Effects of Mergers on Incentives for New Technology Adoption

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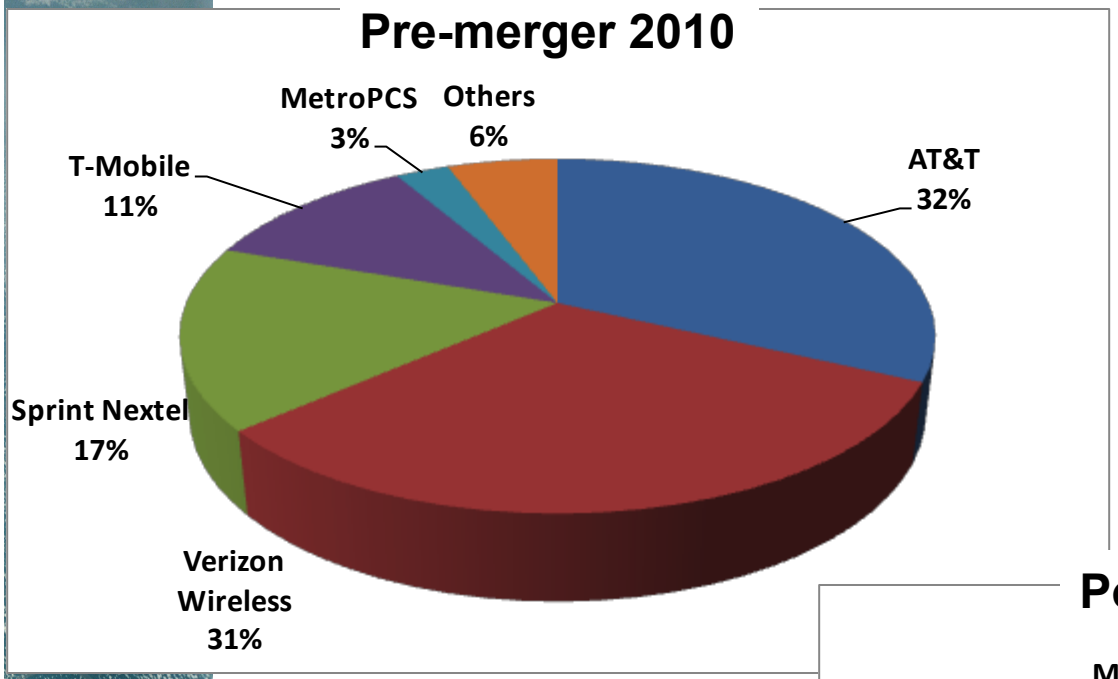
Context

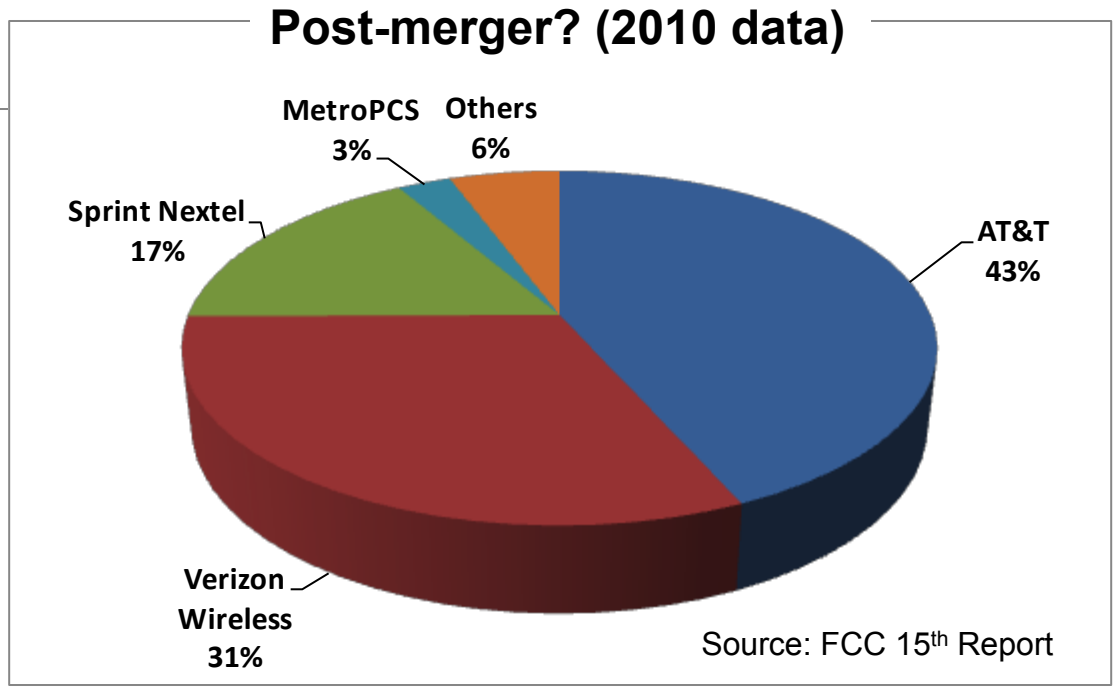
- Two mergers stopped by regulators
  - Advanced technology adoption
  - AT&T purchase T-Mobile's U.S. assets (2011)
  - GE-Honeywell (2001)
- Were regulators right that
  - Consolidation trumps technology?
  - Rivals won't upgrade?

