

Making the Call: Evaluating the success or failure of US Electricity Restructuring

James Bushnell

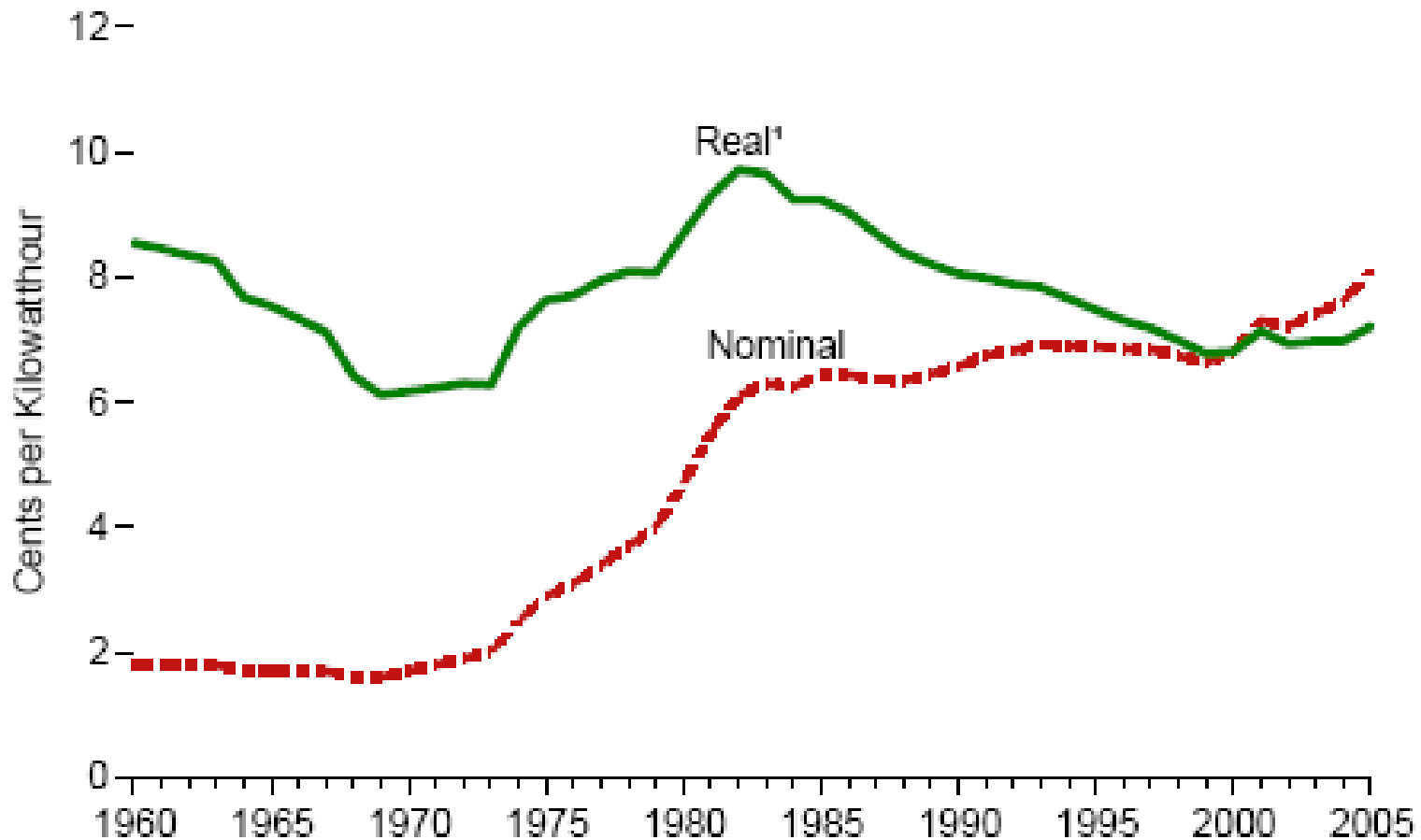
University of California Energy Inst.

www.ucei.berkeley.edu

How do we measure the impacts of restructuring?

