Effects of Cross-Market Combinations:
Theory and Evidence from Hospital Markets

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Motivation

- Standard horizontal merger theory is about combinations of rivals competing for the same end user of a given product or service, i.e. *same market mergers*

  - Enforcement has therefore focused on these

- Many combinations span different geographic or product markets, i.e. *cross-market mergers*

  - Cross-geographic market combinations

    - Hospitals: Baylor and Scott & White; Community Health and Health Management Associates

  - Cross-provider (and geographic) market combinations

    - Post-acute care: Kindred (LTAC/rehab) and Gentiva (home health/hospice)

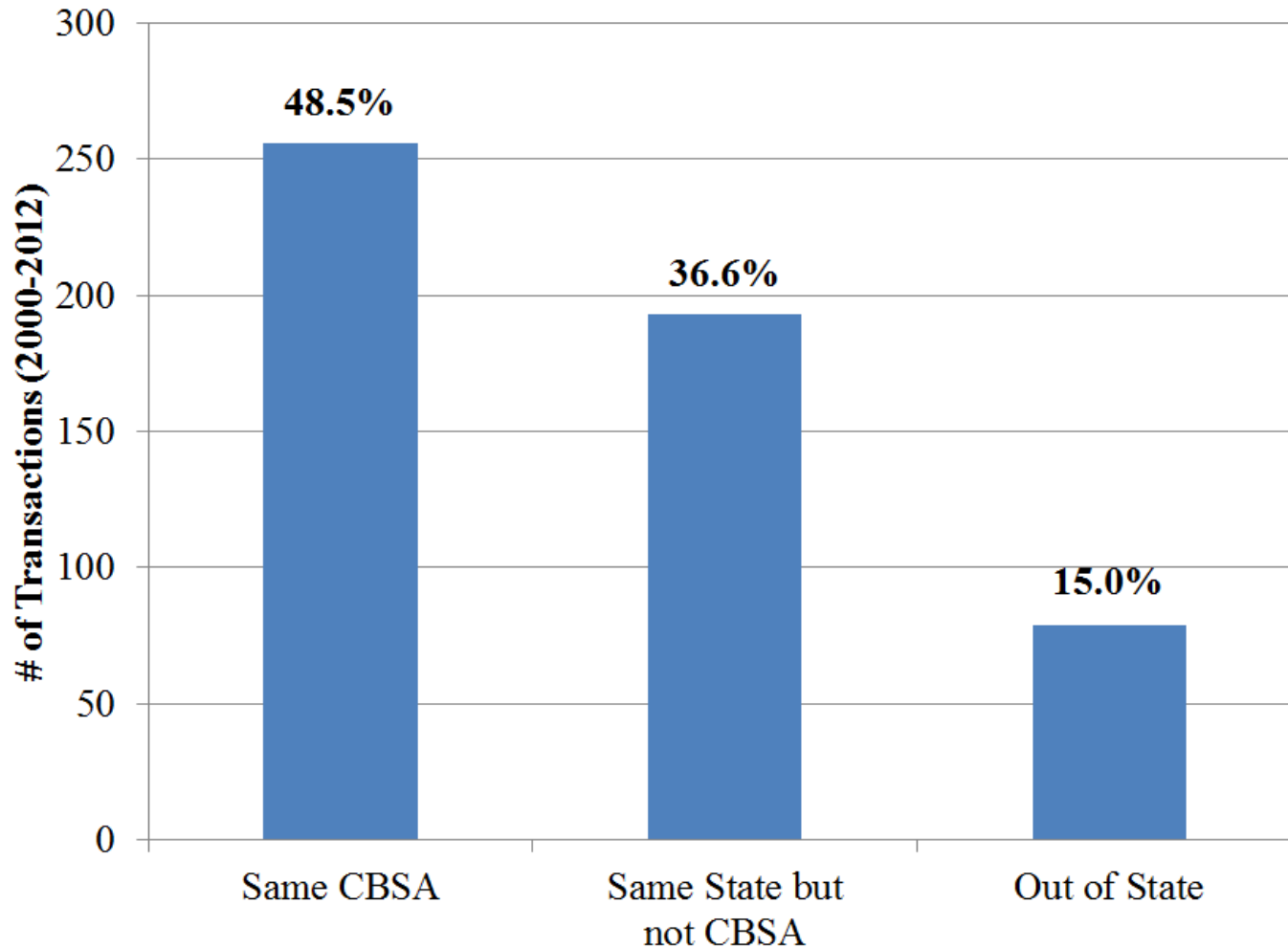   - Chronic disease: DaVita (dialysis) and Healthcare Partners (MDs)