AT&T and T-Mobile

- Merge two of four largest
  - AT&T 98.6 million connections
  - T-Mobile 33.6 million connections
  - Together 90% of U.S. homes
- DOJ petitions to stop (Sept. 2011)

"Market" Shares





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DOJ Press Release

"…would substantially lessen competition… resulting in higher prices, poorer quality services, fewer choices and fewer innovative products..."

- T-Mobile is
  - innovative
  - disruptive and challenger
  - positioned to be affordable to average customer

AT&T/T-Mobile argument

- Need radio spectrum for faster migration to 4G
  - Have HSPA+. Want LTE.

- Is this true?
- Wouldn't greater concentration decrease adoption incentive?

GE-Honeywell

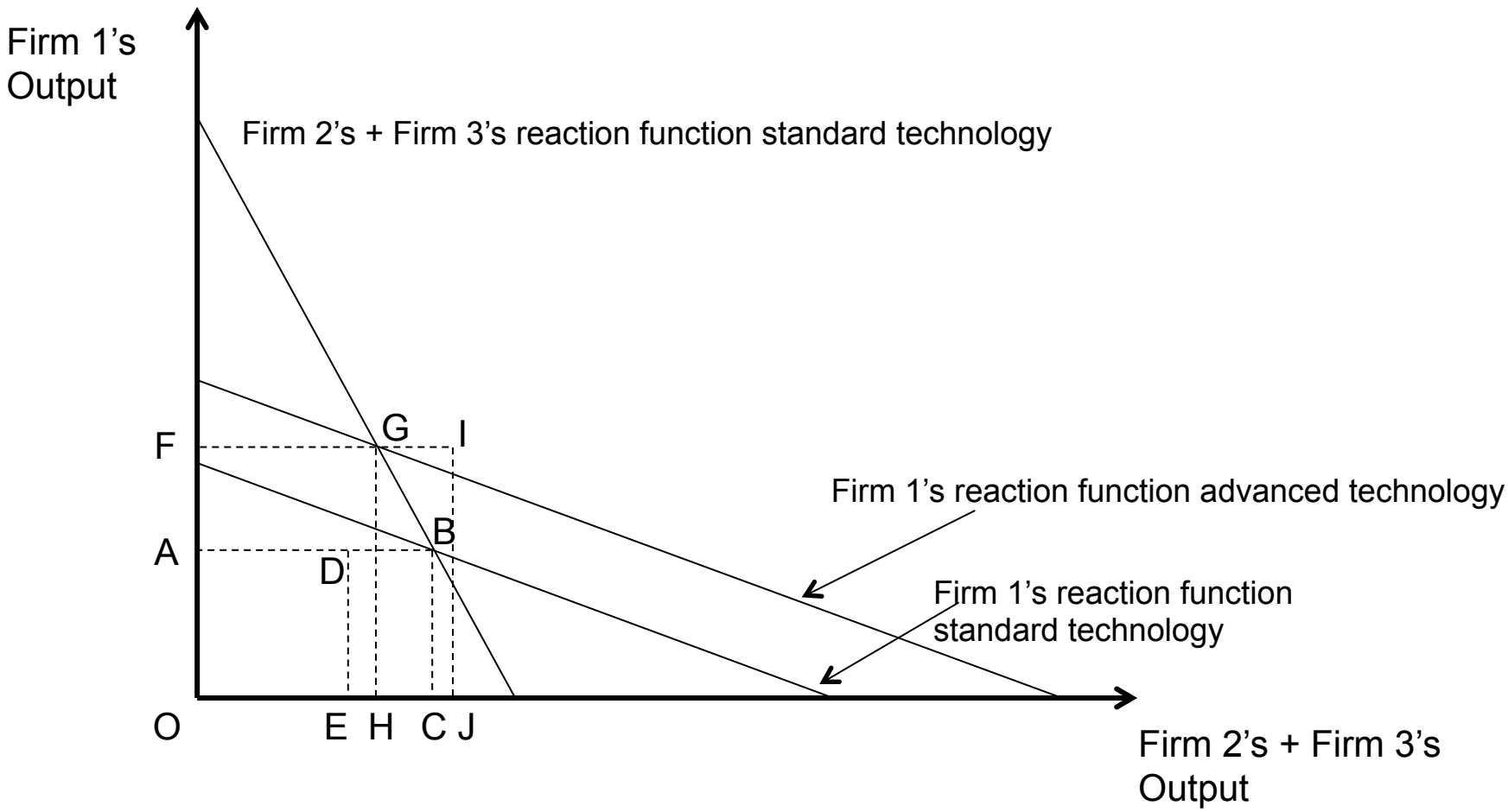
- US and Canada approve
- EU rejects
  - Portfolio Effects, i.e., combined products provide unique value
  - And rivals cannot match

- How does higher quality affect rivals?