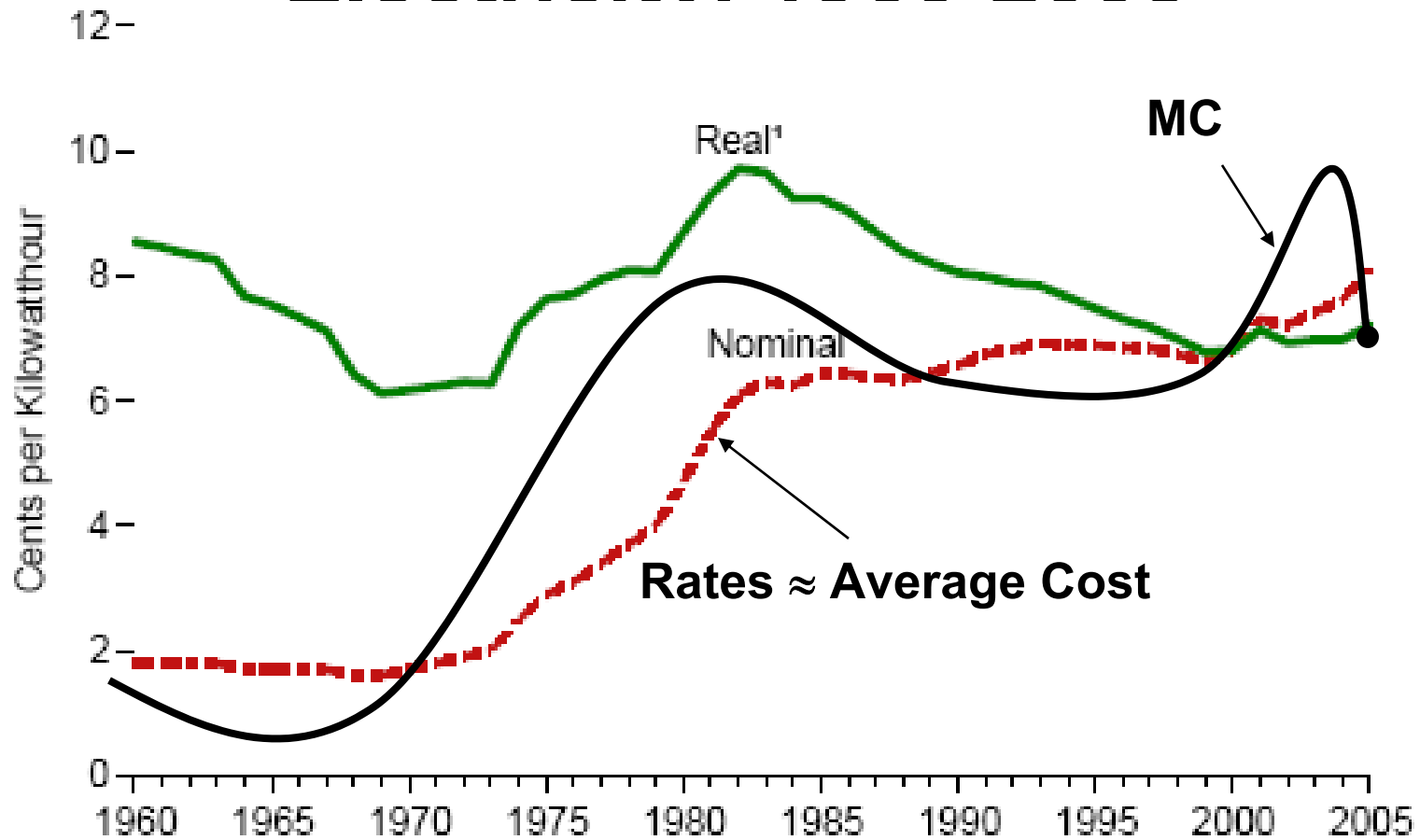
- **The problems with a focus on retail rates**
 - Tremendous time lags between wholesale and retail outcomes in many regions
 - Controlling for diversity in starting conditions
 - Isolating impacts of restructuring from other changes
 - » “restructuring” means different things in different places
 - » The perfect hindsight (“market timing”) problem

