



How Inefficient Is PJM's Capacity Market?

The Future of Power Markets

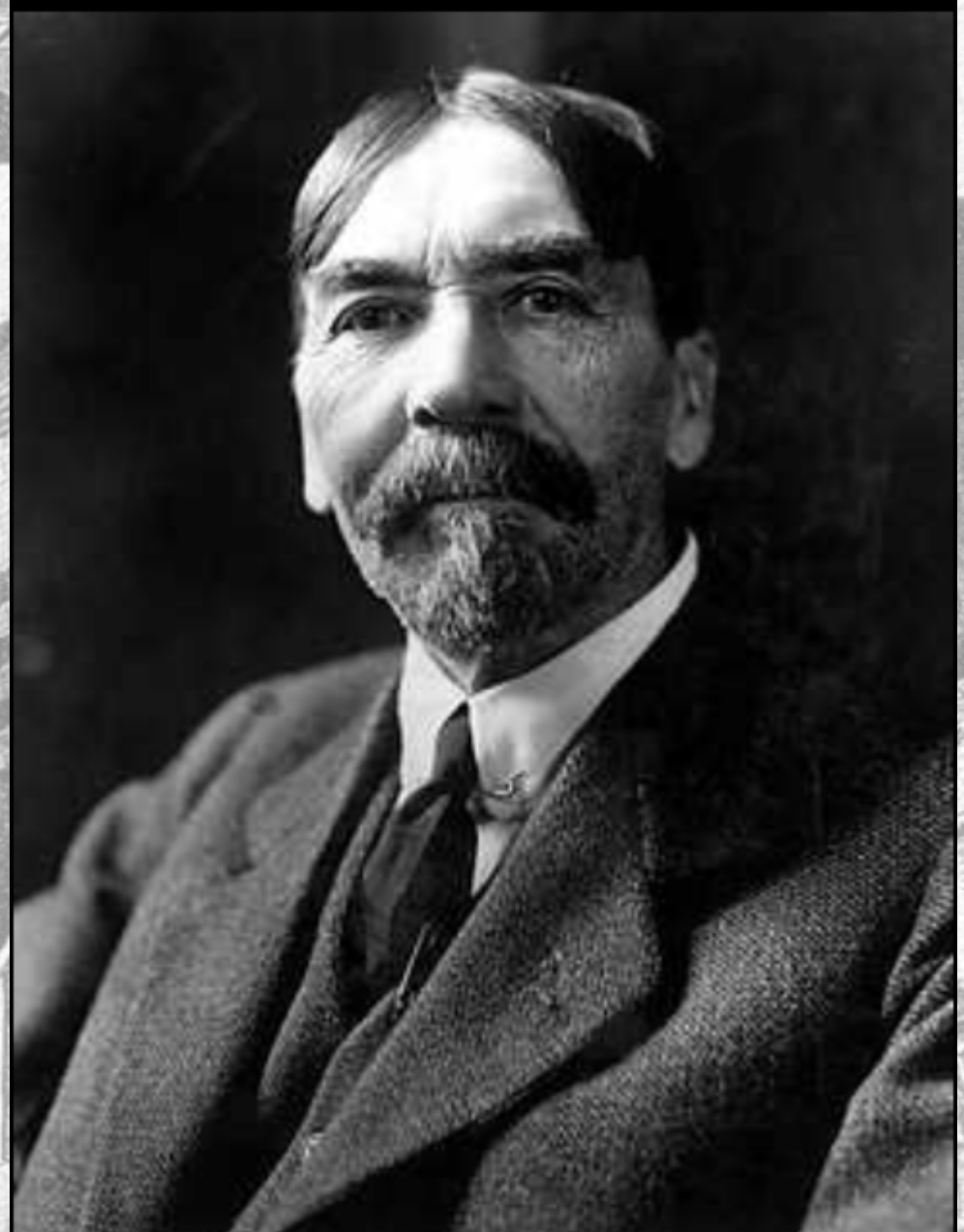
April 8, 2020

Robert McCullough

Thorstein Veblen

“[H]ere and now, as always and everywhere, invention is the mother of necessity.”

So that, in effect, all business sagacity reduces itself in the last analysis to judicious use of sabotage.





