Shelving or developing? The acquisition of potential competitors under financial constraints

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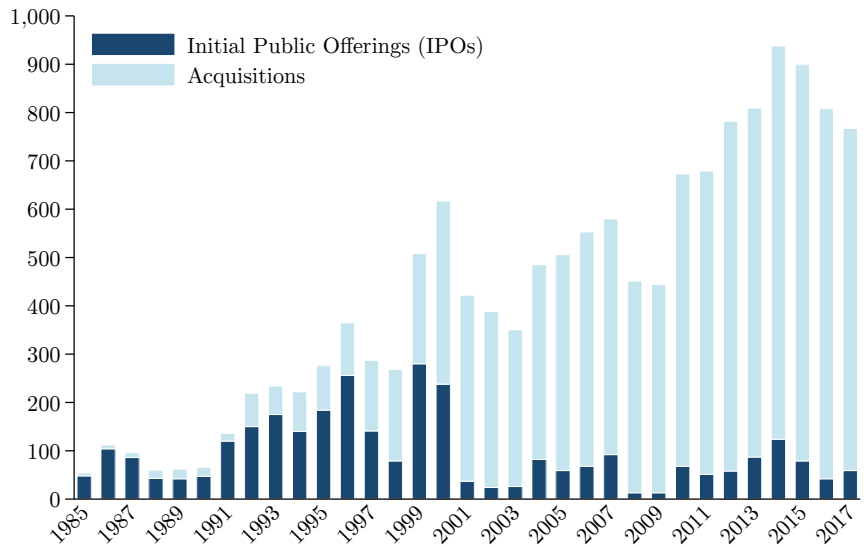
Motivation

The acquisition of potential competitors (start-ups) is a widespread phenomenon.

- Exit via M&A:
  - Since mid-90s, dramatic shift from IPOs to acquisitions (Pellegrino, 2021).



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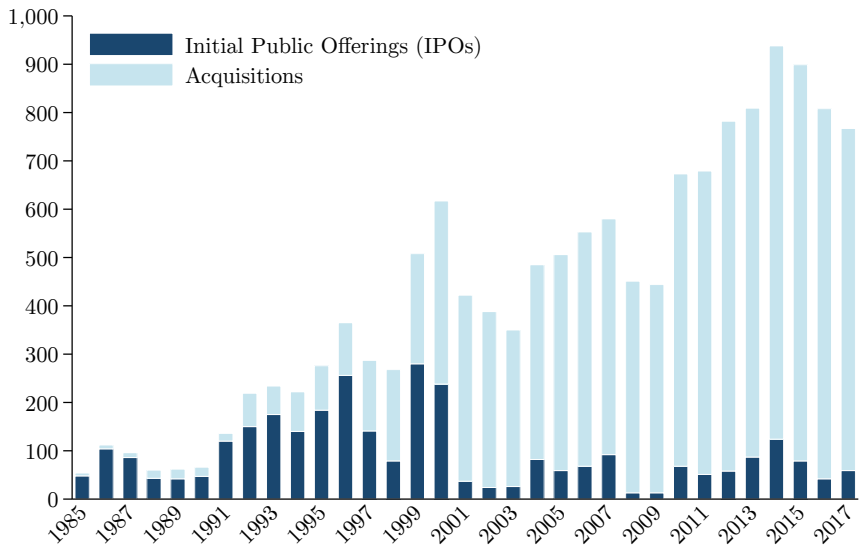

