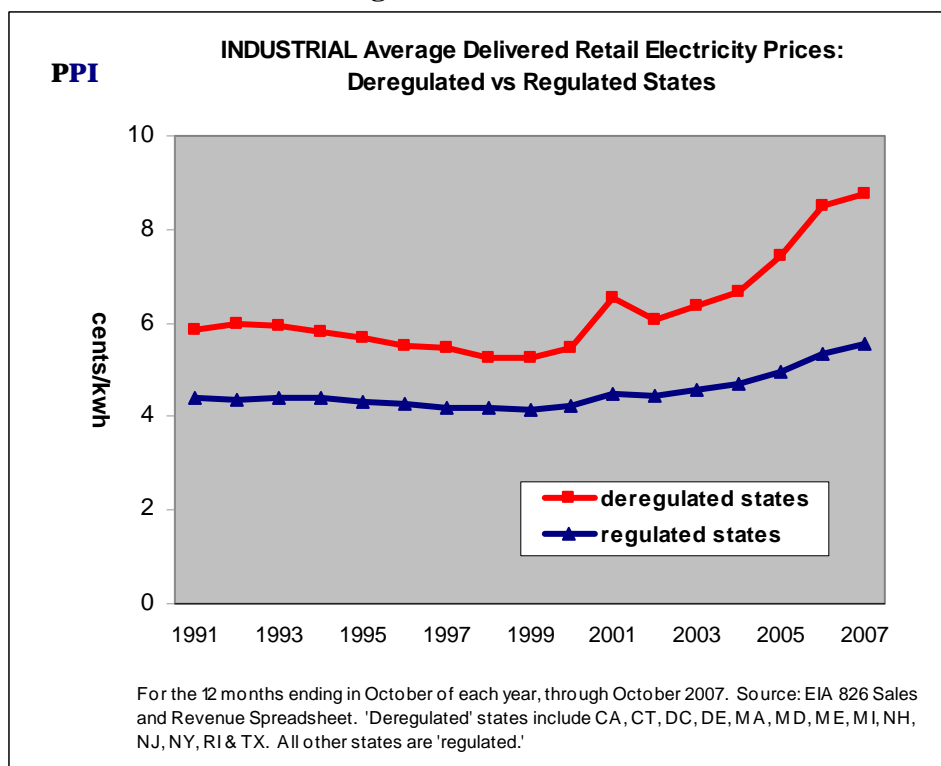
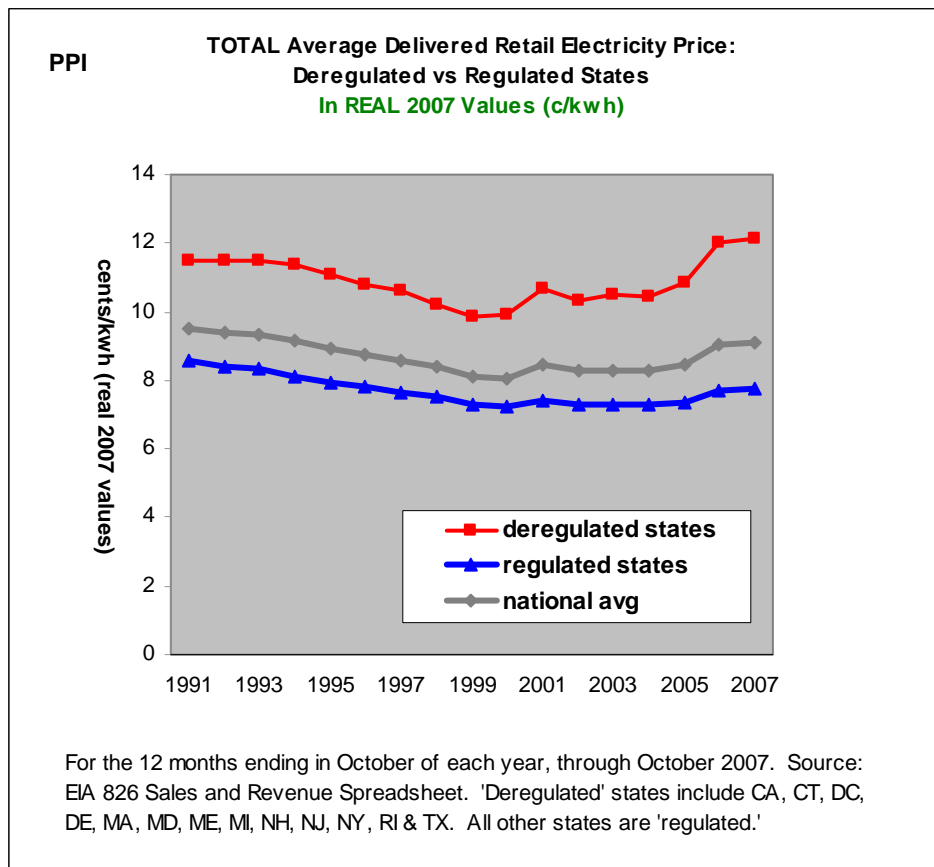