Average Retail Price of Electricity, 1960-2005

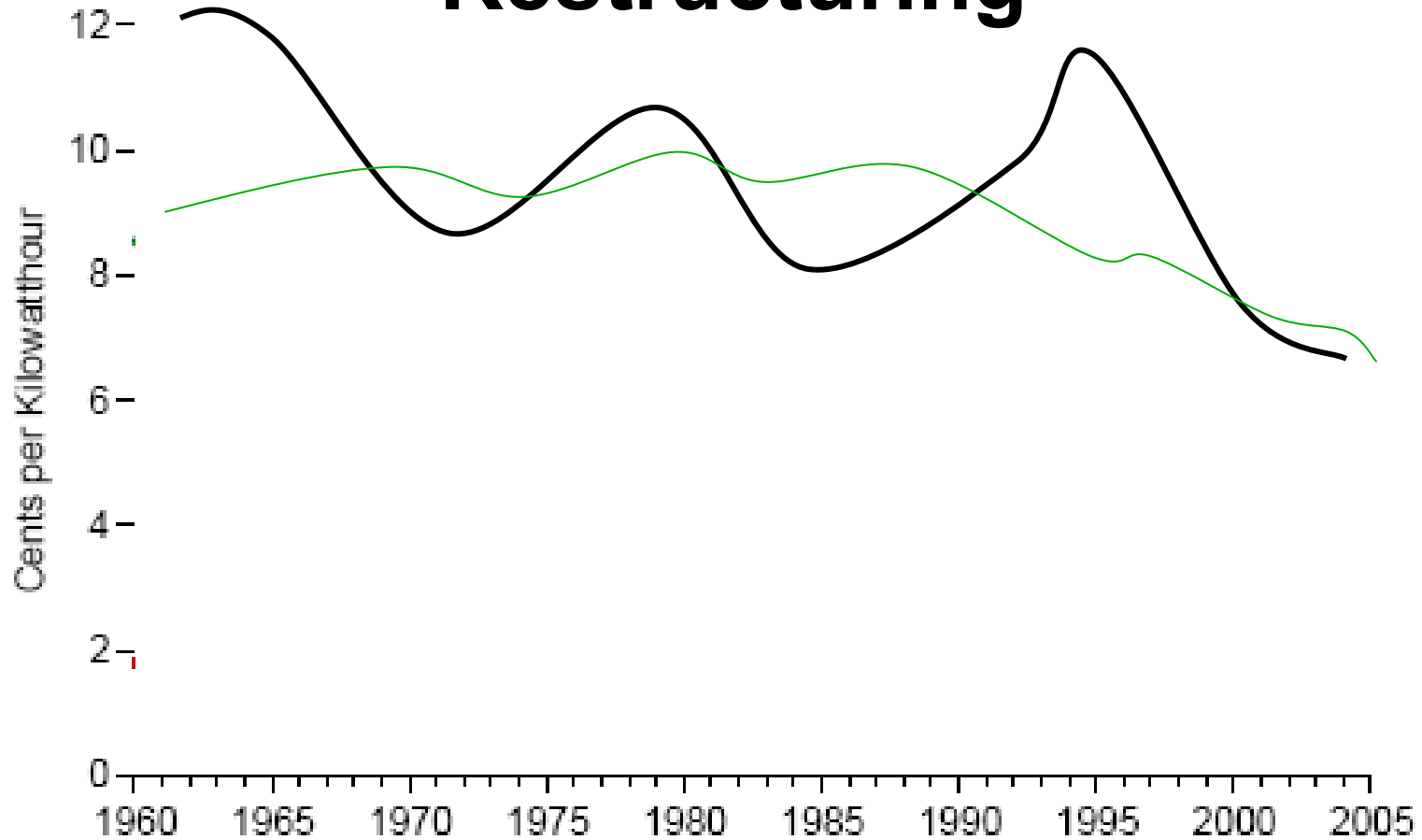


Source: EIA, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_38.pdf.