Hospitals have been consolidating into larger systems
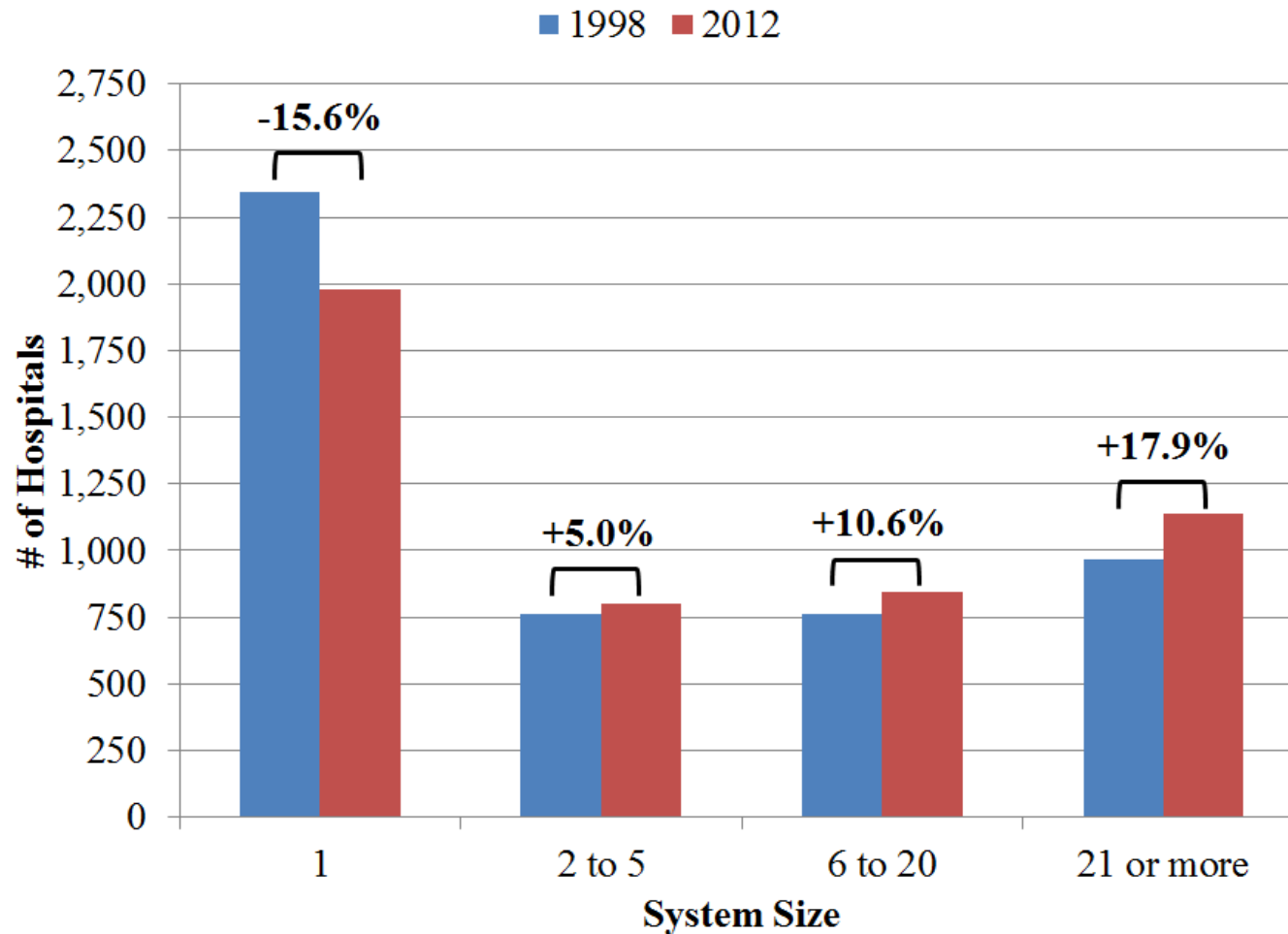
Many hospital mergers do not have any traditional horizontal overlap

