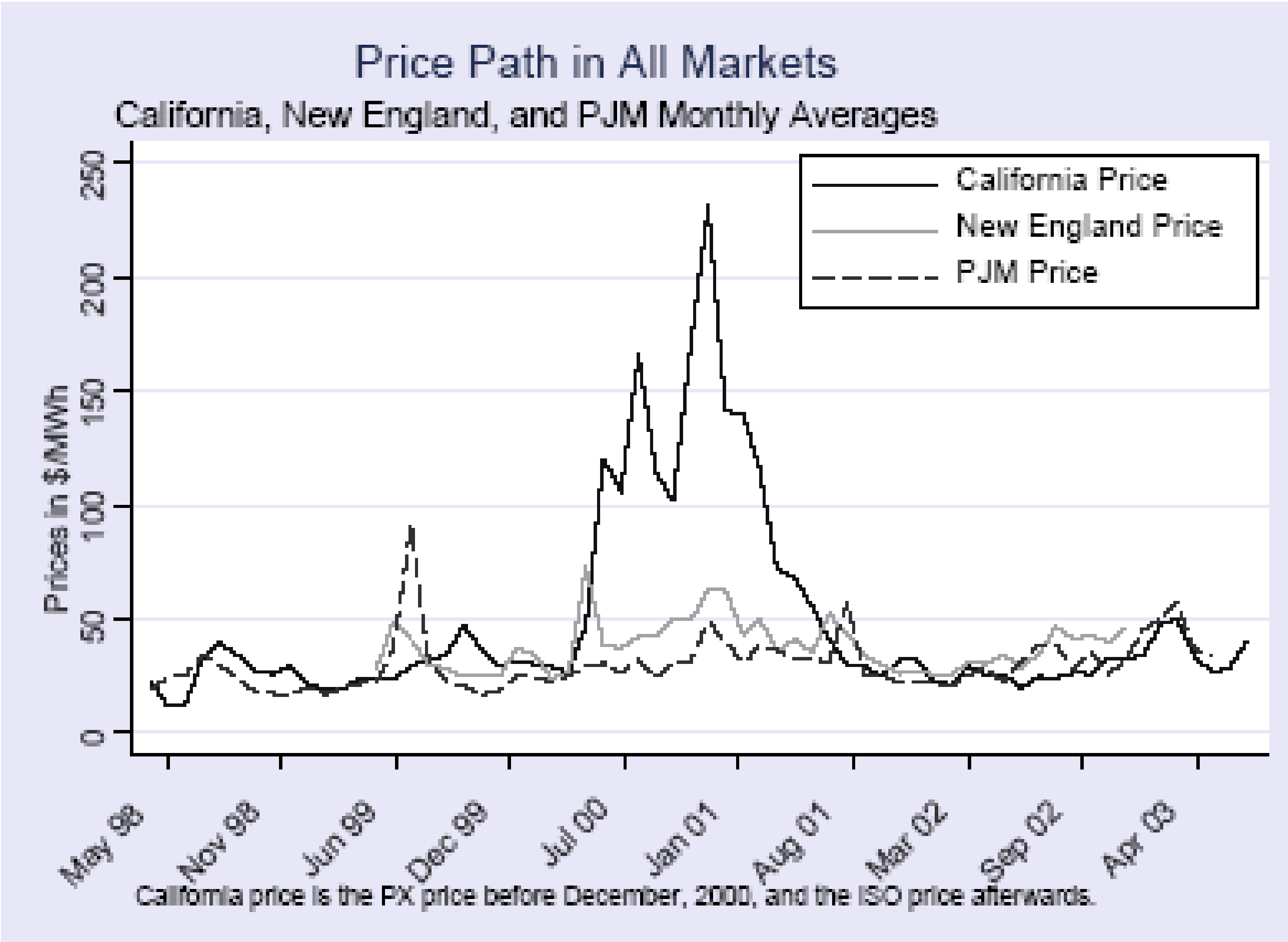
System Market Power and Hedging : Implications for Resiliency of the Wholesale Market

James Bushnell
University of California at Davis

UC DAVIS
ENERGY ECONOMICS PROGRAM

Adequate Hedging of Energy Costs in Forward Markets is Critical for System Stability

- Obvious benefit of reducing price risk of energy purchases by LSEs
- Also shown to effectively reduce exercise of supplier market power in short term markets
  - Reduces *incentive* to exploit short term structural position
  - One LSE signing contracts can reduce risks to others
- Widely accepted as necessary to support generation investment/upkeep and reliable operations



From "Vertical Arrangements, Market Structure, and Competition: An Analysis of US Restructured Electricity Markets." Bushnell, Mansur, and Saravia, 2008.