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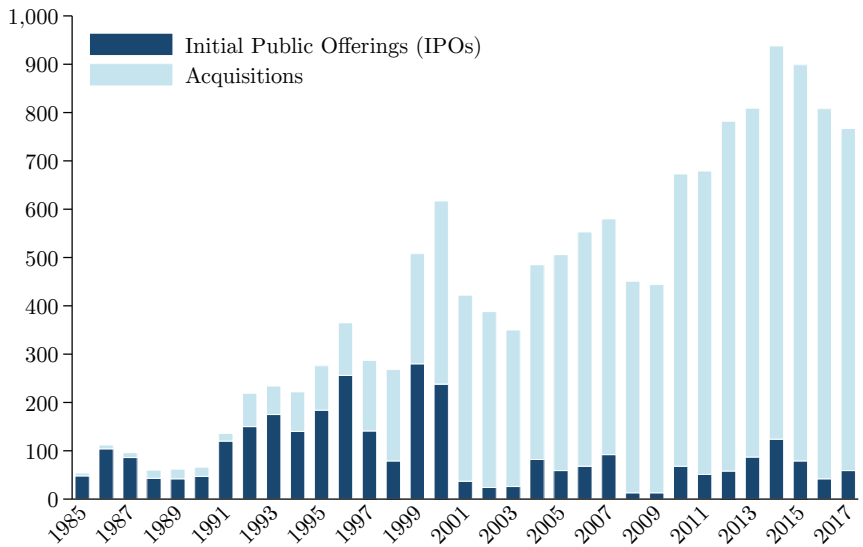
  - Google, between Feb 2010 and Feb 2020, acquired one company every 18 days.
- But extends beyond the digital industry:
  - Cunningham et al. (2021), Eliason et al. (2020): similar patterns in pharma, healthcare.



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- In the few cases in which AAs opened an investigation, the acquisitions were mostly cleared.
- Even though things may change:
  - Facebook/Giphy blocked by the CMA (2021).
  - Visa/Plaid (US DoJ sued, deal abandoned, 2020).
  - Illumina/PacBio (FTC challenged, deal abandoned, 2019).

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We ask: what merger policy should the antitrust authority follow?

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  - Pushes towards takeovers that target only start-ups that are unable to succeed on their own and are superior in terms of welfare.
  - The stricter the merger policy, the stronger the selection effect.
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  $\rightarrow$ Despite the possible pro-competitive effect, the optimal merger policy should not be lenient towards takeovers of potential competitors.
- Need to change current approach towards acquisitions of potential competitors.

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- Asymmetric information:
  - S knows own type. I and AA unsure whether, absent takeover, start-up is able to succeed on its own. They know prior probability $= p$.
  - “I think the decision we made at the time, with what we knew, was a good decision. It’s laughable to say that now, I suppose” (former Excite’s CEO on decision to turn down Google’s takeover offer in 1999).

Micro-foundations

1. Unsuccessful S is financially constrained.
   - Holmstrom & Tirole (1997): moral hazard model.
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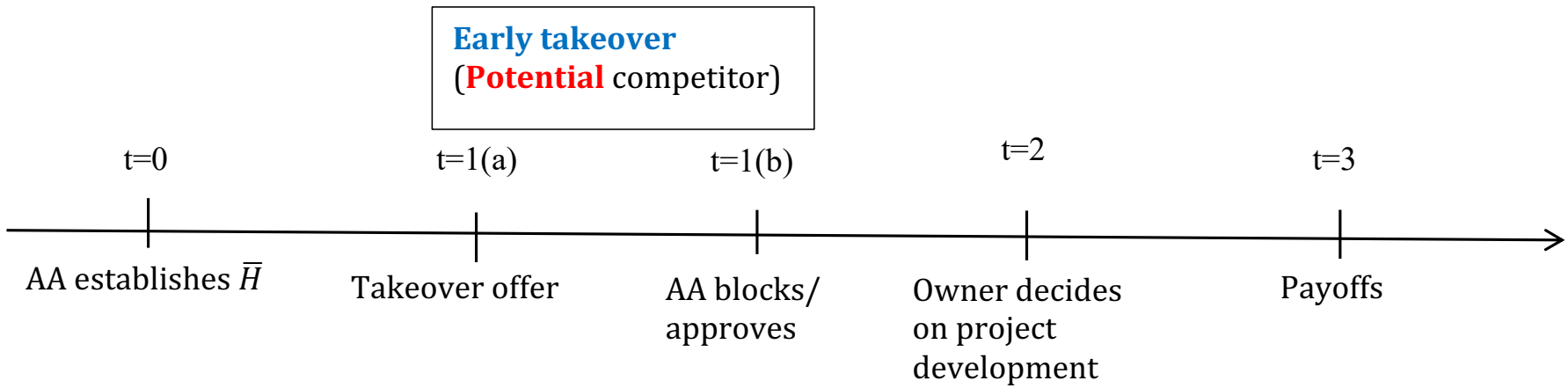
2. Unsuccessful S lacks managerial/implementation skills.
   - Development cost is high, i.e. cK with $c > 1$, for S poor in managerial/implementation skills, and low, i.e. $= K$ with $c = 1$ for S rich in managerial/implementation skills.
   - Development profitable if (and only if) $c = 1$.
   - S observes c. I and AA know the distribution.
   - I has development cost $= K$.