Notes: Counties outside a CBSA are treated as their own CBSA in the above. Dafny, Ho, Lee (2015)

Recent evidence suggests cross-market mergers tend to lead to higher hospital prices

- Anecdotal
  - Community Tracking Study of 12 metro areas (Berenson et al 2012)
    - *"Numerous participants in contract negotiations between health plans and hospitals noted that provider leverage depends on how big the hospital or hospital system is and how much of an insurer's patient volume it generates."*

- Systematic
  - Hospitals joining systems with a member in same broad metro area increase price 4-7 percent (Cuellar and Gertler 2005)
  - Acquisition by a system leads to higher prices even when other members are outside broad metro area (Lewis & Pflum (2014, 2015)

How might cross-market mergers lead to price increases?

- Many possibilities:
  - Imperfect adjustment for service and patient mix
  - Improvements in quality
  - Changes in bargaining skill or ability to bear risk
  - *"Common customer" and "common insurer" effects (focus today)*

- Some are more compatible than others with standard antitrust law
  - Section 7 of Clayton Act forbids acquisitions whose effect "may be substantially to lessen competition, or to tend to create a monopoly"

Providers in different markets may have common customers and/or common insurers

| Factor	Effect on competition	Effect on price
Common customers	If same customers value both providers, their combination can lessen competition for inclusion in insurance plans	⬆
Common insurers	If same insurers negotiate with both providers, their combination can change the bargaining problem they are solving	⬆⬇ ?

Deep dive: "Common Customer Effect"

- Focus to date: competition among hospitals for the same service
  - Under standard model only a merger of hospitals that compete for the same patients affects joint bargaining position and therefore the negotiated price with insurers
- Reality: customers purchase option to use a *bundle* of provider services from insurers
  - If same customer values both providers, the providers are substitutes vis a vis inclusion in the bundle
    - E.g. employer with employees in both relevant geo markets
    - E.g. families who value both adult and pediatric hospitals
- This **common customer effect** should be stronger for mergers in close proximity
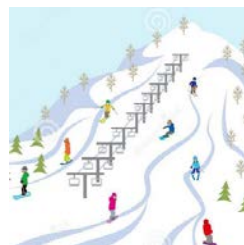
Deep dive: "Common Insurer Effect"

Town A
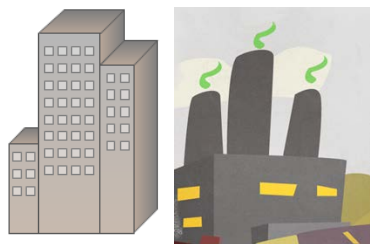
Town B

Insurer ---p_A^*--- Hospital A

Insurer ---p_B^*--- Hospital B

$premium_A^*(p_A^*)$

$premium_B^*(p_B^*)$

- Suppose premium elasticity is higher in A. Combined industry profits would be larger if Hospitals A and B merge, and Hospital A lowers price and Hospital B raises price. Weighted average price effect is ambiguous

- Additional mechanism: political constraints in Town A yield $p_A < p_A^*$

# What is net effect on price? An empirical study of cross-market hospital mergers

- <u>Challenge</u>: Mergers/acquisitions are not random
- <u>Approach</u>: Study hospitals that are "bystanders" to mergers. Compare merger effects for hospitals with strong vs. weak common customer/insurer effects
- Two groups of mergers
    - *FTC sample*: investigated and consummated mergers Investigation → market with horizontal overlap
        - Throw out the horizontal overlap
        - Study merger effect on affiliated hospitals
    - *Broad sample*: culled from Irving Levin reports
        - Drop "crown jewels" and any merging hospitals within 30 min' drive time

