The Effect of a Merger on Investment
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- Part of a long but scarce agenda of research exploring mergers with endogenous investment
- Very useful work on a very difficult issue
- Focus on merger between equals
- The general picture that emerges is that absent synergies in investment, accounting for investment doesn't change the conclusion that consumer surplus is reduced by a merger

Summary with cost reducing investment

- **Simultaneous game:** prices are not responsive to competitors' investment (not observable)
- Negative feedback loop
  - A merger raises price and reduces output of merging entity
  - Output reduction reduces incentives to invest of merged entity ()
  - Other firms may expand output but not enough to compensate
- **Sequential game:** prices are responsive
  - Additional strategic effect: abstaining from investing raises competitors prices
  - A merger has two effects on the merged entity
    - ★ internalization reduces strategic effects between merging products
    - ★ internalization raises the gains from reducing competitors prices (gains on all merged products)
  - A merger also changes strategic incentives of non-merging firms (change best-reply slope of merged entity)
  - Overall effect to be proven?

Extensions

- Quality increasing investment: no general conclusion
- Linear demands with 3 firms
    - The merged entity invests less, the other invests more
    - The merged entity produces less, the other may produce more or less
    - Consumer surplus may (or may not?) decreases
- Synergies in investment may reverse the conclusion on welfare (dynamic efficiency defense)

Quality-increasing investment

- Investment is demand enhancing: can we say anything robust? .

- The merged entity invests less

  - Utility $U(x_1 q_1, ..., x_n q_n) \longrightarrow x_i q_i = D(z_i, \bar{z}_{-i})$ where $z_i = p_i / x_i$
  - Profit $(p_i - c_i) q_i = (z_i - c/x_i) D(z_i, \bar{z}_{-i})$
  - All the previous conclusion applies for the quality adjusted prices and investment

- The captive demand model

  - $q_i(p_i, \bar{p}_{-i}, x_i) = D(p_i, \bar{p}_{-i}) + d(p_i) x_i$
  - Suppose the eq. price is below the monopoly price for the captive market
  - Then a merger increases investment x_i for all firms (which raises the price further)

Mergers in Telecom

- They may differ from the model in two respects
- First network/frequencies optimization implies some form of asset reallocation suggesting a model combining Farell-Shapiro and Vives
  - cost $c(x_i, A_i)$ and the merger reallocates $A_i + A_j$ between the two firms: does investment induce synergies in this case?
- Typically the products will be merged to generate a new portfolio ($+$ branding)
  - difficult to account for in the model
- A merger raises investment of non-merging firms:
  - quid about mergers in asymmetric context which is often the case?
  - 4 asymmetric $\rightarrow$ 3 symmetric
  - Are large telcos correct when claiming that they will invest more if the small telcos merge?

Network sharing agreements

- Is it really telco NSA?
    - More like a *cooperative joint investment* with transfers (similar to R&D joint venture, fiber co-investment)
    - The model assumes efficient bargaining

- In practice
    - NSA concerns the sharing but not the choice of investment
    - There will be free-rider problems

- Efficiency requires flexibility in transfers which raises the risk of horizontal coordination
    - ex: cost sharing on a proportional basis may raise retail prices more than a merger
    - need strict regulation which reduces efficiency of bargaining