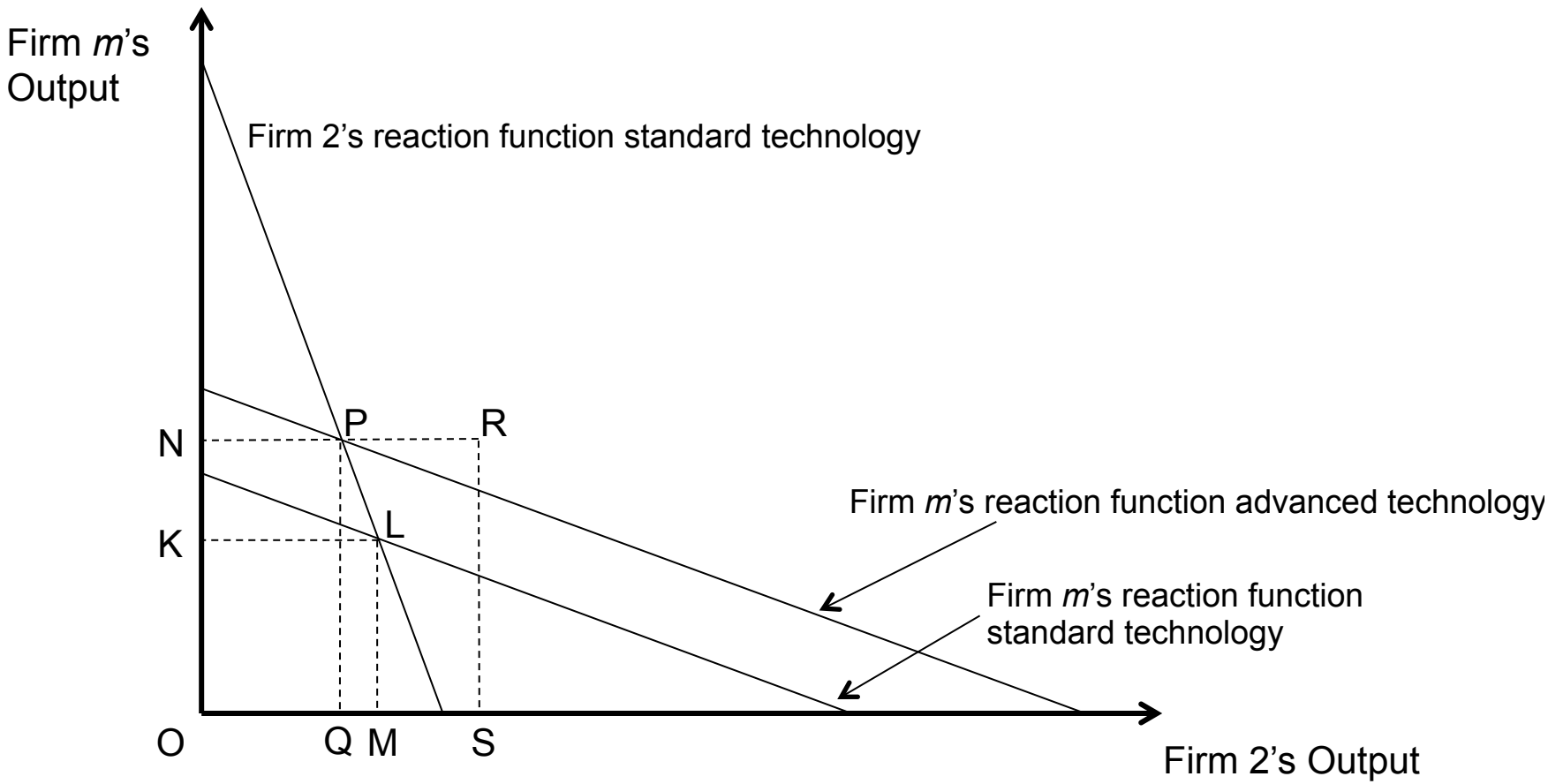
Our Approach

- Assume 3 firms compete á la Cournot
  - Exogenous merger of two firms
- Test merger's impacts
  - Incentives to adopt advanced technology
  - Rivals' incentives to adopt
  - Fixed cost thresholds
- Also other forms of competition

