Flexibility and risk transfer in electricity markets

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Setting

Oligopoly

- sequential competition: stage-game actions strategic substitutes
- so what can you do to commit?
- sequential production: produce twice, sell once or twice.
  - Either over- or under-commitment depending on cost of the sequential choices
- forward market: produce once, sell twice
  - Allaz and Vila (1993) result, except when adjustments are prohibitably costly

Results

welfare

- opening a day-ahead market is socially beneficial
- down-side: transfer of risk to consumers

technologies

- strategic use of inflexibility
- results from the technological assumptions such as "diseconomies of scope" are insightful (even without competition)

Questions

Investment

- If technologies are endogenous: what technologies would emerge in equilibrium?
- what market design could minimize the investment distortion?

dynamic competition

- firms play this two-stage game frequently: repeated game
- In collusion, they should avoid using both sequential markets more than what is efficient for the collusive outcome. Having the two markets may discipline collusion? Liski&Montero, JET 2006
- what market design could mimize the scope for collusion?