Average Retail Price of Electricity. 1960-2005



Theoretical Impact of Restructuring

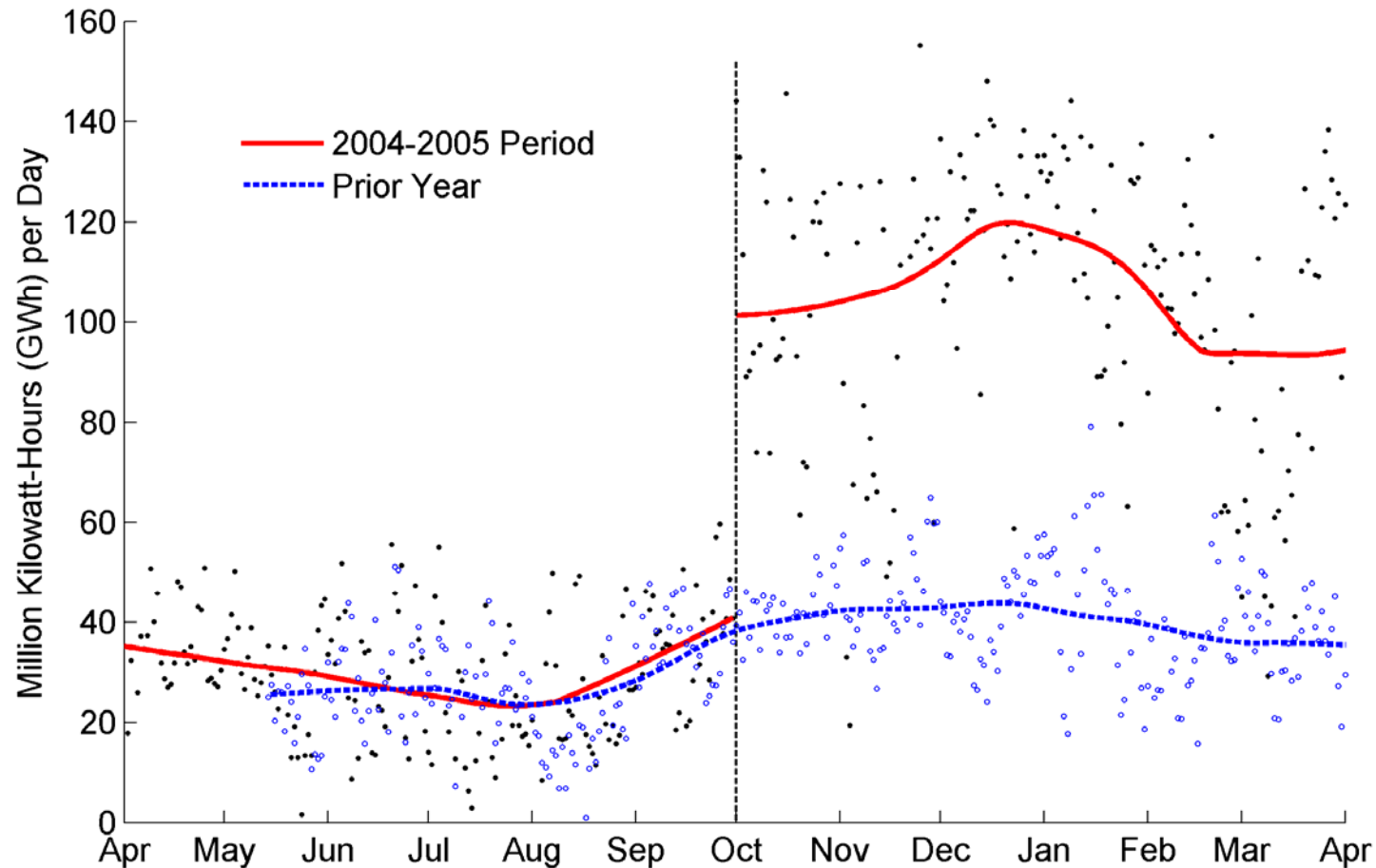


Source: Completely fictional data made up by me.