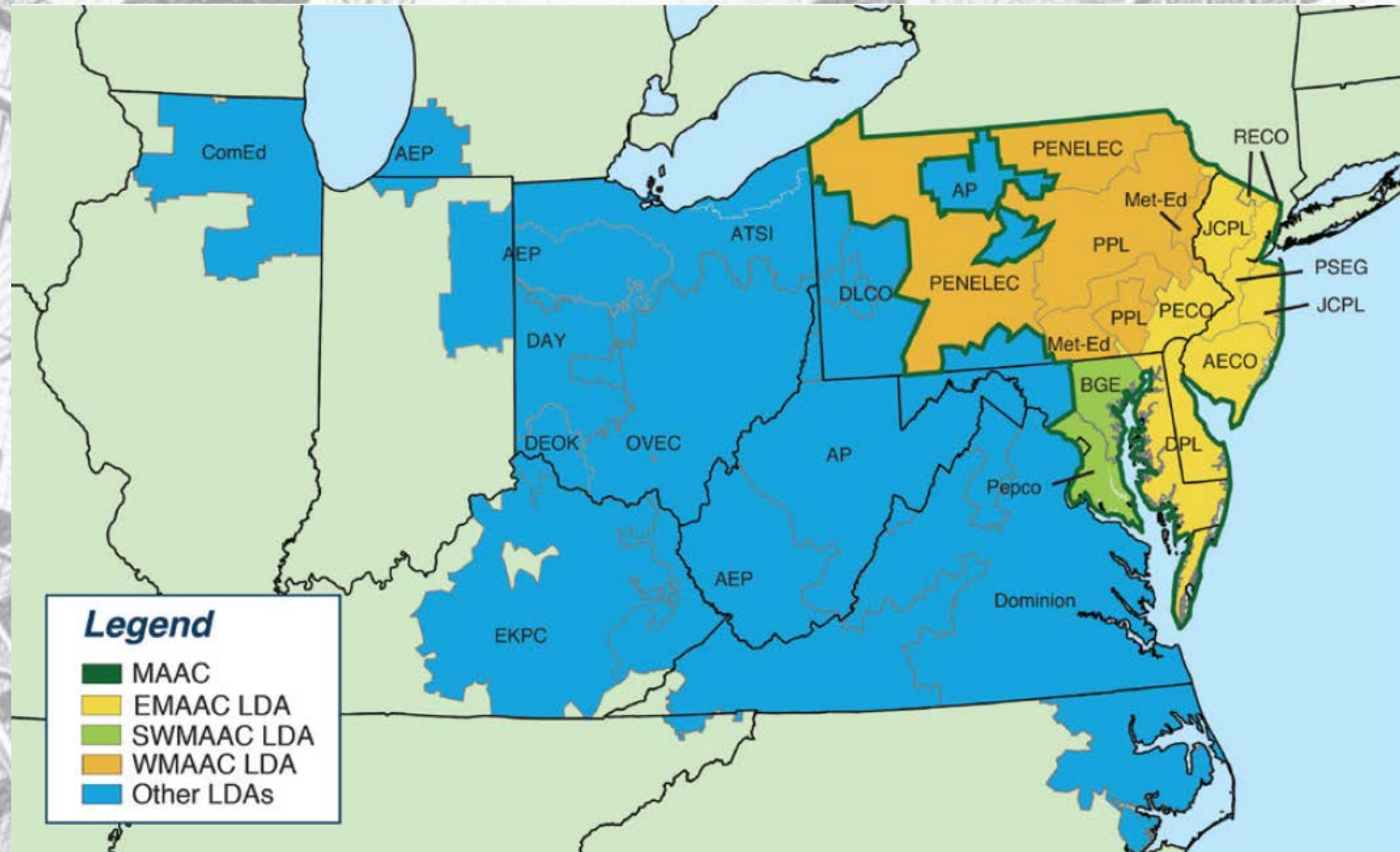
A Short History of Electric Power markets

- 1983 Contracts in the Pacific Northwest are indexed to spot wholesale prices
- 1987 FERC approves market “experiment”
- 1991 FERC approves competitive markets
- 1998 California implements a complex scheme of administered markets
- 2000 California’s “markets” collapse
- 2007 Enron’s executives plead guilty in federal court
- 2020 Administered markets continue as an inefficient alternative to competitive alternatives