UCDAVIS
ENERGY ECONOMICS PROGRAM

The Benefits from the Previous Page are NOT provided by Resource Adequacy

- RA as currently structured was designed to complement, not replace, contracting and hedging
- RA does not hedge energy price risk
- RA *can* reduce market power when it makes resources subject to mitigation
  - But dependent upon accuracy/stringency of mitigation
- RA likely insufficient to support generation investment if not accompanied by energy contracting
- RA has its own potential market power problems

Are We Seeing Reduced Hedging?

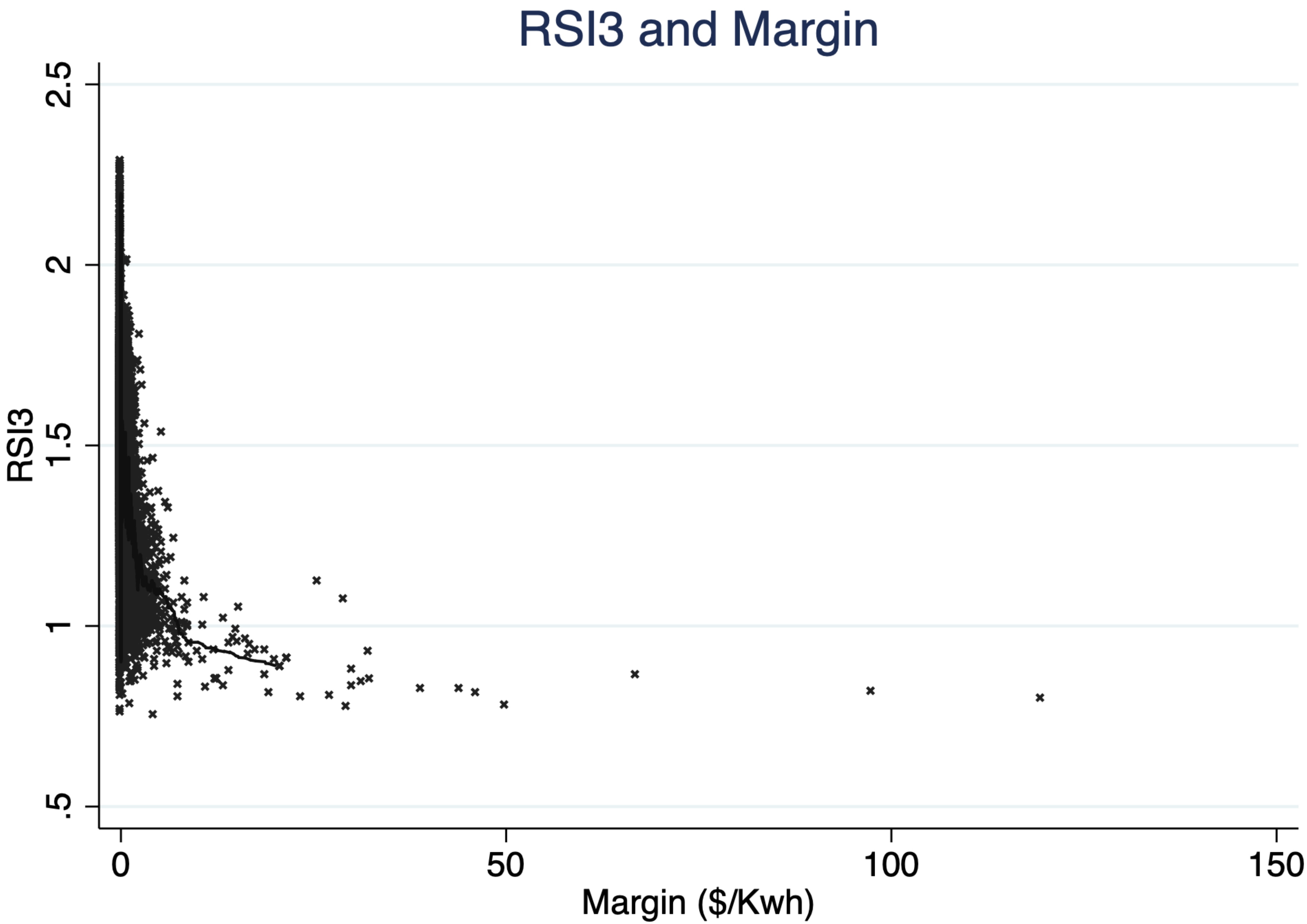
- Full data are not collected on this, *but*
- Trend of CCA growth likely contributing to
  - Reduction in hedge positions by utilities
  - Change in utility position apparently not being offset by increased CCA hedging
- Contributing factors:
  - Credit ratings of newly formed CCAs
  - PCIA moves inversely with energy price index, distorting CCA exposure to energy prices
  - Desire/pressure on LSEs to demonstrate renewable procurement and avoid being seen as buying from gas units