Studying the component parts (A bottom-up approach)

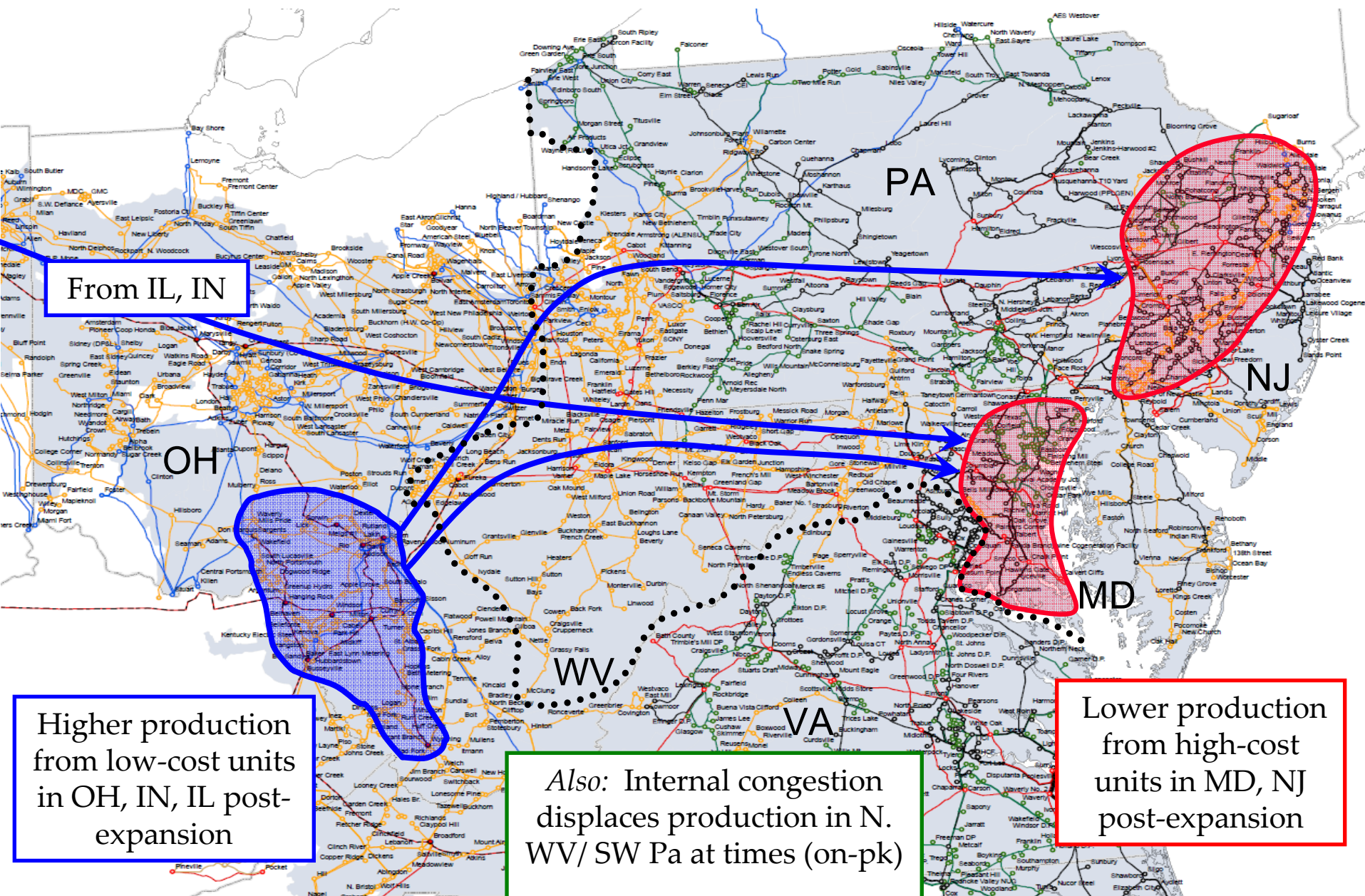
- **Productive Efficiency**
 - Operating costs (heat rates, employment, etc.)
 - Dispatch efficiency
 - Investment choices and costs
- **Market Efficiency**
 - Do prices equal short-run MC plus scarcity *when there is scarcity?*
 - Are capacity markets giving us the right prices for scarcity?
- **Competitiveness**
 - Do prices reflect long-run marginal costs on average?
 - Are prices close to short-run MC plus scarcity