Figure 5 – Industrial



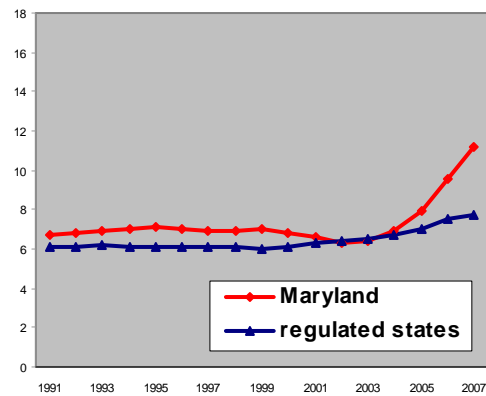
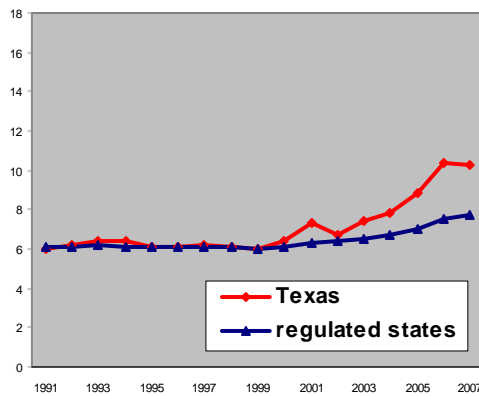
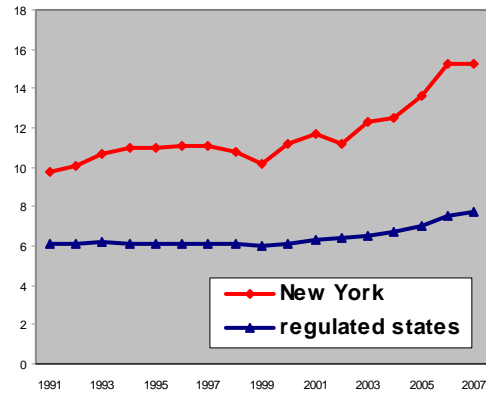
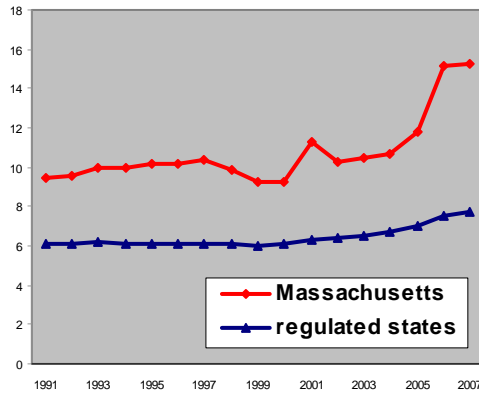
“Real” Dollars. Figure 6 shows the same data as in Figure 1 but all in “today’s dollars (i.e., “real” or “constant” 2007 dollars). Since 1999, deregulated states’ prices have gone from 22% above the national average to 33% above the national average. Rates in the regulated states have gone from 10 percent below to 15% below the national average. Thus the *spread* in rates between the deregulated and the regulated states has widened from 32 points to 48 points surrounding the national average. Put another way, since 1999 the deregulated states’ rates have gone from 36% higher to 56% higher than rates in the regulated states. (All of these percentages hold regardless of whether nominal or real prices are compared.)

Figure 6 – Real (Constant) Dollars



Selected States. Price trends for individual deregulated states are similar. (See all states at www.ppinet.org .)

