Takeovers under Asymmetric Information: Block Trades and Tender Offers in Equilibrium

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Motivation 1

- Two types of corporate control transactions: block trades and tender offers
- Many firms have a large non-controlling blockholder
  - Claessens et al (2002) on East Asia: average largest block 20%
  - Faccio and Lang (2002) on Europe: average largest block 38%
  - Holderness (2007) on US: 96% of firms have blockholders, owning on average 39%
- *What determines the choice between block trades and tender offers?*
  - Barclay and Holderness (1991): 106 block trades, in 41 cases block trades were followed by tender offers, in 14 cases tender offers were made simultaneously with block trades.
  - Holmén and Nivorozhkin (2007): 1706 firms, 309 block trades, 300 "non-partial" takeovers in firms with blockholders.

Motivation 2

- *No model explains both tender offers and block trades occuring*
- Tender offer models: Grossman and Hart (1980), Shleifer and Vishny (1986), etc.
- Block trade models: Bebchuk (1994)
- Models allowing for choice: Burkart et al (2000), Zingales (1995). But (!) in equilibrium tender offers do not occur
- Idea of this paper: information asymmetry about the raider's ability may generate failure of block trades

Preview of results

- Block trades and tender offers in equilibrium:
  - High types make a tender offer
  - Intermediate types do a block trade
  - Low types abstain from control transaction
- Higher stock price reaction to tender offers relative to block trade announcements
- Stronger shareholder protection $\longrightarrow$ higher stock price reaction to tender offers and block trades

Other related literature. Signaling in tender offers

- Shleifer and Vishny (1986), Burkart and Lee (2010) - impossibility of signaling in traditional tender offers
- Hirshleifer and Titman (1990) - signaling with bid price when the takeover outcome is probabilistic
- Chowdhry and Jegadeesh (1994) - signaling with a toehold
- Burkart and Lee (2010) - signaling (full revelation) possible through, e.g., commitment to a dilution level, choosing size of toehold, amount of debt finance

Model

- A firm with a blockholder (share $\alpha < 1/2$) and continuum of dispersed shareholders $(1 - \alpha)$
- One-share-one-vote
- The incumbent blockholder (I) is in control, generates security benefits X_I and private benefits B
- There is a potential acquirer (raider, R) in the market. If R obtains control she generates X_R and B
- X_R is R's private info; others only know that $X_R \sim U\left(\underline{X}, \overline{X}\right)$ (common knowledge)
- Assumption: $X_I = \dfrac{\underline{X} + \overline{X}}{2}$

Model. Timing

$t = 1$. R makes a take-it-or-leave it offer to I: price p per unit share. p is known only to R and I. If accepted, block trade occurs, R gains control $\rightarrow$ $t = 3$. If rejected $\rightarrow$ $t = 2$

$t = 2$.
- R can make a tender offer (conditional on ε being tendered, unrestricted) to all shareholders at price b.
- Shareholders decide non-cooperatively whether to tender or not. Assume: tendering in case of indifference. Each atomistic shareholder treats his/her own decision as having no effect on the outcome (Grossman and Hart, 1980). Assumption: I cannot counterbid.
- Control goes to the party with the the larger share.

$t = 3$. The party in control generates X_j and B

Symmetric information case

- In equilibrium, in which dispersed shareholders tender, it must be that

$$\begin{cases} b \geq X_R \text{ (free-rider problem)} \\ b \geq X_I \text{ (no "panic equilibria")} \end{cases}$$

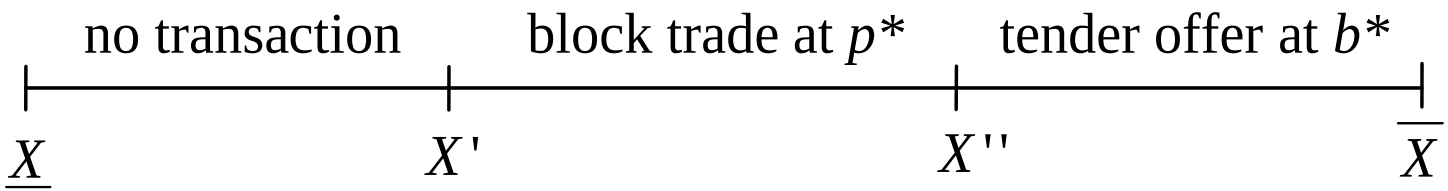
- Thus, if R wants to acquire the company by buying the atomistic shareholders' shares, the minimum bid is:

$$b = \max\{X_I,\ X_R\} \geq X_R$$

- R's payoff in a tender offer: $X_R - b + B$
- R's payoff in a block trade: $\alpha(X_R - p) + B$
- By offering $p = b$ R makes I indifferent between TO and BT, while (weakly) gaining from BT