Impact of PJM Expansion: Day-Ahead Net Exports, Midwest → East



Source: Mansur and White, 2007

Plant-Level Production



From IL, IN

OH

PA

NJ

MD

WV

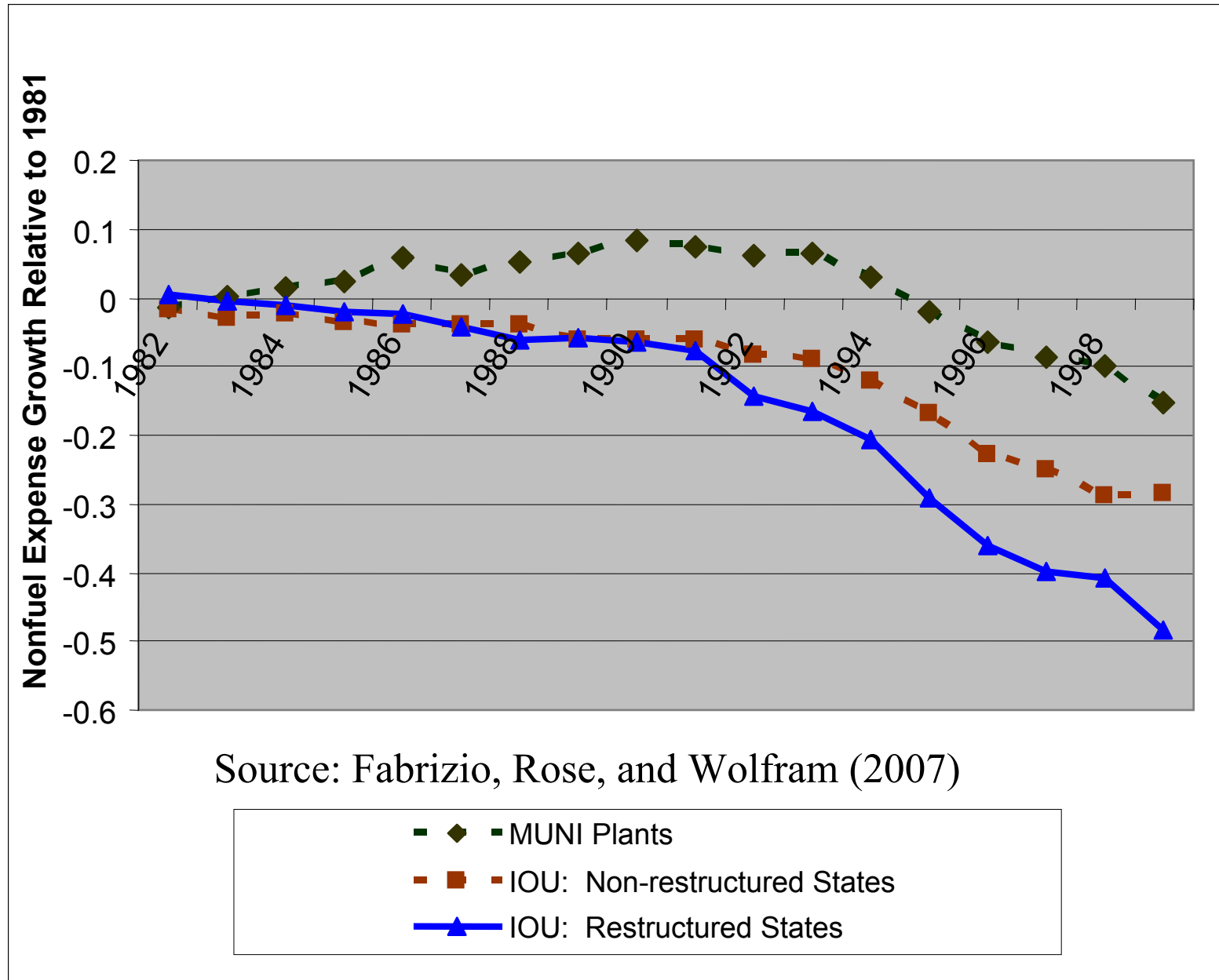
