Collusive bidding, competition law, and welfare

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Shubhashis Gangopadhyay, Aineas Mallios and Stefan Sjögren

India Development Foundation (IDF), India,
University of Gothenburg, Sweden

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- We analyze a technological innovation owned by a NPE that destroys the value of an existing technology used by incumbent firms.
- In this context, we show why collusive biding is better than having competitors bid against each other.

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- Consider the Rockstar consortium (Apple, Microsoft, etc.) bidding against another consortium of technology companies (Google, Intel, etc.) for the acquisition of 6000 patents of the Nortel Network in 2011 (see Cosandier et al., 2014).
- Another cartel of buyers performing a similar catch and release patent strategy is Allied Security Trust (AST) (see Wang, 2010).

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- Second, there is a "per se" (i.e., ex ante regulation) legal argument that a cartel created before the patent bidding will distort competition (Maurer and Scotchmer, 2006; Tudor, 2012).
- However, competition authorities both in the US and EU often allow the exchange of information among patent buyers before the bidding process.

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- The main argument for using the "rule of reason" model of analysis is to protect downstream users from the threat of holdup or injunctions undertaken by patent holders (Masson et al., 2014).
- This cause of action lacks a theoretical foundation, and neither of the competition authorities has produced any theoretical foundation for why the "rule of reason" argument should be applied.

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  - What are the competition and welfare effects arising from collusive bidding when the technological innovation is drastic?
  - Can a potential entrant outbid an incumbent firm in a patent bidding process?

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- We prove that a cartel of such incumbent firms will always outbid a potential entrant over a technology that can destroy the value of the incumbents' existing assets.
- More important, we find that collusive bidding increases consumer surplus, particularly when the technological innovation is drastic, and also improves social welfare.

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- **Ass. 1**: $\pi_i(i, 1) > \pi_0 > \pi_j(i, 1)$ for $i \neq j, i, j = 1, 2, ..., n$.

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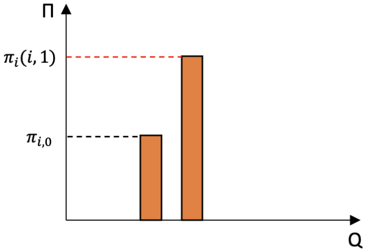

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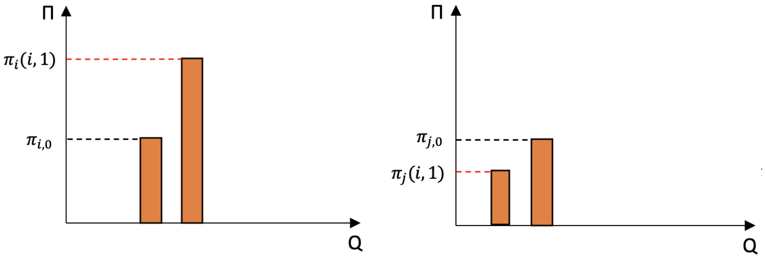

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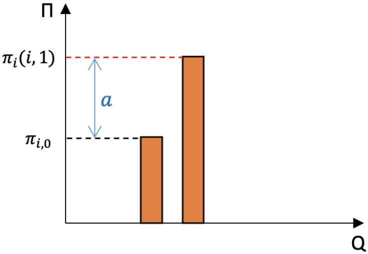

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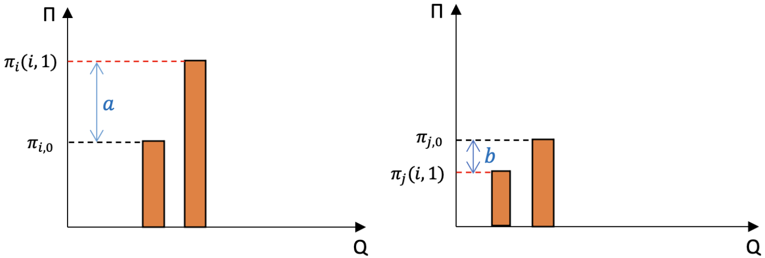