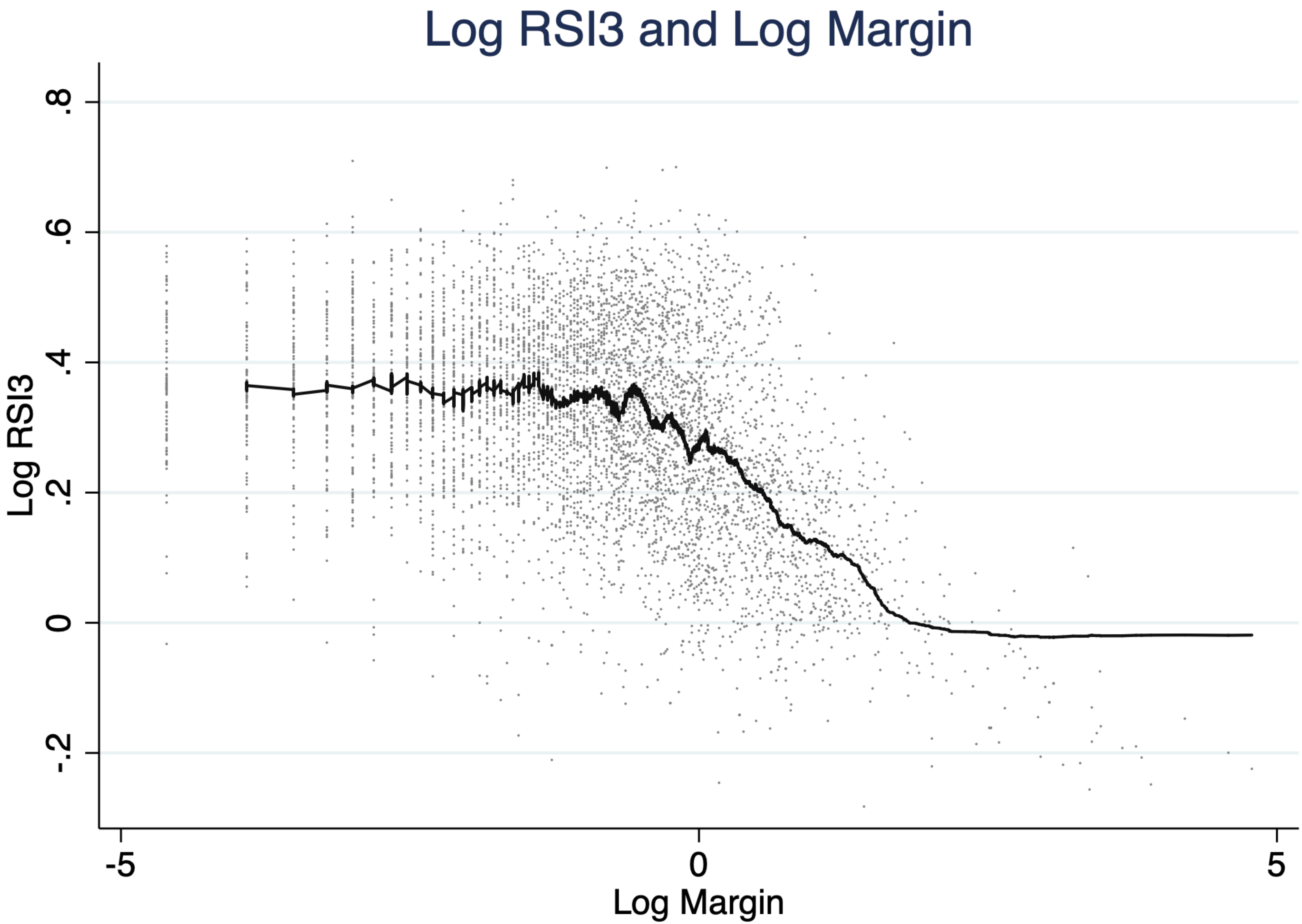
Summary

- Recent uptick in events with high systemwide margins likely indicative of reducing hedging by LSEs
  - Systemwide MP a symptom of a wider problem
- Stronger systemwide mitigation may help but would not address the other issues created by reduced hedging and contracting
  - Would be damaging if viewed as a substitute for hedging
- We should be mindful that focus on systemwide mitigation not be viewed as “solving” all the problems