VA

Higher production from low-cost units in OH, IN, IL post-expansion

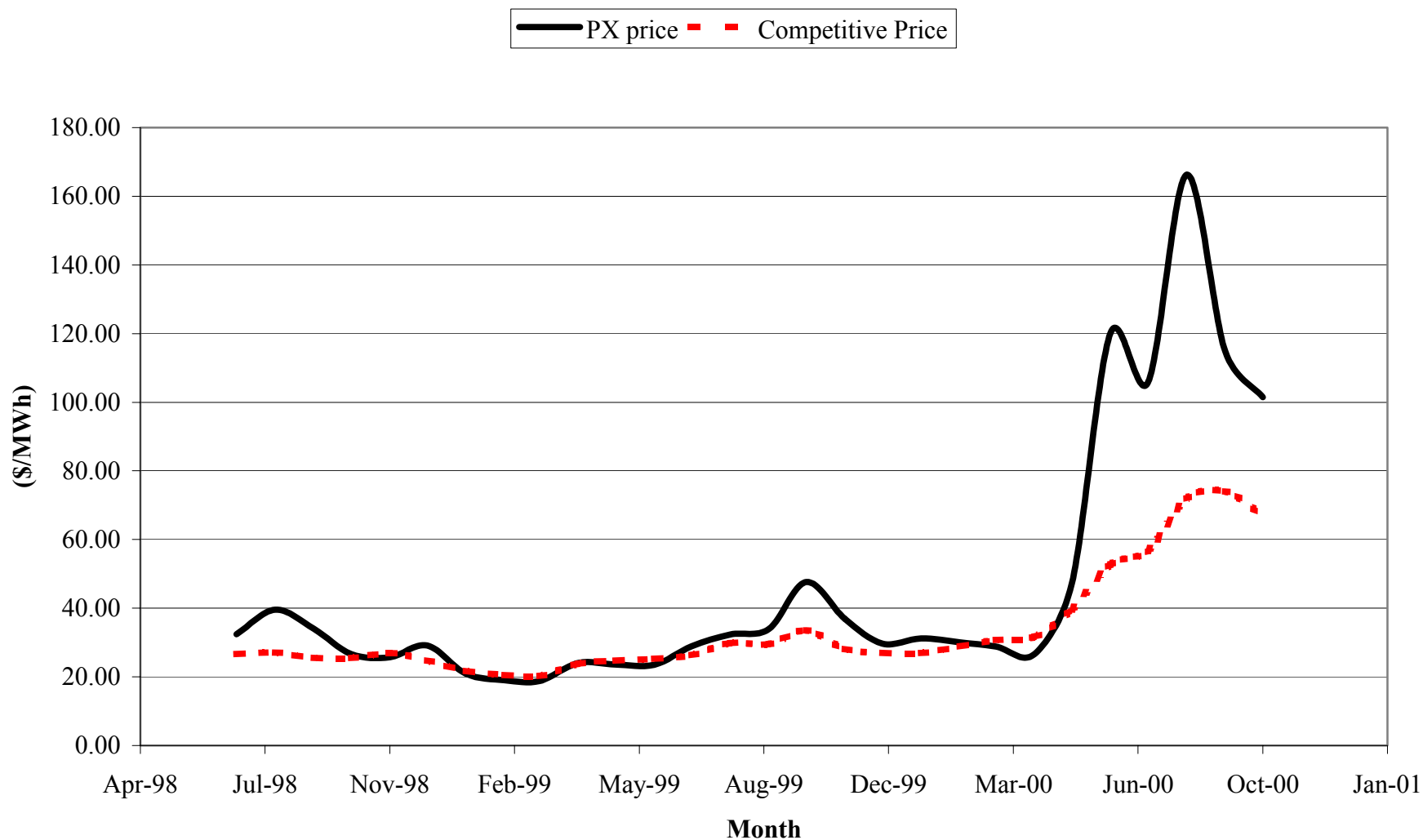
Also: Internal congestion displaces production in N. WV/ SW Pa at times (on-pk)