Source: Dafny, Ho, Lee (2015) working paper

Empirical Approach: Overview

Consider two different types of "treatment hospitals"

Merger of System A and System B

Adjacent treatments

Non-adjacent treatments
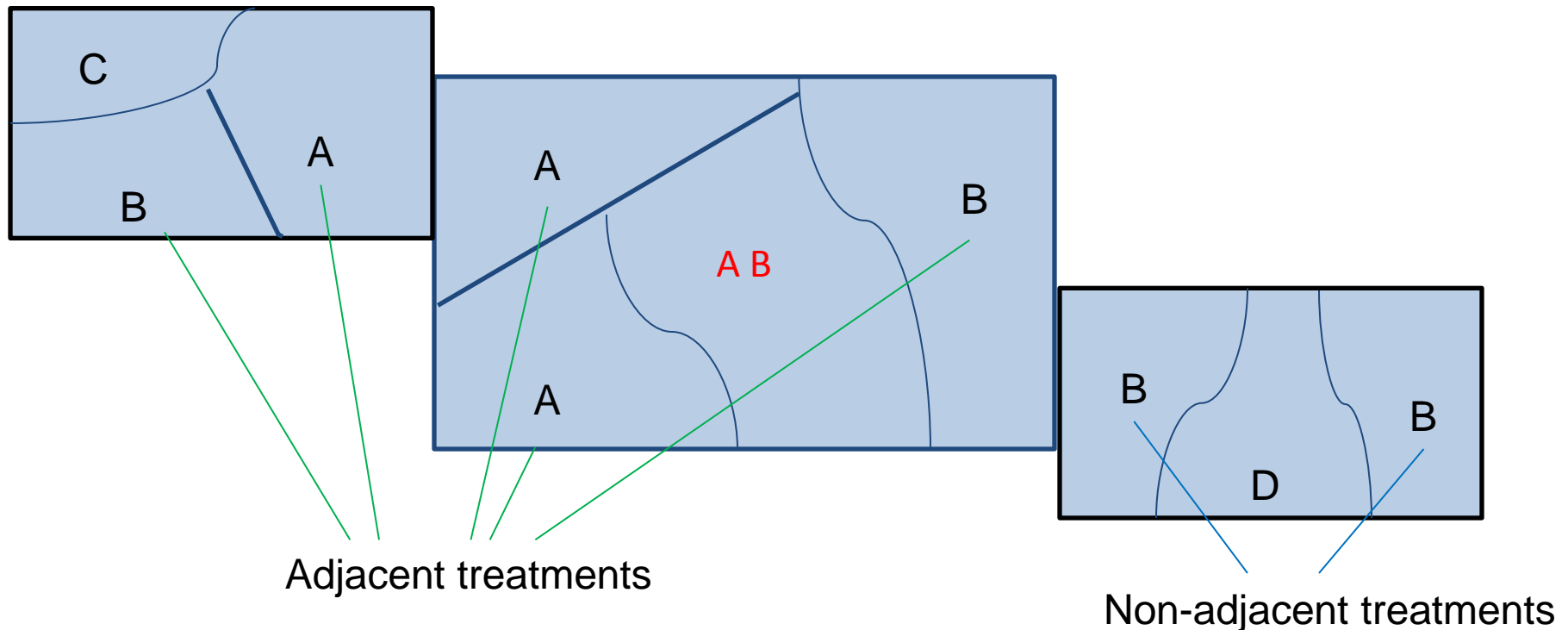
Notes: Each rectangle is a state; wavy lines signify within-state geo markets