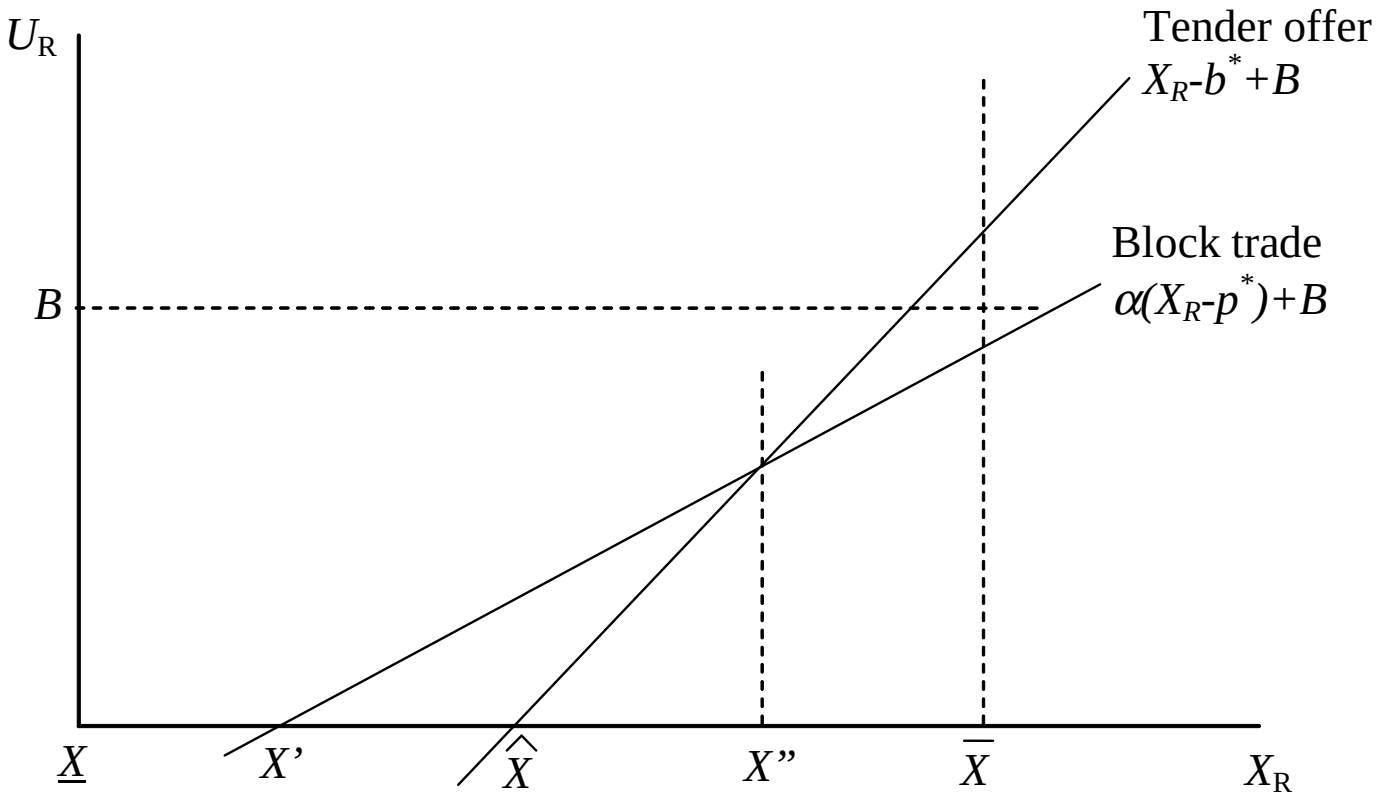
Solution under asymmetric information. Equilibrium structure

In the richest case the equilibrium looks as follows:



$$p^* > b^*$$

Solution under asymmetric information. Intuition for separation



For given prices, higher types gain relatively more (lose relativelly less) from buying more shares

Full characterization of equilirium with all three zones

$$X'' - b^* = \alpha \left(X'' - p^* \right) > -B \tag{1}$$

$$b^* = E \left(X_R \mid X_R \in \left[X'', \ \overline{X} \right] \right) = \frac{X'' + \overline{X}}{2} \tag{2}$$