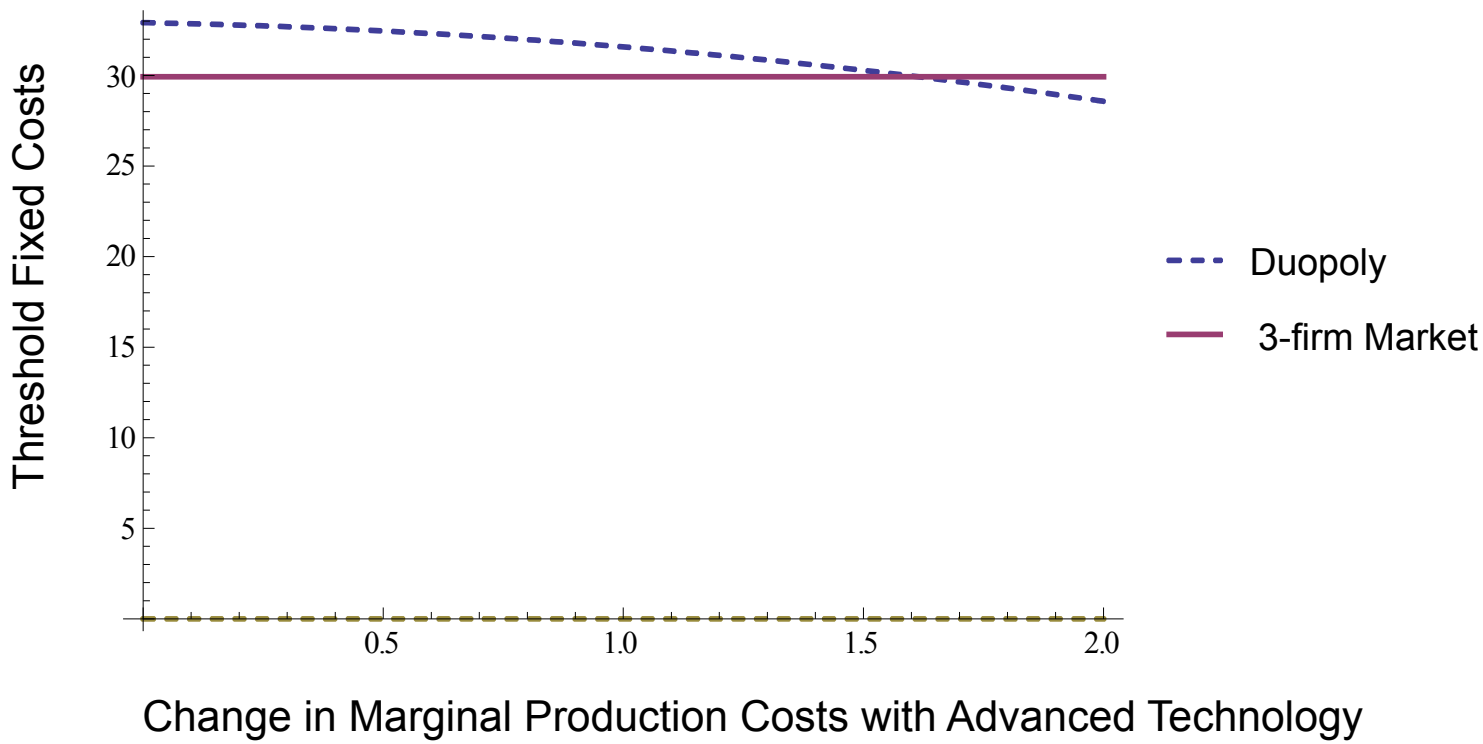
Impact of Single Firm Adopting Higher Technology in 3-Firm Market



