Horizontal Merger Outline

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- Merger Incentive
  - Salant et al. Cournot Merger Paradox
  - Cournot Merger with Synergies
  - Stigler Merger to Monopoly
- Merger Welfare Result
  - Farrell and Shapiro Market Share Screen (Cournot Aggregate Welfare)
  - Farrell and Shapiro Margin Screen (Cournot Consumer Surplus)
  - Williamson Merger to Monopoly (Bertrand Aggregate Welfare)
  - Farrell and Shapiro Upward Pricing Pressure (Bertrand Consumer Surplus)
  - Collusion

Salant et al. Cournot Merger Paradox

- Parameters: Merger of m firms in standard Cournot oligopoly.
- Analysis: Argue that merger is equivalent to the closure of all but one insider, analyse reaction functions graphically.
- Result: $\uparrow \Pi_I$ only if $\frac{m}{n} > 80\%$.
  - Intuitively, negative strategic effect dominates positive direct effect for $\frac{m}{n} < 80\%$.
- Evaluation: Critical assumption that merger realises no synergies, else there is an additional positive direct effect and an additional positive strategic effect.
- Evaluation: Critical assumption that competition is Cournot.
- Evaluation: Questionable assumption that merger occurs if $\uparrow \Pi_I$, since it is possible that each insider is better off as an outsider.
- Discussion: Result suggests non-profit motivation for merger.

Cournot Merger with Synergies

- Parameters: Salant et al. model except $c_I^P < c^A$.
- Analysis: Analyse reaction functions graphically, synergies make insiders "tough".
- Result: $\uparrow \Pi_I$.
  - Intuitively, synergies constitute a positive direct effect, and have a positive strategic effect.

Stigler Merger to Monopoly

- Parameters: Define $\Pi_I^P(n,m)$ and $\pi_O^P(n,m)$. Suppose that merger occurs even if $m = n-1$.
- Analysis: Argue that each firm i participates only if $s_i \Pi_I^P(n,n) > \pi_O^P(n,n-1)$ hence merger to monopoly occurs only if $\frac{\Pi_I^P(n,n)}{n} > \pi_O^P(n,n-1)$.
- Result: $\uparrow \Pi_I$ not sufficient for merger to monopoly.
  - Intuitively, soft insiders benefits outsiders.
- Evaluation: In practice, n is generally large and synergies are generally small, so merger to monopoly is unlikely.

Farrell and Shapiro Market Share Screen (Cournot Aggregate Welfare)

- Parameters: Merger in standard Cournot oligopoly. Suppose that $P(Q) = 1 - Q$.
- Analysis: Suppose that merger is privately profitable and price-increasing. Then, $E = CS + \Pi_O = \frac{Q^2}{2} + \sum_{i \in O} [1 - Q - c] q_i$. By taking FOC, $q_i = 1 - Q - c$, hence $\frac{\partial q_i}{\partial Q} = -1$. Show $\frac{dE}{dQ} = Q_I - Q_O$, hence $\frac{dE}{dP} = Q_O - Q_I$ since $\frac{dQ}{dP} = -1$.
- Result: $\uparrow W$ only if $\sum_{i \in I} s_i < 0.5$.
  - Intuitively, $\downarrow \sum_{i \in I} s_i \Rightarrow \downarrow \Delta p \Rightarrow \downarrow \Delta CS$, $\downarrow \sum_{i \in I} s_i \Rightarrow \uparrow Q_O \Rightarrow \uparrow \Delta E$.
- Evaluation: Assumption that merger is privately profitable is plausible, and not critical if competition authorities are concerned only with external welfare.

- Evaluation: Critical assumption that merger is price-increasing is motivated by the thought that price-decreasing merger straightforwardly benefits consumers.
- Evaluation: Critical assumption of Cournot competition.
- Discussion: Suggested merger screen is relatively undemanding in the sense that it requires only pre-merger data.