Model: time-line



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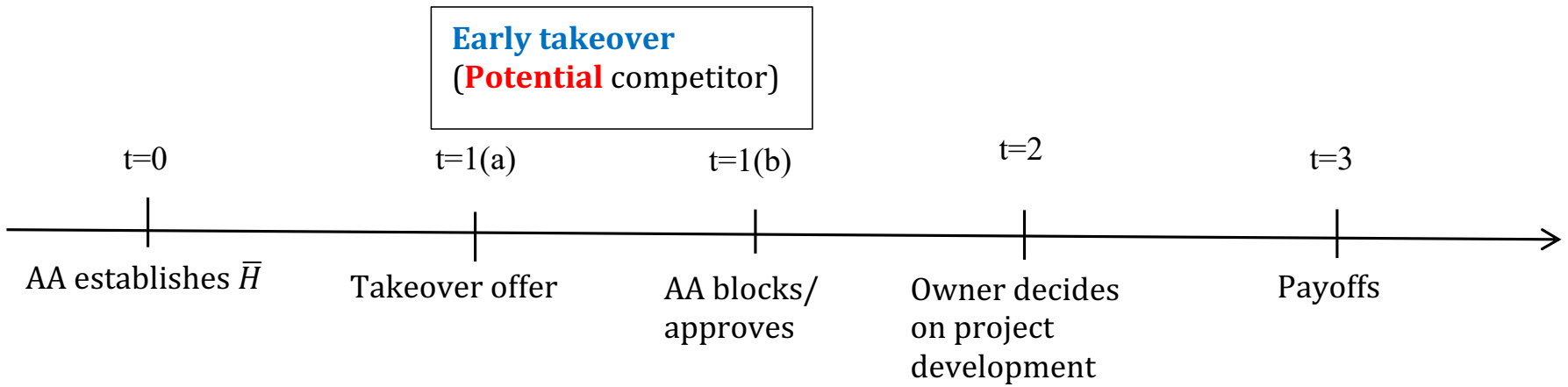