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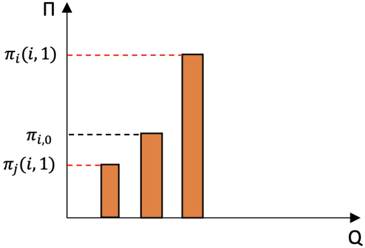

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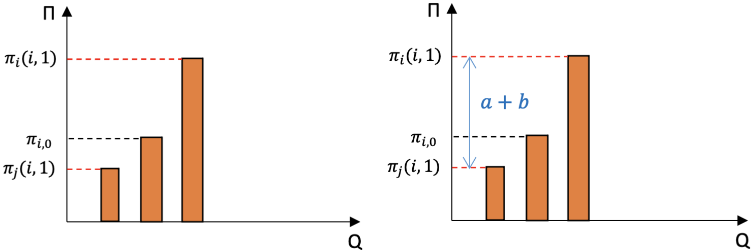

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- Since $\pi_j(i, 1) = \pi_i(j, 1) < \pi_0$, all firms are worse off if a competitive bidding process starts.
- If the firms have the choice to collude, they can avoid the reduction in profits by preventing the auction.

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- It follows that total surplus, i.e., $S(m) = S^C(m) + S^P(m) + mf$, is:

Social welfare when m firms have implemented the new technology

- Applying the same welfare analysis as for the first stage it can be shown that:
- $S^C(m) = \frac{1}{2b}(\frac{n(a-c)+m\Delta c}{n+1})^2$
- $S^P(m) = m\frac{1}{b}(\frac{a-c+(n+1-m)\Delta c}{n+1})^2 + (n-m)\frac{1}{b}(\frac{a-c-m\Delta c}{n+1})^2 - mf$
- It follows that total surplus, i.e., $S(m) = S^C(m) + S^P(m) + mf$, is:
- $S(m) =$ $\frac{1}{2b}(\frac{n(a-c)+m\Delta c}{n+1})^2 + m\frac{1}{b}(\frac{a-c+(n+1-m)\Delta c}{n+1})^2 + (n-m)\frac{1}{b}(\frac{a-c-m\Delta c}{n+1})^2$

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- It can also be shown that $\frac{\partial S(m)}{\partial m} > 0$, i.e, that also social welfare is increasing in the number of firms m.
- Hence, the competition authorities should not challenge collusive bidding that results in outcomes where more firms use patented cost-efficient technologies.

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- This will determine the patent price F, where $F = nf$.

Drastic technological innovation

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- In this case, firm i that has implemented the new technology earns the monopoly profit, i.e., $\pi_i(i, 1) = \frac{1}{b}(\frac{a-c'}{2})^2 \equiv \pi^m$.

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- $S^C(n) = \frac{1}{2b}\left(\frac{n(a-c')}{n+1}\right)^2 > S_0^C$
- This suggests that collusive bidding leads to even higher levels of consumer surplus when the technological innovation is drastic.

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- Clearly, the entrant gains zero when it does not enter and $\frac{1}{b}\left(\frac{a-c+(n+1)\Delta c}{n+2}\right)^2 - I - F$ when it enters with the patented technology.
- This further implies that the highest price an entrant is willing to pay for the patent is $\frac{1}{b}\left(\frac{a-c+(n+1)\Delta c}{n+2}\right)^2 - I$.

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- Thus, can a potential entrant outbid an incumbent?
- No, it cannot because the entrant does not face the risk of having existing assets decreasing in value when losing the bidding process.

Key takeaways

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- Collusive bidding increase consumer surplus, particularly when the technological innovation is drastic, and also improves social welfare.

- Collusive bidding may even be used to prevent the emergence of monopolies with sole ownership of drastic technological innovations.

- A potential entrant can never outbid an incumbent in patent bidding since the entrant does not have existing assets in place that will lose value if entry does not occur.

Thank You

Aineas Mallios, PhD
aineas.mallios@handels.gu.se