Lower production from high-cost units in MD, NJ post-expansion

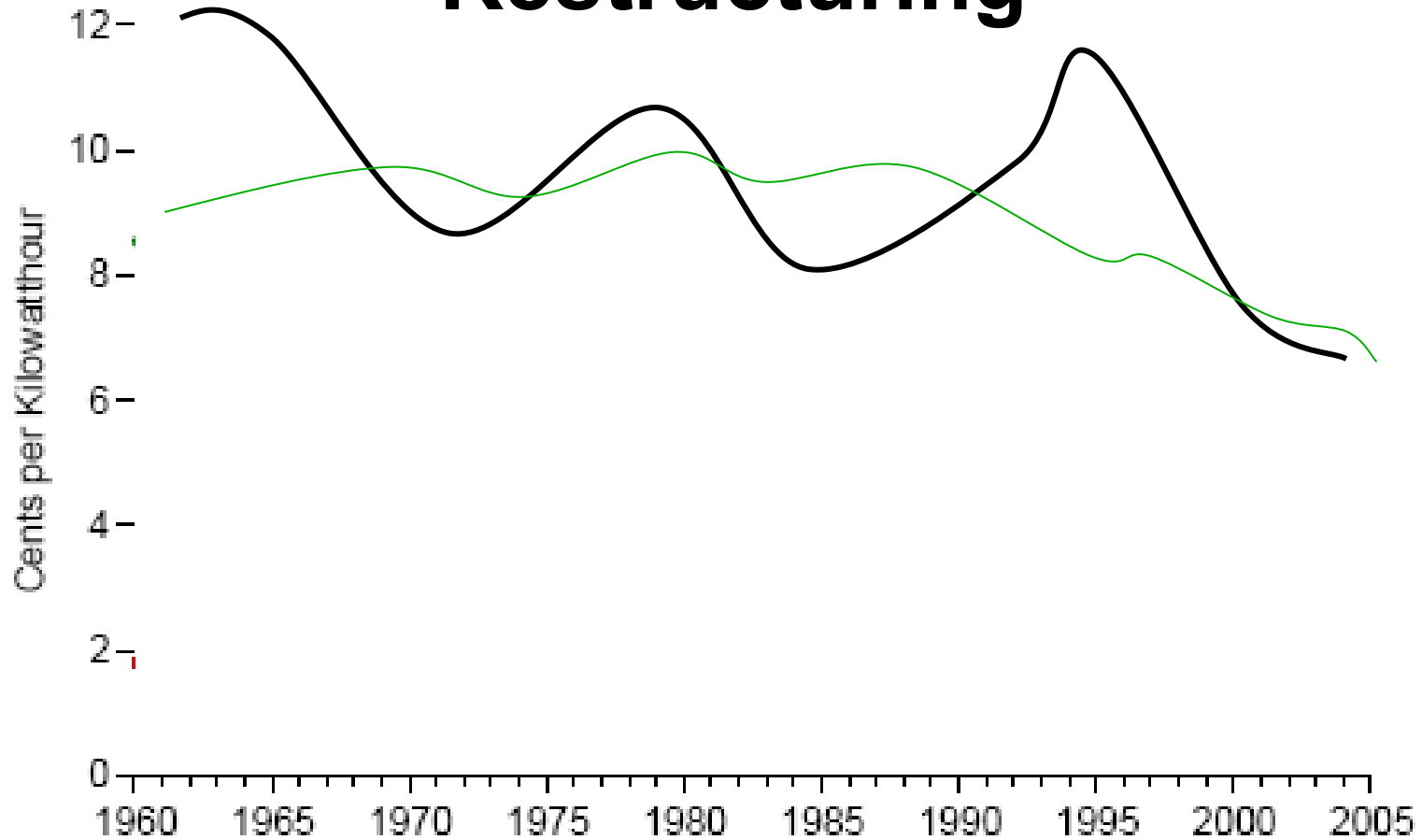
Figure 2: Nonfuel Expense Trends by Company Type and Restructuring Status



Average California PX price and MC



Theoretical Impact of Restructuring



Source: Completely fictional data made up by me.

UK Energy Price Indices