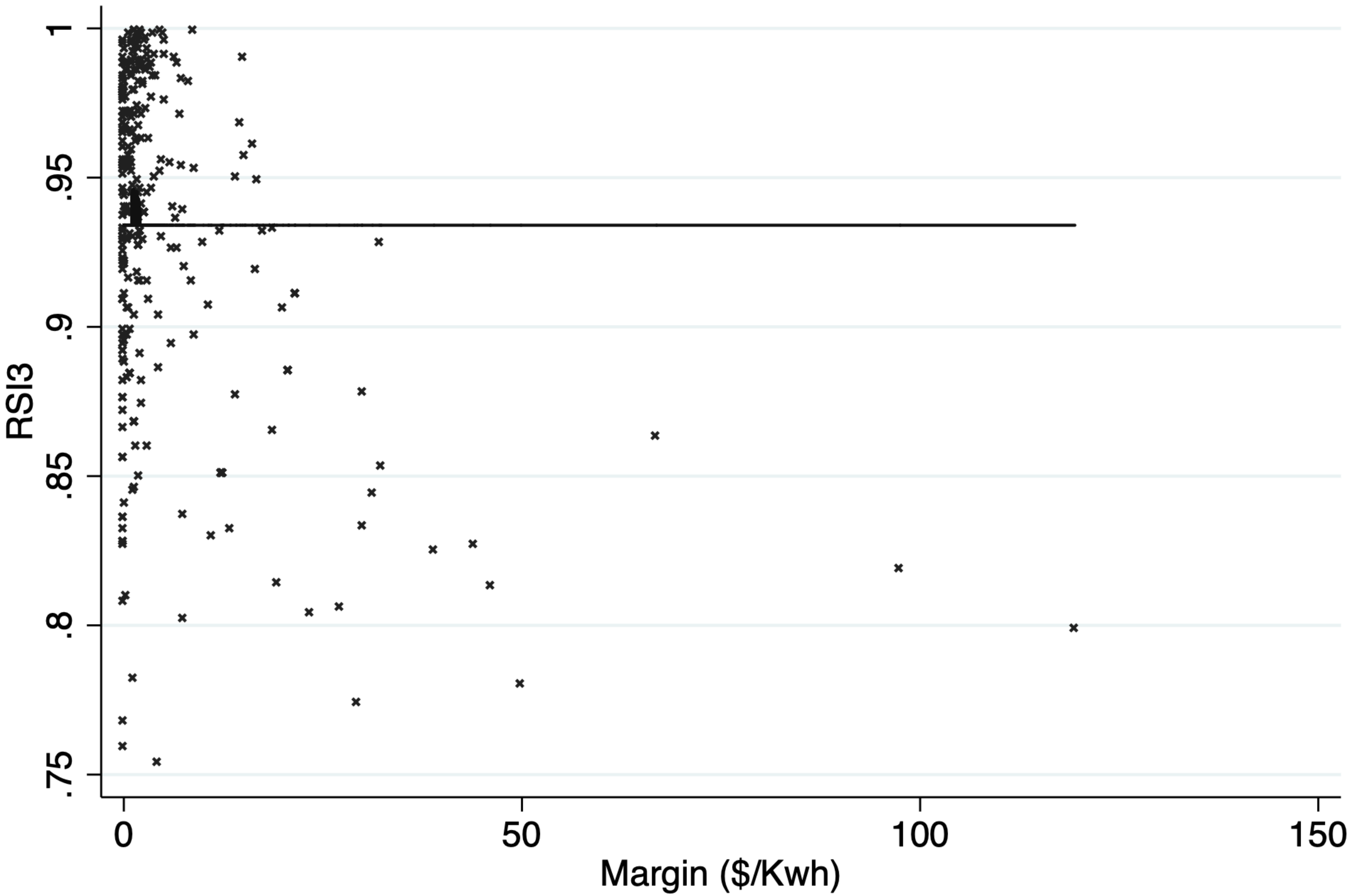
Thank you

James Bushnell
UC Davis


RSI3 and Margin
RSI3
.5
1
1.5
2
2.5
0
50
100
150
Margin ($/Kwh)


Log RSI3 and Log Margin
Log RSI3
.8
.6
.4
.2
0
-.2
-5
0
5
Log Margin

RSI3 and Margin where RSI < 1



UCDAVIS
ENERGY ECONOMICS PROGRAM