A Short Geography of U.S. Power Markets



PJM: FERC's Poster Child of Administered Markets





Reliability Pricing Model

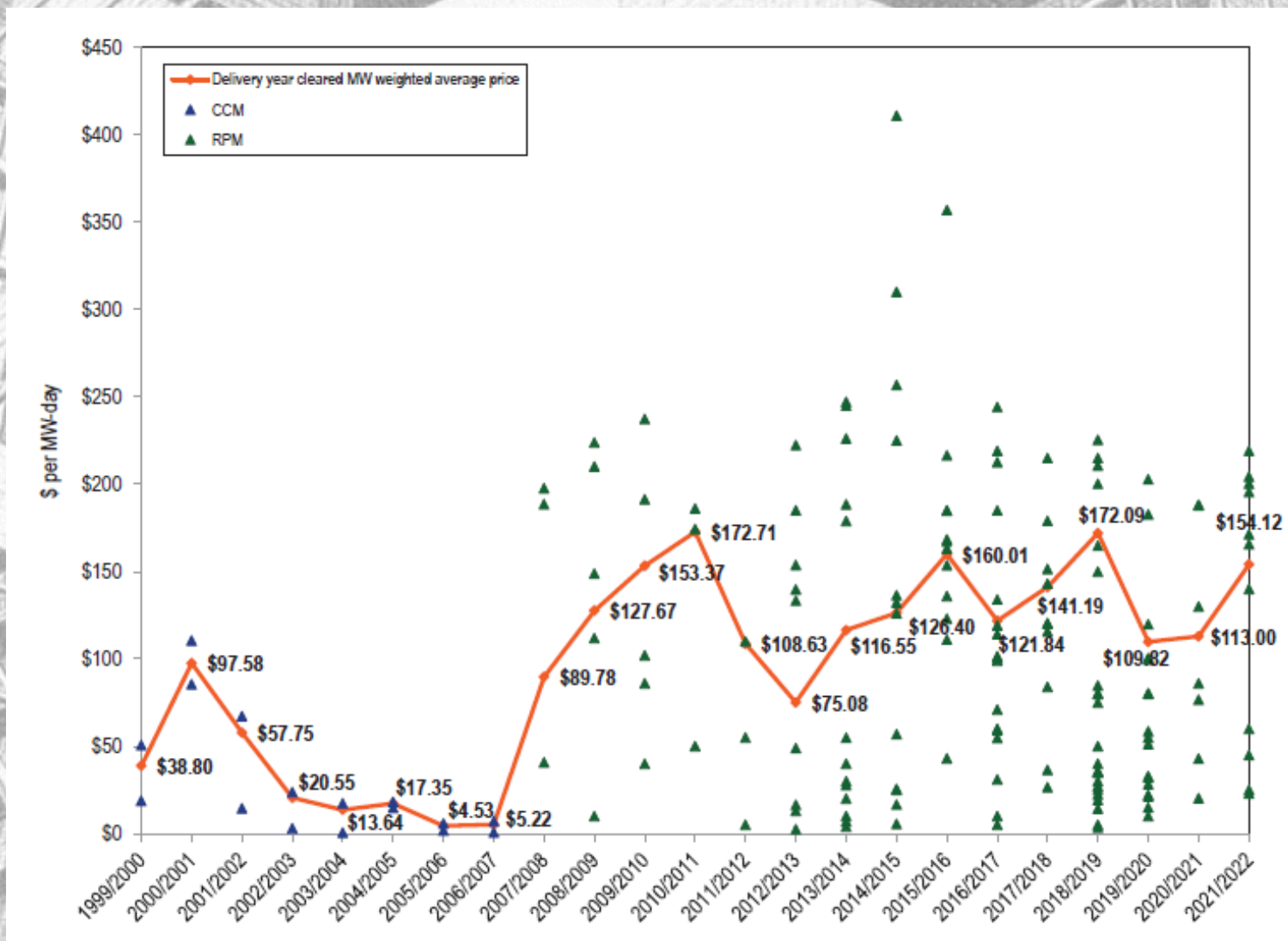
- PJM's capacity market (RPM) is an extremely complex computer based auction
- Each auction sets the price for capacity for future years
- Much of the data is secret
- Bids are secret
- The calculation of the market clearing prices is secret
- The resulting prices are highly volatile, although gradually increasing as the surplus of capacity in PJM has reached massive proportions