Farrell and Shapiro Margin Screen (Cournot Consumer Surplus)

- Parameters: Merger of firms 1 and 2 in standard Cournot oligopoly.
- Analysis: Take FOC for pre-merger q_1, q_2, evaluate $\frac{\partial \pi_M}{\partial q_M}$ at pre-merger q_1, q_2, show $\frac{\partial \pi_M}{\partial q_M} > 0$ if $p^A - c_M > (p^A - c_1) + (p^A - c_2)$. Argue that $\uparrow Q_I \Rightarrow \uparrow Q \Rightarrow \uparrow CS$.
- Result: $\uparrow CS$ iff $p^A - c_M > (p^A - c_1) + (p^A - c_2)$.
  - Intuitively, merger is output-increasing only if positive direct effect due to synergies outweighs negative direct effect due to internalisation of negative externalities.
- Discussion: Result generalises to merger between three or more firms.
- Discussion: In practice, competition authorities find it difficult to accurately estimate synergies.
- Discussion: In reality, such large synergies are unlikely.

Williamson Merger to Monopoly (Bertrand Aggregate Welfare)

- Parameters: Merger to monopoly in standard Cournot oligopoly with non-drastic synergies.
- Analysis: Show graphically that $\downarrow c \Rightarrow \uparrow W$ and $\downarrow q \Rightarrow \downarrow W$.
- Result: $\uparrow W$ only if $\downarrow c$ large and/or $\downarrow q$ small.
- Case Study (Superior Propane/ICG Propane):
  - In 1998, Superior Propane Inc. and ICG Propane Inc., the two largest distributors of propane in Canada contested the Canadian Commissioner of Competition's application to block a proposed merger on the basis of a substantial decrease in competition by presenting evidence that the merger would realise synergies that reduce cost by CAD29m per year.

Farrell and Shapiro Upward Pricing Pressure (Bertrand Consumer Surplus)

- Parameters: Merger of firms 1 and 2 in differentiated Bertrand oligopoly.
- Analysis: $T_i = -\frac{\partial \pi_j}{\partial q_i} = |\frac{\partial \pi_j}{\partial q_i}| = |\frac{\partial \pi_j}{\partial q_j}\frac{\partial q_j}{\partial q_i} + \frac{\partial \pi_j}{\partial p_j}\frac{\partial p_j}{\partial q_i}| = |\frac{\partial \pi_j}{\partial q_j}\frac{\partial q_j}{\partial q_i}| = (p_j - c_j)D_{ij}$ where $D_{ij} = |\frac{\frac{\partial q_j}{\partial p_i}}{\frac{\partial q_i}{\partial p_i}}| = |\frac{\partial q_j}{\partial q_i}|$ and $\frac{\partial \pi_j}{\partial p_j} = 0$ holds at equilibrium, $UPP_i = T_i - E_i$.
- Result: $\uparrow$ margin, $\uparrow$ diversion ratio, $\downarrow$ cost synergies $\Rightarrow \downarrow CS$.
  - Intuitively, $\uparrow$ margin, $\uparrow$ diversion ratio $\Rightarrow \uparrow \Delta$ profit on one product due to increase in price of the other $\Rightarrow$ incentive to increase price.
- Discussion: Result suggests a merger screen using margin data and estimates of diversion ratio.
- Discussion: UPP is not a full equilibrium analysis, hence underestimates magnitude of price change.
- Case Study (Sainsbury's/Asda):
  - In 2019, the U.K. CMA blocked the Sainsbury's/Asda merger on the basis of upward pricing pressure analysis. The CMA computed a "Gross (of synergies) Upward Pricing Pressure Index (GUPPI)" by estimating relevant margins and diversion ratios. Diversion ratios were estimated using surveys conducted in person at stores, where consumers were asked where they would have shopped instead.

Collusion

- Case Study(Nestle/Perrier):
  - In 1992, Nestle and Perrier, two of the three largest European bottled water producers, with 17% and 36% market share respectively proposed to merge. This merger was blocked by the European Commission because the merged firm would have enjoyed excessive market power. Nestle and Perrier then proposed to (additionally) sell Volvic, a Perrier subsidiary with 15% market share to the primary outsider, BSN, which had 23% market share, hence yielding an approximately balanced duopoly. This proposal was rejected by the European Commission because it feared this would facilitate tacit collusion.