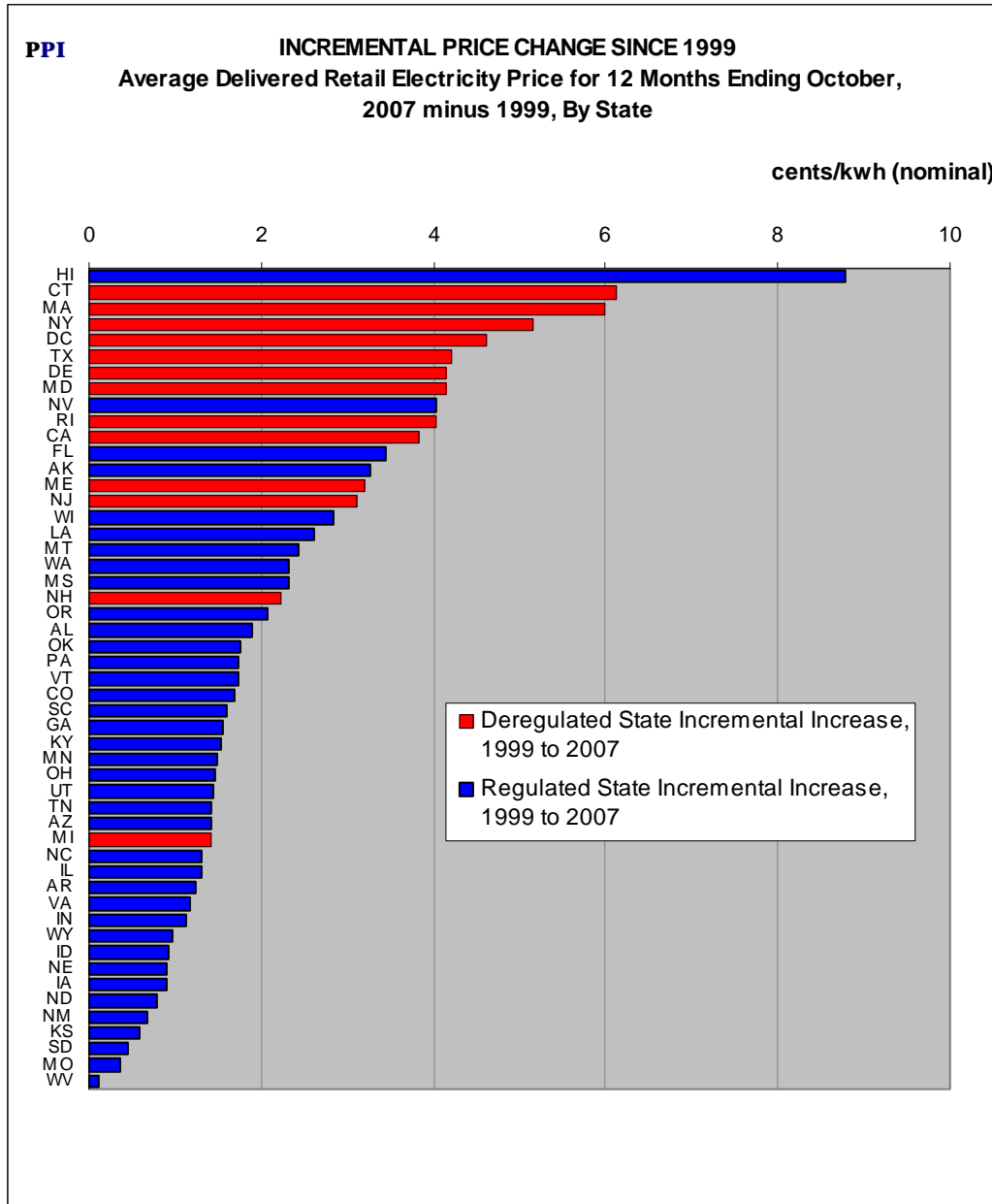
Figures 7a,b,c,d



For the 12 months ending in October of each year, through October, 2007, Source: EIA826 Sales and Revenue Spreadsheet. Regulated states include all states except CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI, & TX. Prices shown in cents/kWh, nominal values.

Incremental Increase. Figure 8 shows, each state's incremental increase in price since 1999. In the contiguous US, of the top ten states, all except Nevada are deregulated states (and Nevada took some initial steps, later modified, toward deregulating prices for large industrial customers.). The top five are Connecticut, Massachusetts, New York, the District of Columbia, and Texas.