Impact of Single Firm Adopting Higher Technology in 2-Firm Market



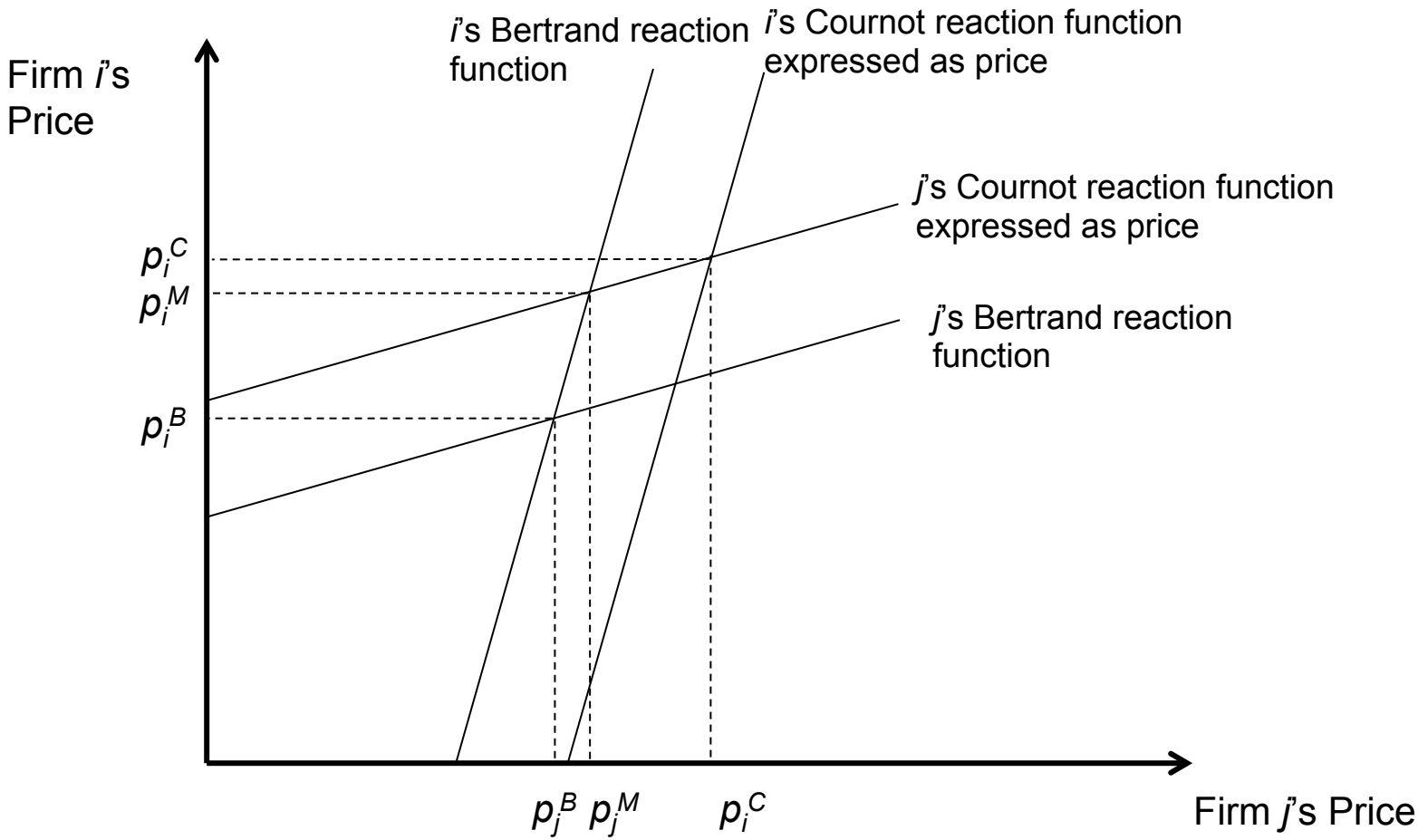
Comparison of Threshold Fixed Costs with Cournot Interactions and Varying Marginal Costs



