The market for corporate control: Takeovers

- Takeovers: Hostile vs friendly

- Two motivations for takeovers
  o The *ex-post* rationale: benefits from a new management team.
  o The *ex-ante* rationale: disciplining effect on incumbent management.

- *Tradeoff efficiency vs rent extraction*: Firms want to enjoy benefits from takeovers, but want to limit (or appropriate parts of) raiders' gain.

- <u>Model</u>: Fixed investment. Intermediate date: raider appears. Initial date: corporate charter design; investment.

- If no takeover
  - investors' value: $v = p_H(R - R_b)$
  - incumbent's benefit: $w = p_H R_b$
  - total: $v + w = p_H R$

- If takeover:
  - investors' value: $\hat{v}$
  - raider's private benefit: $\hat{w}$.

- Investors' value in case of a takeover, $\hat{v}$, is publicly known.
- Raider's value, $\hat{w}$, is raider's private information. Cumulative distribution function $H(\hat{w})$, density $h(\hat{w})$.

- *Corporate charter*: defining the terms under which the raider can take control – for what values $\hat{v}$ and $\hat{w}$ should a transfer occur?
    - Obviously, a narrow view of the corporate charter.

- Raider is not credit rationed.
- Suppose first also incumbent manager is not credit constrained.

- The firm commits to a sale price *P* of the firm to a potential raider such that
$$\hat{v} + \hat{w}^* = P,$$
where $\hat{w}^*$ is a cutoff value for the raider's gain: The raider takes over the firm and pays *P* if and only if $\hat{w} \geq \hat{w}^*$.

- The probability of takeover: $1 - H(\hat{w}^*) = 1 - H(P - \hat{v})$.

- Entrepreneur's utility equals NPV

$$U_b = (v + w)H(\hat{w}^*) + (\hat{v} + \hat{w}^*)[1 - H(\hat{w}^*)] - I$$

- The entrepreneur chooses the P, implicitly the $\hat{w}^*$, that maximizes U_b.
  - Resemblance with monopoly pricing: View $[1 - H(\hat{w}^*)]$ as a demand curve. The higher is $\hat{w}^*$, the higher is the gain if the firm is sold, but then also the lower is the chance that the firm *is* sold.

- Socially inefficient P – too few takeovers.

- Other forces work the other way.

  o Agency problems in the raiding firm, say with managers exerting real control, may lead to too many raids.

  o Raider costs related to preparing a bid for the firm: Suppose $\hat{w}$ is known to the raider only after he incurs c. If c is too high, then the target firm may have to lower P in order to get the raider to participate.

  o When the incumbent manager is credit rationed, lowering P increases the chances for a takeover and therefore increases pledgeable income.

Incentive effects of takeover threats

- Two views

    o Takeovers are good for governance –
      they get incumbent managers to work
      hard.

    o Takeover threats lead to short-term
      behavior among managers – *myopia*.

- A model of takeover-induced myopia
  - Myopia – putting too much weight on the present relative to the future – here in the form of underinvestment in future profitability.

  - Success probability under incumbent management is $p + \tau$, where $p \in \{p_H, p_L\}$, depending on manager effort, and τ is the result of an investment made by manager before any takeover takes place.
  - Choice of τ is unobservable.
  - Investment cost $\gamma(\tau)$, convex.
  - R_b is the entrepreneur's return if success.

o H is the probability of no takeover.

o The entrepreneur chooses τ to maximize
$$\tau R_b H - \gamma(\tau)$$

o Two reasons for underinvestment
  ▪ The entrepreneur needs outside capital and lets investors in, so that $R_b < R$.
  ▪ There is a chance for a takeover, so that $H < 1$.

o Related forms of myopic managerial behavior
  ▪ Entrenchment – creating obstacles for the takeover.
  ▪ Posturing – obtaining good short-term results in order to appear more efficient than one is.

Takeovers in practice

- Single bidder.

- *Tender offer*: the raider makes the price offer, shareholders individually decide whether or not to accept.
  - Even now, the corporate charter may influence the price, though.
  - *Restricted offer*: restricted to a certain fraction of outstanding shares; or unrestricted
  - *Conditional offer*: conditional on the raider acquiring a certain fraction of the shares; or unconditional.

- Suppose raider needs a fraction κ in order to gain control, $0 < \kappa < 1$.

- Investor value
  - with a takeover: $\hat{v}$
  - without: v

- A *value-enhancing takeover*: $\hat{v} > v$.
  - A value-decreasing takeover: $\hat{v} < v$.
- Assume $\hat{v} - v = 1$.