PJM's Market Monitor's Verdict

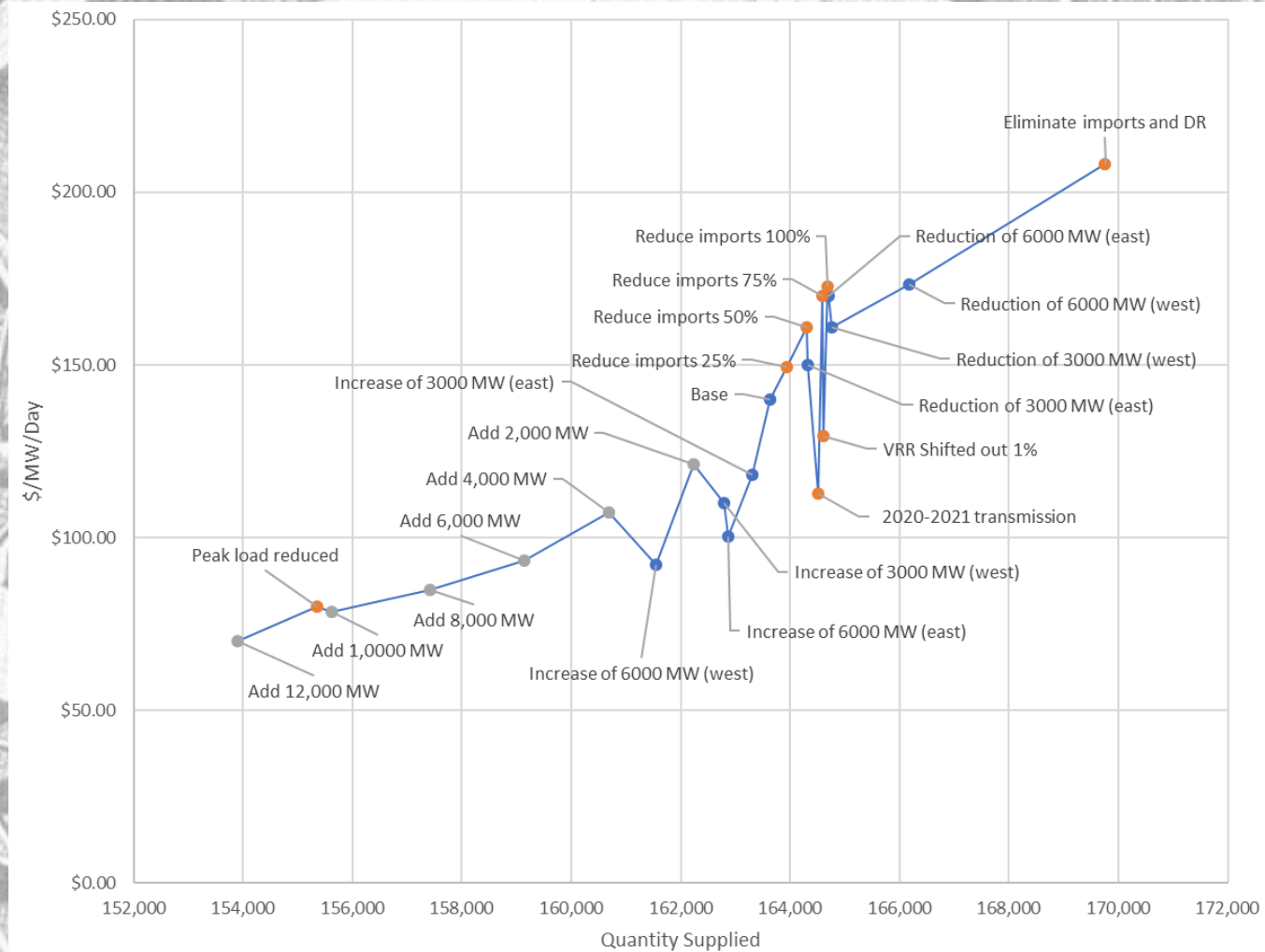
Table 5-1 The capacity market results were not competitive