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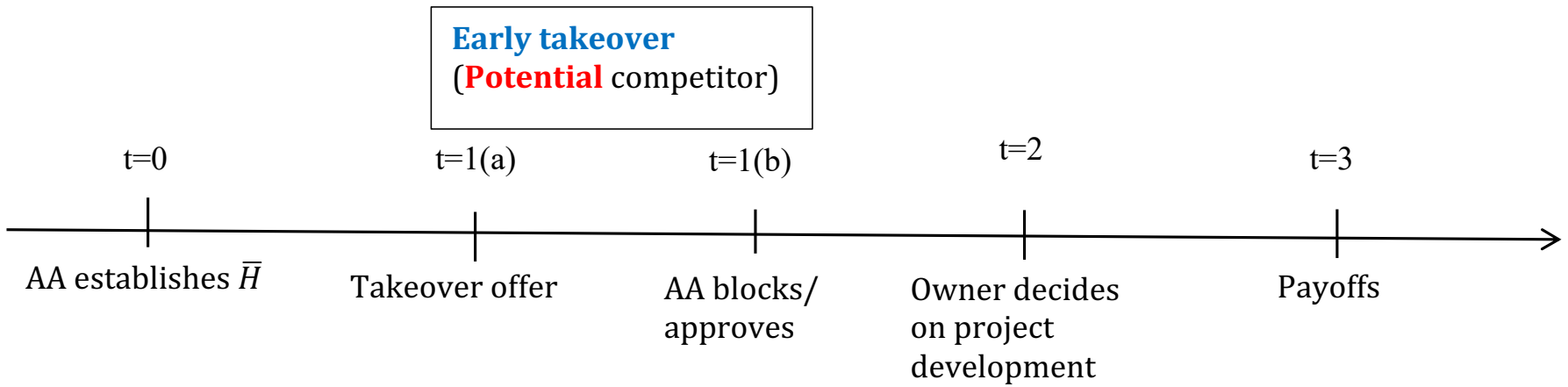

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$t = 1$: Early takeover.

- With probability α, I makes a take-it-or-leave-it offer. With probability $1 - \alpha$, S does.
- The AA decides on the proposed deal.

  (I and AA do not know whether absent takeover, S is able to succeed on its own)

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- We assume: $\pi_I^M > \pi_I^m > \pi_I^d$; $W^m < W^M < W^d$.
- Project development is privately and socially efficient:
  - NPV of the project is positive for S: $\pi_S^d > K$.
  - Net social value is positive when project developed by I: $W^M - W^m > K$.
  - A fortiori when developed by S: $W^d - W^m > K$.

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$\rightarrow$ Killer acquisitions.

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- Posteriors coincide with priors when actions do not reveal type (on and off path).

Early takeover
Decision of the AA

Given $\bar{H}$, having observed the takeover price and the acceptance decision, the AA authorises the takeover if it assigns a sufficiently low probability to the start-up successful on its own:

$$\phi(\Omega) \leq F_W(\pi_I^A, \bar{H}).$$

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Remark 3: If I develops: easier for the takeover to be approved.

Early takeover: PBE in pure strategies
Equilibrium offers

In any pure-strategy PBE, independently of bargaining-power, we find the following:

- Low price ($P < S_s$'s outside option):
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- High price ($P \geq S_s$'s outside option):
  - Any S willing to accept P / offer $P \rightarrow$ no updating of prior beliefs $\rightarrow \phi(\Omega) = p$.
  - I appropriates project, but overpays for S_u.
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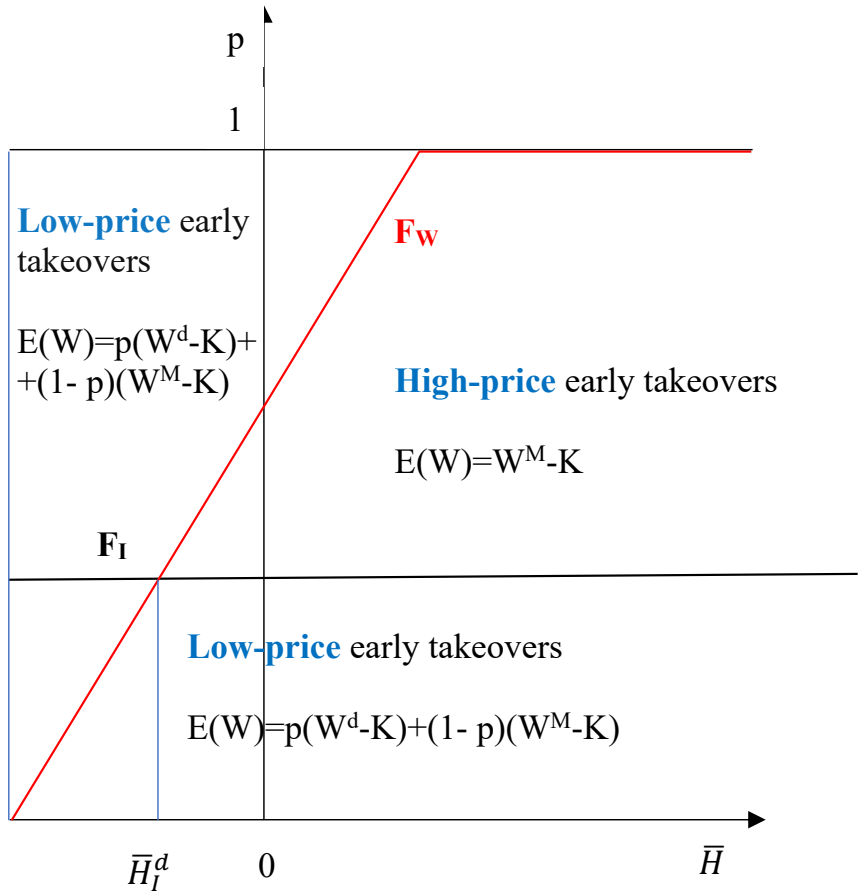
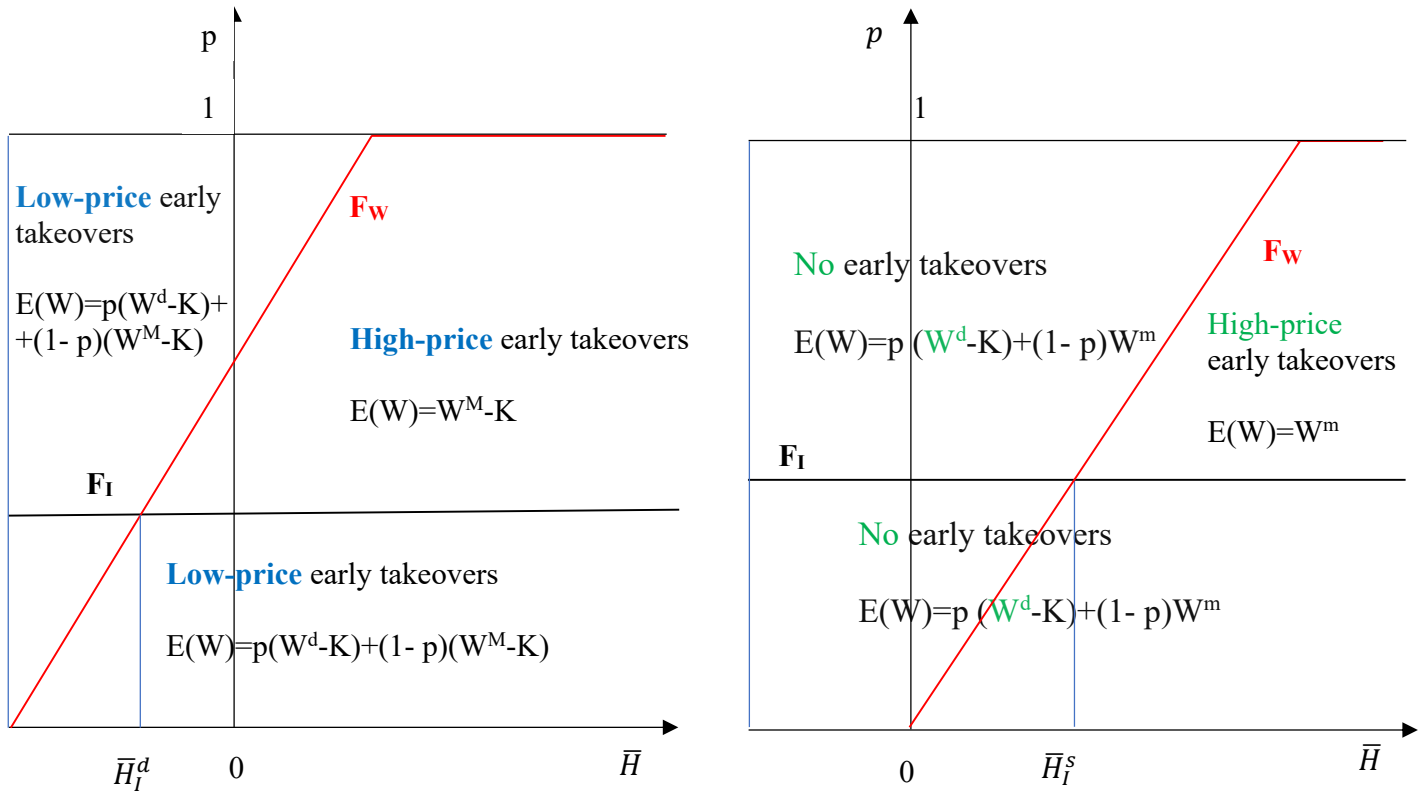
We now illustrate the equilibrium offers when I makes the offer.