Figure 8 – Incremental Increase

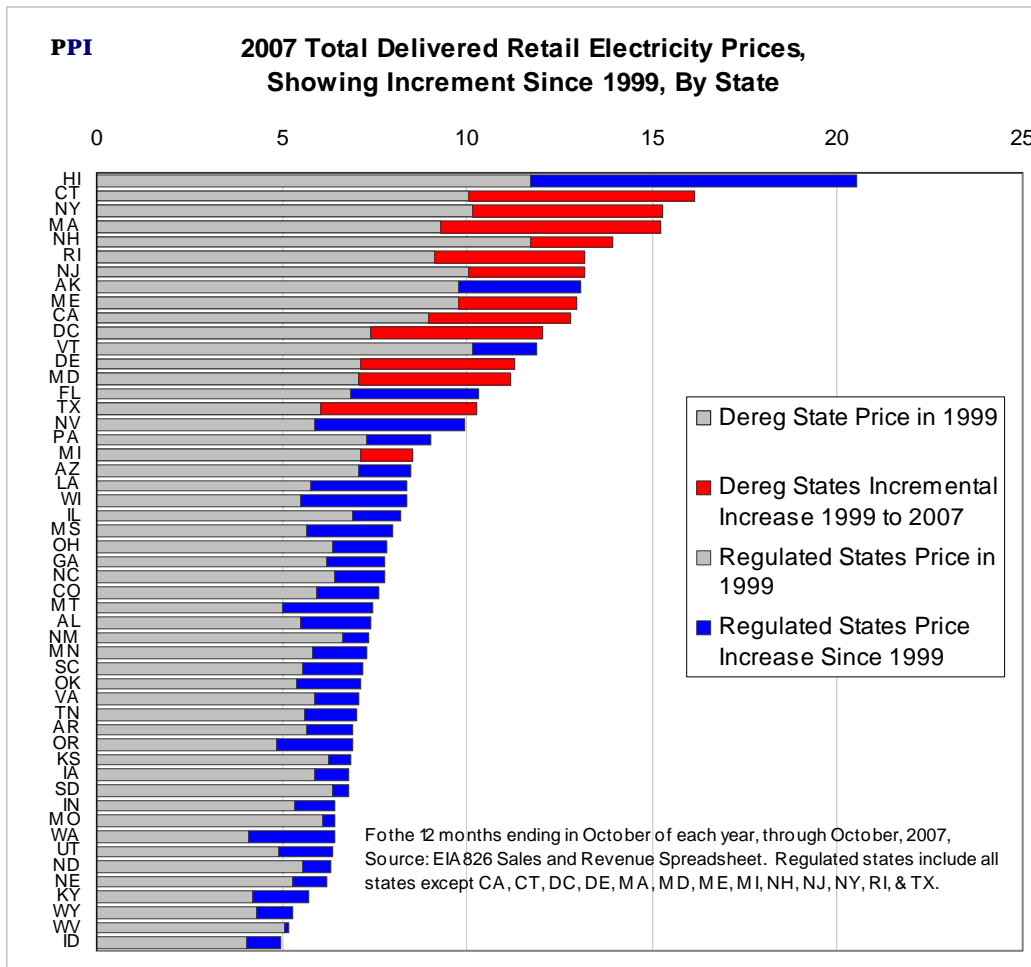


For the 12 months ending in October of each year, through October, 2007, Source: EIA826 Sales and Revenue Spreadsheet. Regulated states include all states except CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI, & TX.

Challenges By Market Enthusiasts. Restructuring enthusiasts try to discount the reality of these high prices in a number of ways. *Choice of States.* First, they fault the selection of states shown as “deregulated” and argue that the “restructured” states of Illinois, Ohio, Pennsylvania and Virginia should be included with the deregulated group. But with the exception of a few months in Illinois and a small portion of Pennsylvania, retail prices in these states have been constrained by price caps. Retail prices under price caps do not reflect market prices.