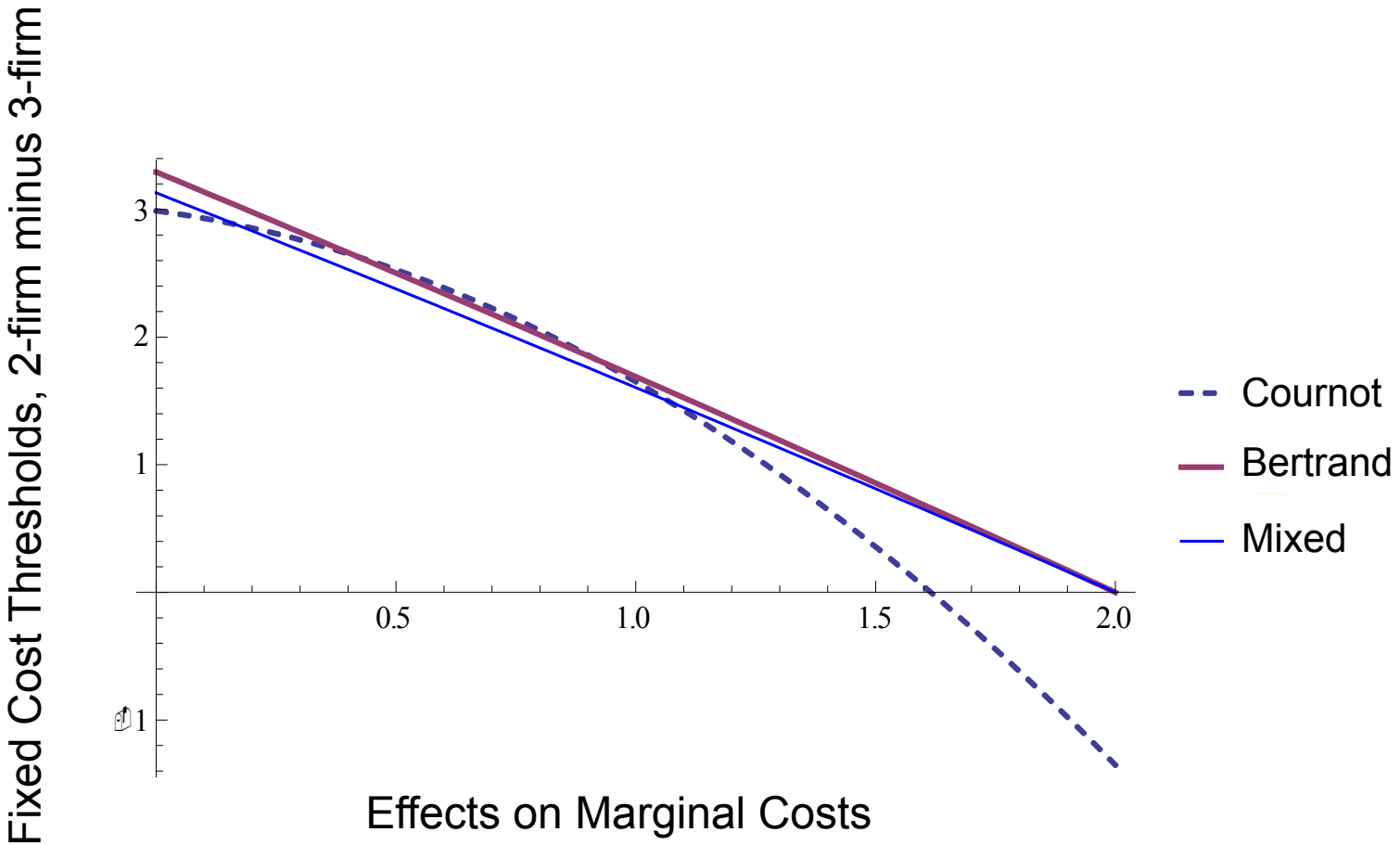
Why?

- Merger increases the number of customers for covering fixed costs
- Merger allows capture of greater portion of economic value

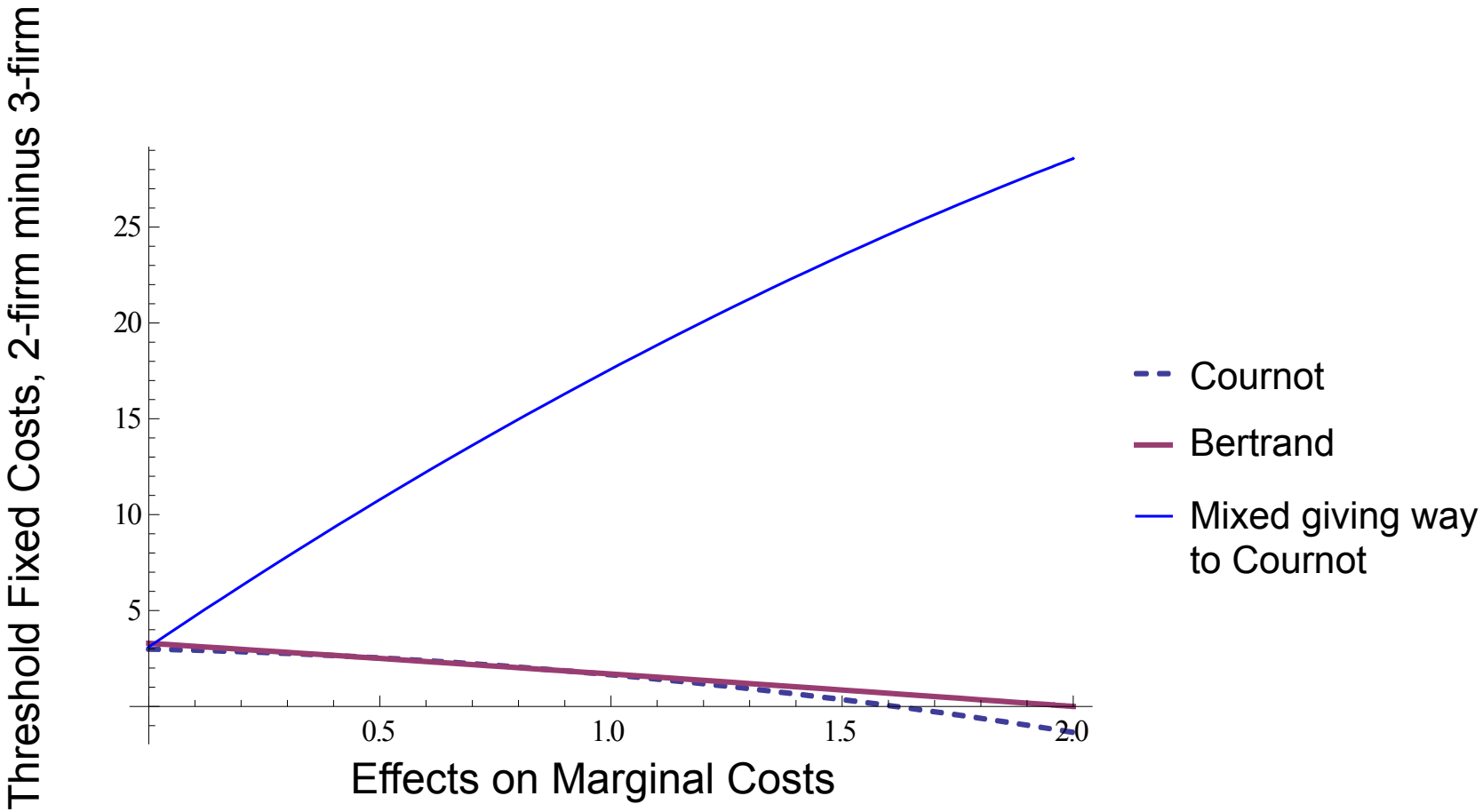
Duopolist Reaction Functions in Cournot, Bertrand, and Mixed Competition Expressed as Prices