Results: FTC Sample

- Post-merger price increase of 5 percent for adjacent hospitals

- No increase for non-adjacent hospitals

- All estimates are relative to control hospitals unaffected by mergers
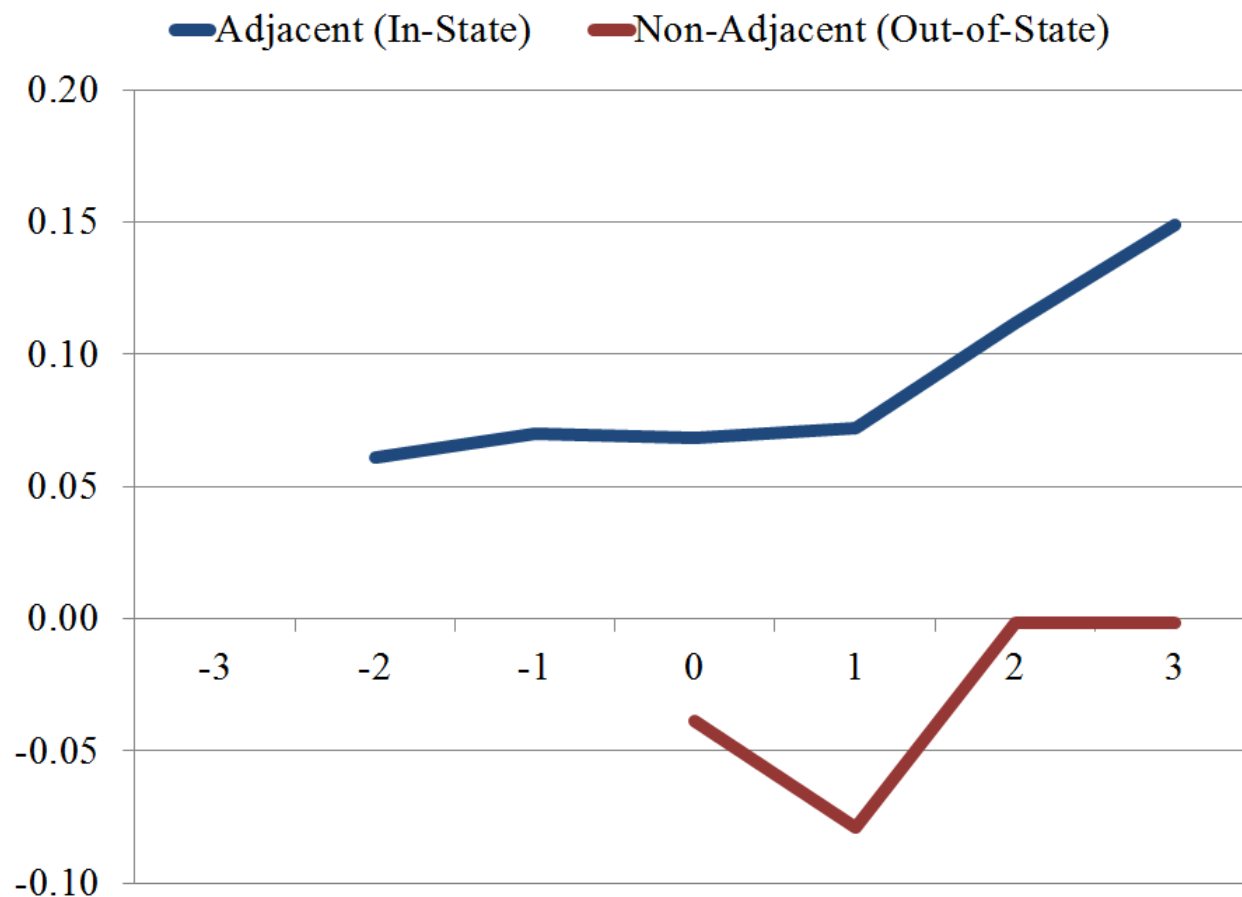
Notes: Graph of coefficients from regression model of same-hospital price growth, controlling for year, case mix, beds, % Medicaid, and for-profit status