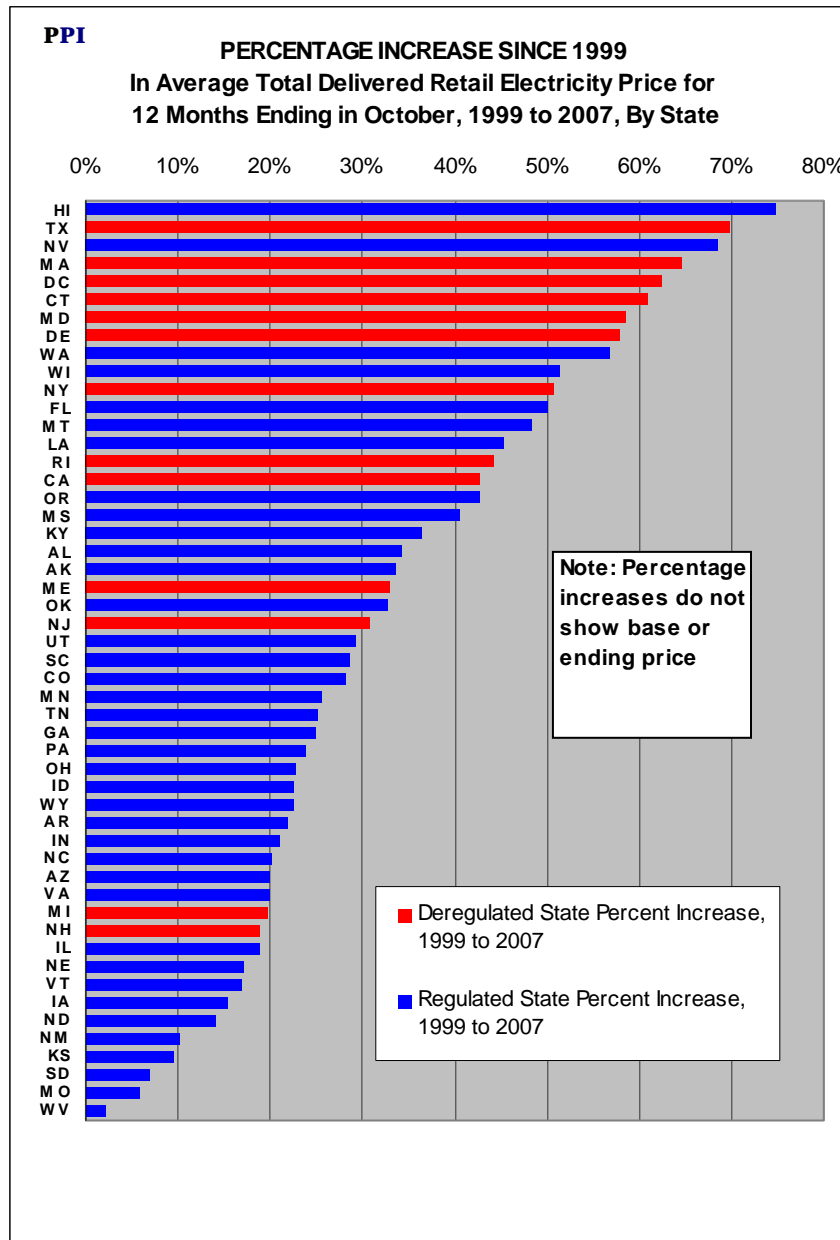
Percentage Comparisons. Second, deregulation enthusiasts argue that some deregulated and regulated states have experienced comparable *percentage* increases in rates. They would argue that the price increase in Washington (eighth from the bottom in Figure 9) is “the same” as the price increase in Connecticut (second from the top in Figure 9) because both experienced about a 57-60% increase since 1999. But no business or consumer would agree that Connecticut’s increase from 10 to 16 cents/kwh is the same as Washington’s increase from 4.1 to 6.4 cents/kwh—among the lowest rates in the country. (Moreover, Washington’s increase was due in large part to the disastrous effects of California’s deregulation on the Western wholesale market.)

Figure 9 – 2007 Prices, Showing Increment Since 1999



In any event, a display of percentage increases in electricity prices since 1999 will not comfort deregulated states or their consumers:

Figure 10 – Percentage Increase



Lifting of Price Caps. Some advocates try to explain the high prices as pent up pressure that is released when price caps are removed. While this is possible, it only means that if this pressure had been absorbed along the way instead of being pent up under a price cap, deregulated prices in earlier years would have been even higher (sooner), and the comparative disadvantage in purchasing power in those years would have been even greater between deregulated and regulated states. Further, price caps in most states that lifted them have now been off for some time, especially for industrial customers.

Natural Gas Prices. Some claim that the higher prices in deregulated states are simply the unfortunate effect of increased natural gas prices, a claim that has been effectively rebutted.⁴ Actually the prices are largely a reflection of market design. As discussed earlier, the wholesale market designs that drive retail prices in the deregulated states allow the highest bid among needed suppliers, often a bid from a natural gas plant, to set the price for all needed resources, regardless of their underlying costs. As a result many lower-cost plants are collecting, and consumers are paying, enormous profits (also called “infra-marginal returns,” an economic term, or “the dark spread,” a pun on another energy term, “spark spread”).