Market Element	Evaluation	Market Design
Market Structure: Aggregate Market	Not Competitive	
Market Structure: Local Market	Not Competitive	
Participant Behavior	Not Competitive	
Market Performance	Not Competitive	Mixed

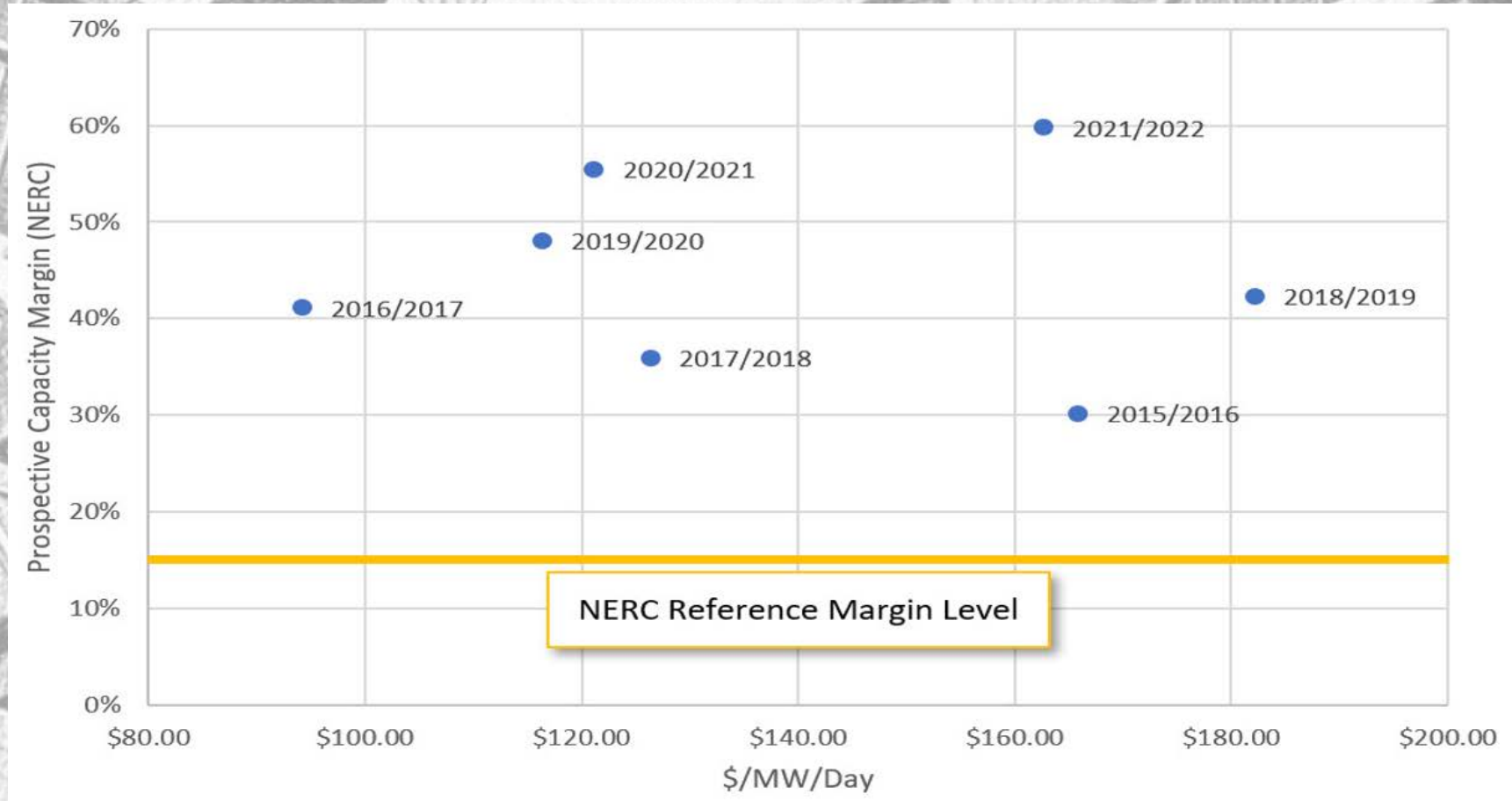
Wildly Volatile Prices



PJM's Capacity Supply Curve



PJM's Prices and NERC's Estimated Capacity Margin



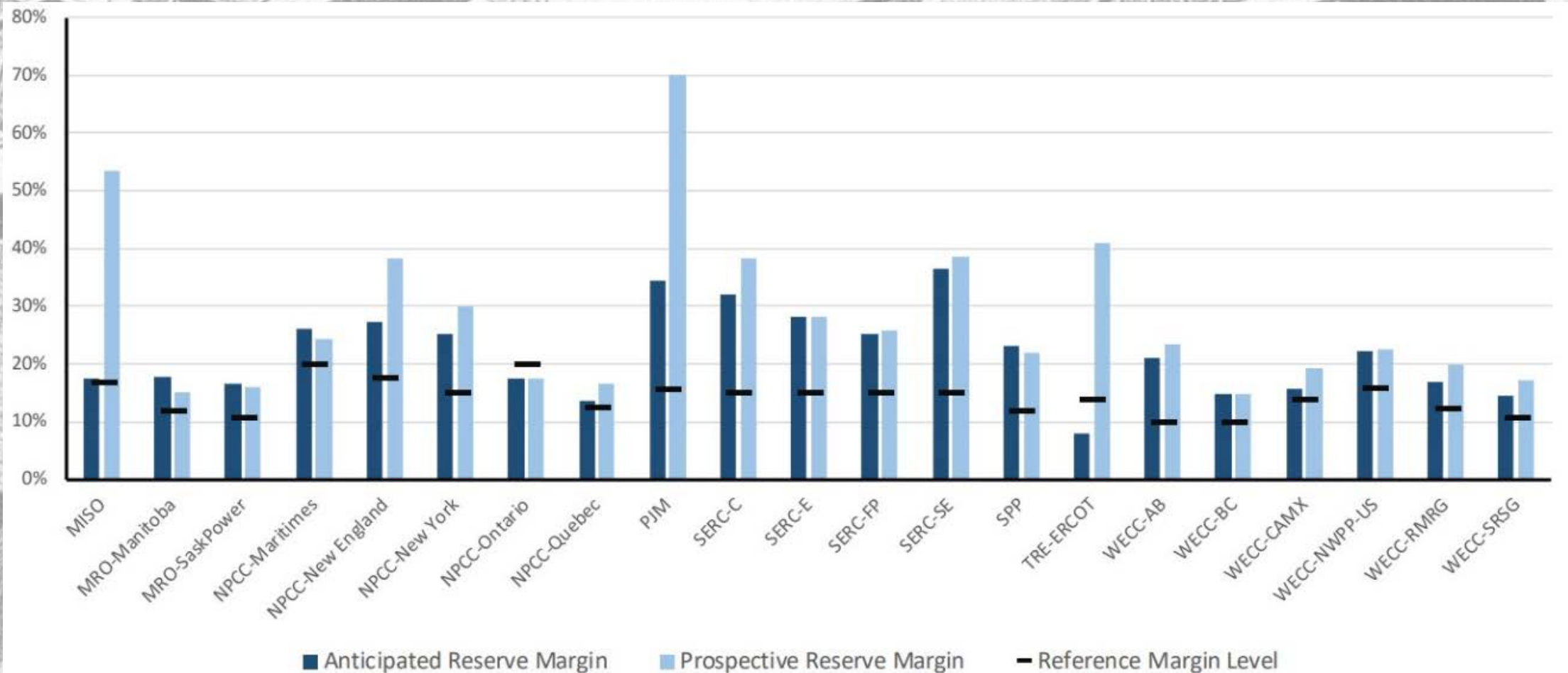
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What went wrong?

- When I was a child, the local Presbyterian pastor asked “Can God create a stone too heavy for him to lift?”
- The answer is “yes”, but God would not violate his own rules.
- Did FERC and PJM create a structure too complex to administer and regulate?
- The answer is “yes”.
- The bewildering thousands of pages of rules, undocumented calculations, and secrets have created an haven for special interests.

PJM and its Comparable Institutions





A final word

- All indications are that power prices in administered markets will continue to have a margin above competitive open outcry markets
- However, there is no indication that the effort to mandate inefficient markets will be curbed in years to come