Results: Broad Sample

- Post-merger price increase of 10 percent for adjacent hospitals

- No increase for non-adjacent hospitals

- All estimates are relative to control hospitals unaffected by mergers
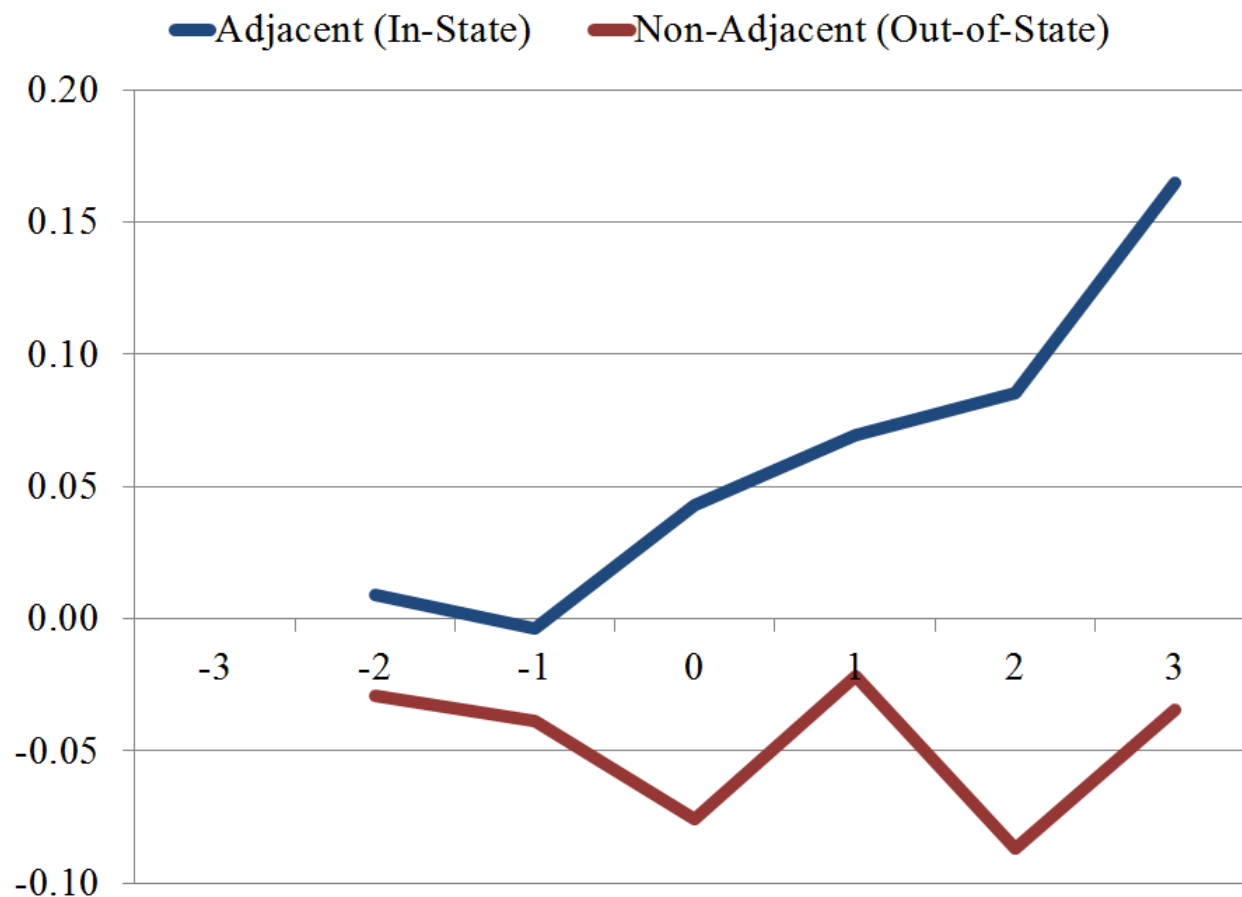
Notes: Graph of coefficients from regression model of same-hospital price growth, controlling for year, case mix, beds, % Medicaid, and for-profit status

Preliminary Conclusions and Implications

- Adding adjacent system member → P ↑ 5 - 10%

- Adding non-adjacent system member → no P change

- Common customer effect + common insurer effect are largest for adjacent additions

- Suggests hospitals in different, nearby, markets can constrain one another's pricing because contracting occurs at broader geographic units

  - We are currently working to disentangle common customer and common insurer effects

- Enforcers may need to broaden criteria for deal investigations

  - But there must also be a limiting principle