Equilibrium offers
The Incumbent develops



- NW: Selection effect of the merger policy.
- The lower $\bar{H}$, the stronger the selection effect, the more likely a low-price takeover occurs instead of a high-price takeover.

Equilibrium offers
The Incumbent shelves



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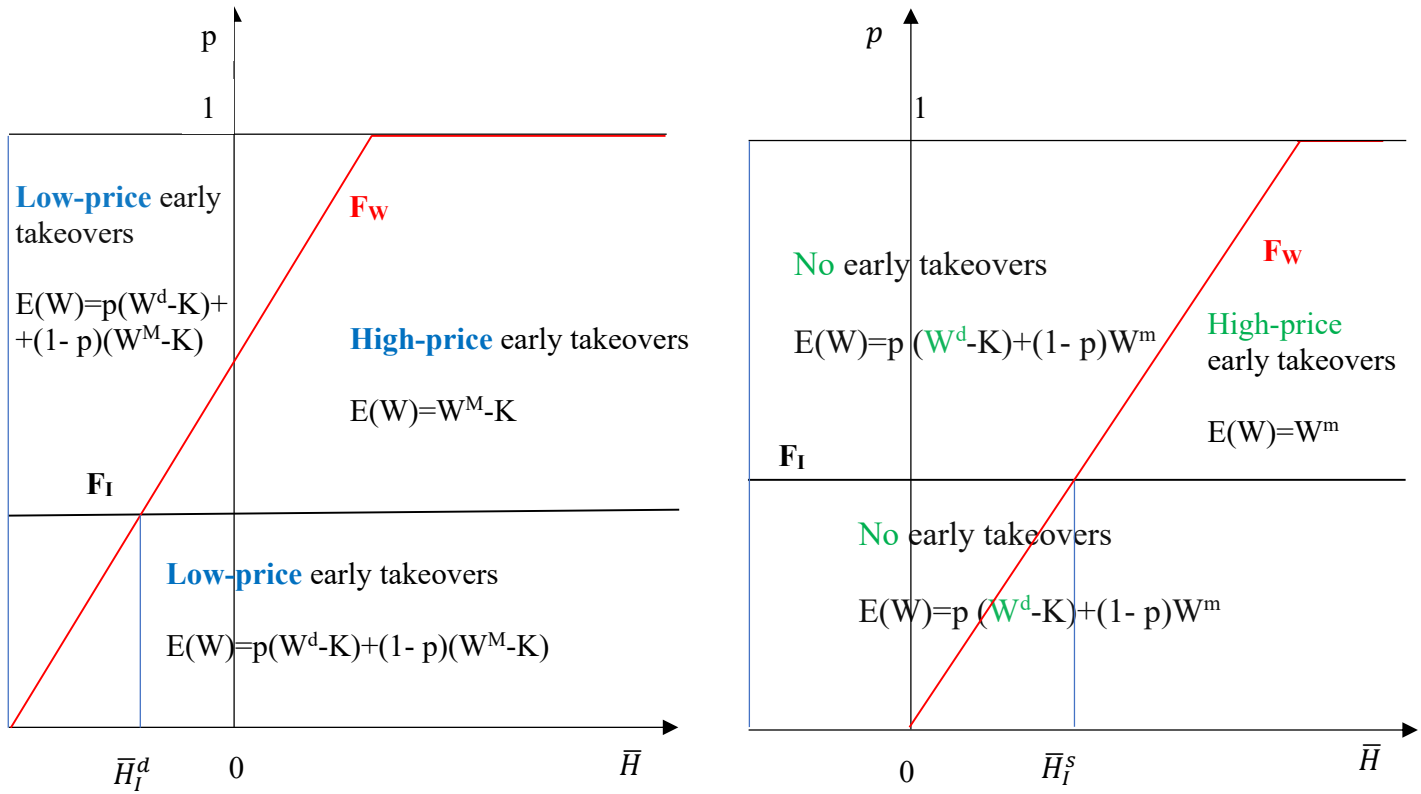