Finally, some market enthusiasts say “just wait”: prices will cycle down, improvements will be made, and consumers will ultimately benefit. Setting aside the inequity and hardship on today’s consumers while waiting for this scenario to develop, the more likely scenario for the foreseeable future is one of increasing marginal prices, as tighter worldwide fuel supplies and mandates for renewable resources drive up the marginal bids and therefore drive up prices for all resources.

Conclusion: Because it is difficult to “prove the counter-factual” (what the deregulated states would have experienced had they never deregulated), it is difficult to say with quantitative precision by how much deregulation has driven up prices. However, the evidence is strong and mounting that the combination of retail deregulation at the state level and marginal pricing at the wholesale level is driving retail prices to consumers well above underlying costs. This evidence is both empirical and theoretical.

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⁴ Kenneth Rose, “The Impact of Fuel Costs on Electric Power Prices,” June 2007, <http://www.appanet.org/files/PDFs/ImpactofFuelCostsonElectricPowerPrices.pdf> and Robert McCullough and Ann Stewart, “The Missing Benchmark in Electricity Deregulation,” December 2007, <http://www.appanet.org/files/PDFs/RestructuringsMissingBenchmark.pdf>

EXPLANATORY NOTES

For purposes of the analyses and graphs in this article:

- a. The source of data is EIA 826 Sales and Revenue Spreadsheet. This spreadsheet reflects information derived from both Form 826 and Form 861. For a fuller and recent explanation of the Sales and Revenue Spreadsheet, see “Supporting Statement for the Electric Power Surveys, OMB Number 1905-0129,” pp 46-49.
<http://www.eia.doe.gov/cneaf/electricity/page/fednotice/supportstatement.pdf>
- b. The rates shown are averages for the 12 months ending in October of each year, 1991 through 2007. (A rolling 12-month average captures all seasons and can be updated each month.)
- c. The rates shown are for total delivered price (generation, transmission, and distribution) for all customers in a state, whether served by an investor-owned or public-power utility.
- d. “Real” 2007 dollars are calculated based on the Implicit Price Deflator per BEA Table 1.1.4 downloaded 1-06-08 (2007 is estimated), <http://www.bea.gov>
- e. The label “deregulated” or “regulated” is applied at the state level. Rates for any given state are shown in either the “regulated” or “deregulated” line for the entire period, even though most states began deregulation around 1999 or 2000; prior to that time all states would have been classified as “regulated.” Also, a “deregulated” state may include territories, notably those of public-power utilities, that have been exempted from the state’s deregulation requirements.
- f. When analyzing prices combining *all customer classes*, the “regulated states” include all states except CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI, TX, which comprise the “deregulated” states. Characterizing a state as “regulated” or “deregulated” involves some judgment, since different states can have different approaches to pricing for different classes of customers and to divestiture of regulatory assets. In general, states whose residential customers have retained regulated rates are defined as “regulated.” (Residential customers are the largest share of any state’s load.)
 - i) The states of IL, OH, PA, VA are included in regulated states, due to price caps in those states through 12/06. Price caps in Illinois were removed as of January 2007, but January and some of February rates reflect prices paid under the previous month’s capped rates; since the graphs show a rolling 12-month average, Illinois prices for the 12 months ending July 2007 still largely reflect capped rates; further, a credit was legislated in summer of 2007 that will blunt the effect of future market rates.
 - ii) California suspended deregulation but remains in the “deregulated” category because significant regulatory assets were divested, some customers remain unregulated, and the others are largely exposed to wholesale market rates due to divestiture and California’s organized wholesale market.
 - iii) Montana is included in “regulated” states because it never fully exposed its residential customers to the open market, though its main utility did divest itself of its regulatory assets. Arguably, Montana should be included in the “deregulated” category, at least for a period of years, but doing so would not significantly change the graphs, because it is a small-population state. However, *in graphs and tables that reflect industrial prices only, Montana is considered “deregulated.”* Montana’s recent “re-regulation” law does not significantly affect prices in the time period studied in this paper.
 - iv) New Hampshire, another small state, is characterized as “deregulated,” even though some regulatory assets were preserved for residential customers for a period of time.

For short summaries of restructuring developments in each state, see
<http://www.appanet.org/aboutpublic/index.cfm?ItemNumber=9611&sn.ItemNumber=2102>