- Free-riding shareholders

- No private benefit to raiders: $\hat{w} = 0$.

- Redefine P as the premium over v offered by the raider.
  - Raider offers $v + P,\ 0 \leq P \leq 1$.

- A *continuum* of shareholders, of *mass* 1.
    - o Continuum: no shareholder is *pivotal*.

- Let β be the probability, according to shareholders, that the takeover will be successful.
    - o Continuum of shareholders implies that β is not affected by any single shareholder's decision to accept or not.

- In equilibrium,
$$\beta\hat{v} + (1 - \beta)v = v + P$$
$$\Leftrightarrow$$
$$\beta = P$$
    - o Shareholders are indifferent between selling and keeping shares

- In equilibrium, the raider buys a fraction κ of the shares.

- Raider earns nothing from the value enhancement:
$$\pi = \kappa[\beta(\hat{v} - v) - P] = \kappa[\beta - P] = 0.$$

- Free-riding shareholders take the entire value enhancement that the raider creates.

- Private benefit to raider: $\hat{w} > 0$
  - No change in equilibrium beliefs among shareholders: $\beta = P$.
  - So the raider gets to keep all his private benefit:
  $$\pi = \kappa[\beta - P] + \beta\hat{w} = P\hat{w}.$$
  - Therefore, it pays for raider to increase the price, and so $P = 1$, and therefore $\beta = 1$.

o With *dispersed ownership*, a raider keeps all his private benefit and gets none of the value enhancement.

o With a large current shareholder, even some of the private benefit of the raider may end up at this large shareholder.

- *Toehold*: The raider already owns a fraction $\theta < \kappa$ of the firm's shares.

   o The raider's profit is:
   $$\pi =$$
   $$(\kappa - \theta)[\beta(\hat{v} - v) - P] + \theta\beta(\hat{v} - v)$$
   $$= \theta P,$$
   since $\hat{v} - v = 1$ and $\beta = P$.

   o The optimal bid is $P = 1$, so $\pi = \theta$.

   o The raider retains the value enhancement of his initial shares.

   o The implication is that block shareholding facilitates takeovers by block shareholders.

- *Dilution* of minority shareholders' value
  - Examples: tunneling; minority buyout.

  - Suppose the raider is able to expropriate a fraction ϕ of minority owners' value increase.
  - Without dilution:

    $\hat{v} - v = 1$, and $\hat{w} = 0$.
  - With dilution:
    - raider gets

      $\hat{w} = \phi(\hat{v} - v) = \phi$
    - current shareholders get

      $(1 - \phi)(\hat{v} - v) = 1 - \phi.$

  - Shareholders' beliefs about the probability of a successful raid is again such that they are indifferent between selling and holding shares

    $\beta(1 - \phi) = P$

○ The raider will not have to bid more than $P = 1 - \phi$. For bids $P \leq 1 - \phi$, his profit, when buying a fraction κ of the shares to obtain control, is:

$$\pi = [\kappa + (1 - \kappa)\phi]\beta - \kappa P$$
$$= [\kappa + (1 - \kappa)\phi]\beta - \kappa\beta(1 - \phi)$$
$$= \beta\phi.$$

○ Raider maximizes profit at $P = 1 - \phi$, getting $\pi = \phi$.

  ▪ He gets the dilution value on *all* shares.

- Takeover defenses

  o They work in the opposite direction of dilution, making it harder for the raider to acquire the firm.

  o An example of a *poison pill*: a scheme allowing shareholders to buy new shares at a discount in case of a takeover.
    - Making it possible for current shareholders to appropriate all or part of raider's private benefit, $\hat{w}$.

- A finite number of shares

  o Calculating each shareholder's equilibrium strategy.

  o One vs many shares per shareholder.
    - When a shareholder holds several shares, his tendering one of his shares increases the value of his other shares. This increases his incentives to tender, and therefore reduces the free-rider problem and increases the scope for takeovers.

- Value-decreasing takeovers: $\hat{v} < v$.

  o Necessarily, the raider must have private benefits from the takeover
  $$\hat{w} > 0$$

  o Suppose price P is such that
  $$\hat{v} - v < P < 0.$$

    ▪ Tendering an offer exerts a *negative externality* on non-tendering shareholders – the same way as there is a positive externality when the takeover is value-enhancing.

  o If a value-decreasing takeover takes place, it is best for current shareholders that the raider buys as many shares as possible: *one share – one vote*.

- Takeovers with multiple bidders: *bidding contests.*

  - Preemptive behavior:
    - early high price
    - toehold

- Managerial resistance to takeovers

  - Conflict of interest
  - Formal vs real authority