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- High-price takeovers blocked more often by AA than when I develops: killer acquisitions.

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  - Selection effect: by forcing the switch to a low-price takeover, such merger policy makes expected welfare even higher.
- An optimal "information-free" merger policy that does not need to be contingent on I's decision to shelve or develop and the relative bargaining power.

Extensions

I can acquire S also at a later stage (after development).

- Lenient policy toward acquisitions of committed entrants optimal iff:
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Mixed strategies PBE

- Conditions for hybrid PBE to exist, where:
  - S_s always offers $P_H \in \mathcal{P} \subset \mathbb{R}_+$; S_u randomises between $P_L < P_H$ and P_H.
  - I accepts P_L with certainty and randomises between accepting and rejecting P_H.
  - When observing P_H, AA and I update prior beliefs by increasing the probability that the start-up is successful ($\phi(P_H)$).
- Result 1: expected welfare at hybrid PBE is lower than with pure strategies.
- Result 2: The policy described earlier destroys hybrid PBE and is optimal even when one allows for mixed strategies.

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  Development stage:

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Related literature

- Recent but growing literature on acquisitions of potential competitors:

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Early v. late acquisitions:

- Arora et al. (2021): trade-off between capturing more value being acquired late v. running a grater risk of failing due to lacking assets.
- Norback and Persson (2009): early acquisitions to pre-empt investment by the independent start-up in the prospect of late acquisitions.
- No role for merger policy; we derive differential merger policy for early & late takeovers.

Related Literature

- Literature on the merger approval rules:
  - Besanko and Spulber (1993), Armstrong and Vickers (2010), Nocke and Whinston (2010, 2013), among others.
  - Selection effect similar to Nocke and Whinston (2013): optimal merger policy requires rejecting some welfare-improving deals.
  - They focus on mergers involving actual competitors: the AA knows the impact on welfare of the proposed mergers but has limited information on the alternatives that can be proposed.
  - We consider takeovers targeting potential competitors: the AA has limited information on whether the start-up is able to develop the project absent the takeover.

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- Much of the emphasis in this debate has been on such mergers being “killer acquisitions.”
- In this paper we ackowledge that such acquisitions can allow for the development of projects that would never reach the market otherwise.
- This does not lead, though, to the conclusion that the merger policy should be lenient:
  - Because of the selection effect, optimal to commit to standard of review strict enough to prohibit high-price takeovers, even when the latter are welfare beneficial.

Policy implications

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- Use information conveyed by high transaction value to assess the counterfactual to the merger and their effects on competition.

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- What is a high price?
  - Valuation: standard capital budgeting exercise already performed by AA.
  - Benchmarking: past takeovers' prices available in common financial datasets (e.g., Thomson Reuters Refinitiv).