Leonard S. Hyman and William I. Tilles
SURFA Webinar
December 2016

Competition, climate and cost of capital: a look at electric utilities in the US

Note: Graphs and data for discussion of slides 2-11 can be found in our articles for Public Utilities Fortnightly or OilPrice.com. and for slide 12 in forthcoming book on UK by Leonard Hyman (Energy Acts, Public Utilities Reports, 2017).
Paradigm shifts

- Carbon (not just cost) effectiveness
- Central to decentralized (technology and choice)
- Business and regulatory structure for new risks
- Financial structure for new risks
Sample risks

- Tech and customer preference lead to on site and microgrid solutions
- Clean crowds out (strands) dirty
- Inadequate depreciation due to climate change and tech obsolescence
- Too much debt for declining industry
- Inability to control pricing or design of product
- Climate change impact on assets and service territory
- Regulator will not anticipate
- Potential competitors with enormous resources
- New central station tech upends structure
Will Trump revisit Thatcherite energy policy?
Competition ("the market") was the answer
The question was: how can we reduce electric bills and give customers choice?

• Response to a past risk transfer problem (nuclear)
• Ideological movement
• It worked in other industries
The market:

- Lowered generation operating costs
- Did not lead to lower bills (relatively) dereg vs US average
- Made generation unstable and unattractive business
- Was unable to attract long term investment to new generation or transmission (contracts or regulation required)
- Did not produce the innovations or sharp cost and price reductions seen in other dereg industries
Why not?

- Higher cost of capital (not anticipated)
- Industry was not as inefficient as believed
- Not enough competition
- Transaction costs
- Poorly designed markets and incentives (neoliberalism vs moral economy) and incomplete contracts
And what happened where it all began?

• Prices did not improve relative to neighboring countries
• Most customer savings due to regulation not market
• Customers confused by switching
• Pool market dumped due to ease of manipulation
• Not enough competition
• Market unable to attract capital for generation
• Regulated utilities highly profitable despite RPI-X regulation
• Unregulated generator/retailers barely earn cost of capital
• RPI-X morphs into rate of return (which it was anyway)
The kids are alright
(for now)
Up to date (late November) cost of equity (total return) rough and ready calculations

• Based on historical experience, stock investors earn nominal return of corporate bond yield plus 3.5%
• Total return equals dividend yield plus growth rate
• CBY = 4.5%, DY=3.7%, TR=8.0%, GR=4.3%
• That’s right, calculated electric utility cost of equity capital is 8% (more or less)
• Actual EEI TTM ROE=9%
• Actual EEI M/B ratio= 145%
A growth industry: growth of what?

• No sales growth absolutely while GDP up
• Industrial activity up but industrial kwh sales down
• Sales down vs population and GDP- secular trend
• Electric car add 30+% to sales— timing?
• LED could reduce sales 10%— timing?
• Utility strategy: grow rate base—consequences?
Grow the rate base

- Averch-Johnson hypothesis
- Clear indication since 2000— equity +124% and sales +9%
- Only pays if rate of return exceeds cost of capital
- A-J plausible because ROR almost always exceeds COC
Final thoughts

- Regulated profits high and market knows it
- Unregulated profits make that business unviable
- Any amount of competition introduced into a no-growth, leveraged business is dangerous
- Nobody can predict the future so plan for scenarios
- Everyone thinks they can get out because bubbles deflate slowly but they really burst quickly
- Electricity is too important to leave to chance