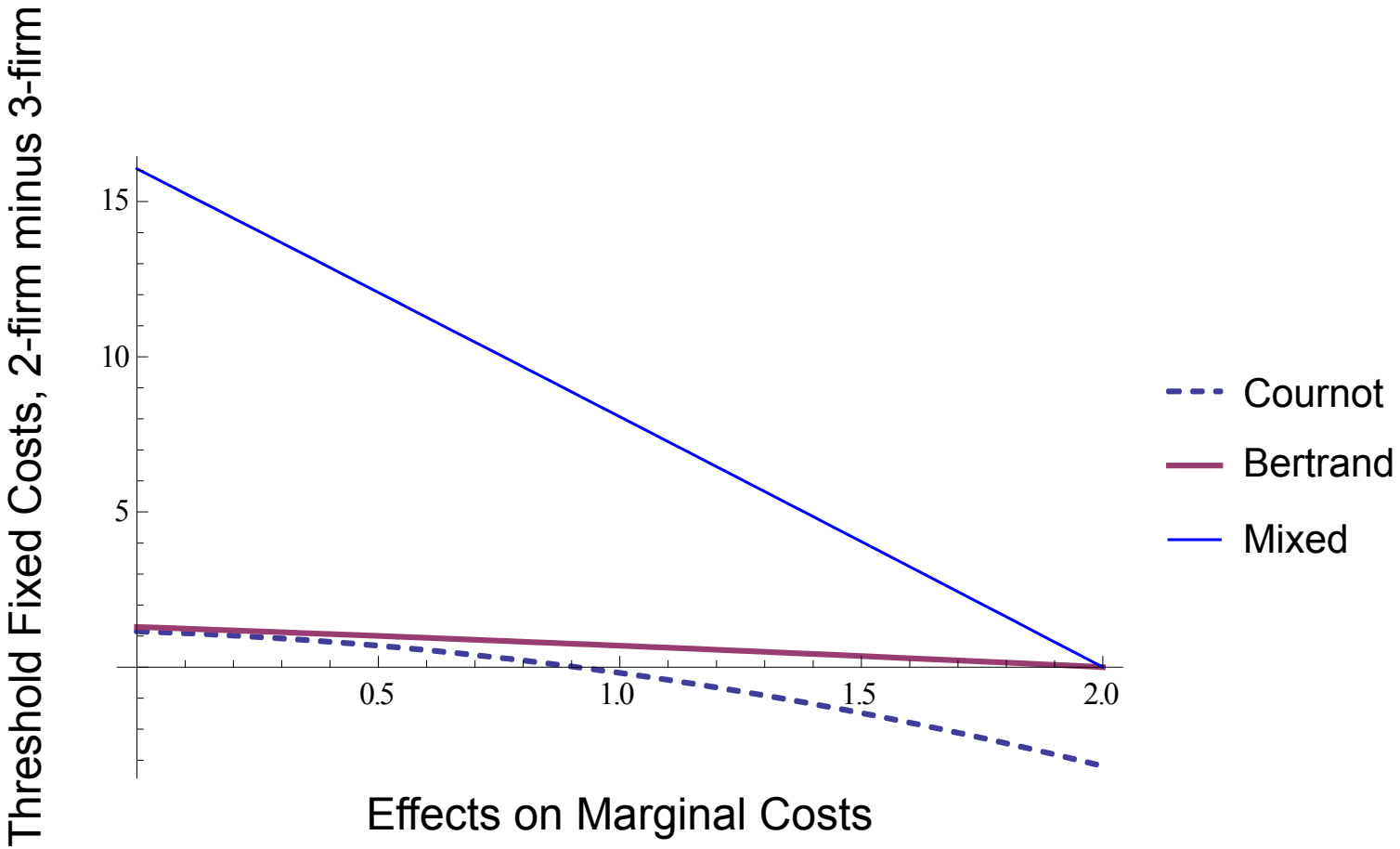
Comparison of Pre-Merger and Post Merger Technology Adoption vs Marginal Costs, No Network Effects



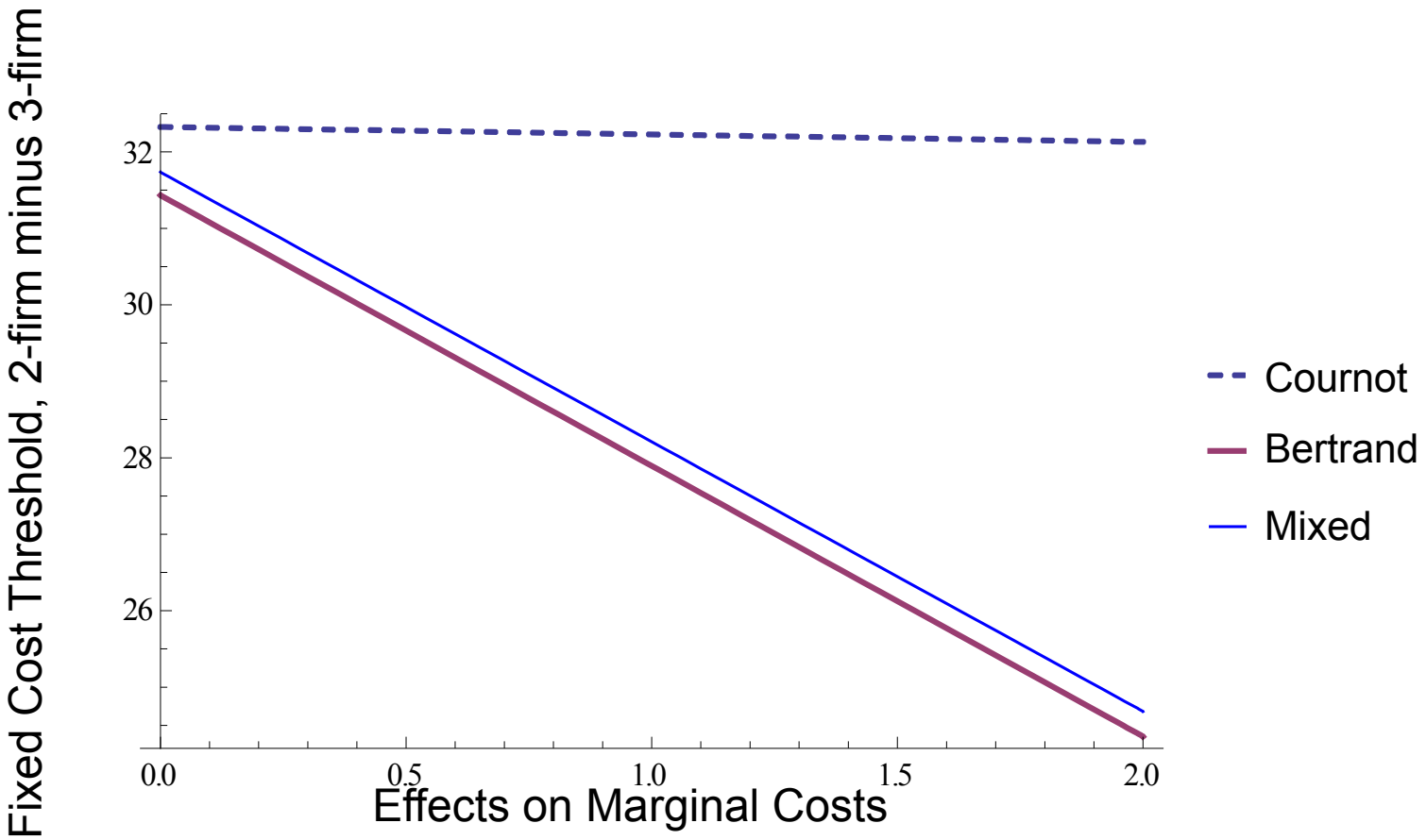
Comparison of Pre-Merger and Post Merger Technology Adoption vs. Marginal Costs, No Network Effects



Comparison of Pre-Merger and Post Merger Technology Adoption vs Marginal Costs, No Network Effects, with low-quality rival



Comparison of Technology Adoption vs. Marginal Costs, No Network Effects, for Duopoly where Rival has Upgraded



Conclusions

- AT&T and T-Mobile appear to have been correct that merger would speed 4G
- EU possibly wrong that rivals would not innovate to match GE-Honeywell

Thank you

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