Note: in principle $b^* \geq E \left(X_R \mid X_R \in \left[X'', \ \overline{X} \right] \right)$ but we use Grossman and Perry (1986) refinement (Shleifer and Vishny, 1986; At et al, 2010)
From (2) $\Longrightarrow X'' - b^* < 0$. Hence it must be that

$$p^* > b^*$$

$$\alpha \left(X' - p^* \right) + B = 0 \tag{3}$$

Full characterization of equilirium with all three zones cont-d

I must prefer accepting p^* to rejecting. Beliefs following rejection: $\widehat{X} \in [X', X'']$ such that, following rejection:

$$\begin{cases} \text{for } X_R < \widehat{X} \text{ R abstains} \\ \text{for } X_R \geq \widehat{X} \text{ R makes a tender offer} \end{cases}$$

Hence, the acceptance condition for I:

$$\frac{\widehat{X} - X'}{X'' - X'}(\alpha X_I + B) + \frac{X'' - \widehat{X}}{X'' - X'}\alpha b^* \leq \alpha p^* \tag{4}$$

we take as " $=$ " - seems that other eq-a would not satisfy Grossman-Perry refinement

It must be that R with $\widehat{X}$ is indifferent between abstaining and bidding b^*:

$$\widehat{X} - b^* + B = 0 \tag{5}$$

Equilibrium (Proposition 1)

Proposition

- *When* $B \leq \alpha\left(\overline{X} - X_I\right)$ *only block trades occur,* $X' = X_I \equiv \dfrac{\overline{X} + \underline{X}}{2}$
- *When* $B \in \left(\alpha\left(\overline{X} - X_I\right), \dfrac{\overline{X} - \underline{X}}{2}\right)$, *then* $\underline{X} < X' < X'' < \overline{X}$*:*
  - *Raiders with* $X_R < X'$ *do not attempt any transaction,*
  - *Raiders with* $X_R \in [X', X'')$ *do a negotiated block trade at price* p^*
  - *Raiders with* $X_R \geq X''$ *suggest* $p < b^*$ *to I, I rejects, R makes a tender offer at price* $b^* = \dfrac{X'' + \overline{X}}{2} < p^*$ *all shareholders tender*
  - *If I rejects to sell at* p^**, Rs with* $X_R \geq \widehat{X}$ *do a tender offer at* p^**, while Rs with* $X_R < \widehat{X}$ *abstain,* $\widehat{X} \in [X', X'']$
  - *If R suggests* $p < p^*$*, the offer is rejected*
- *When* $B \geq \dfrac{\overline{X} - \underline{X}}{2}$*, a tender offer occurs for any* X_R*,* $b^* = \dfrac{\overline{X} + \underline{X}}{2}$*, all shareholders tender*

Empirical implications

- Announcement stock price reaction (and takeover premiums)
- Incidence of block trades and tender offers
- Concentrate on the effects of legal shareholder protection

Stock price reaction: block trades vs. tender offers (Proposition 2)

Proposition

For a given incumbent blockholder's share, the stock price reaction to a tender offer is higher than to an announcement of a block trade:

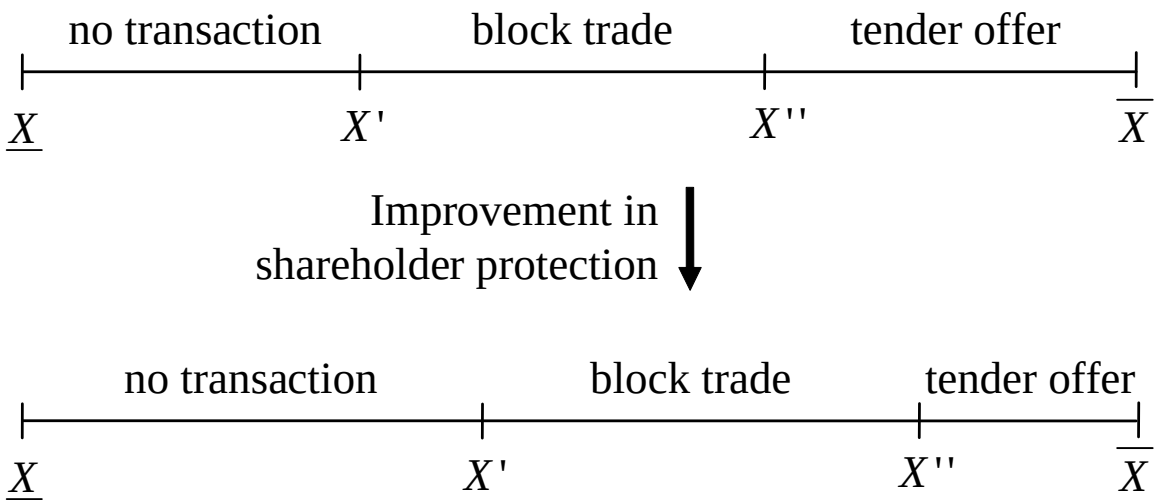
$$\frac{X'' + \overline{X}}{2} > \frac{X' + X''}{2}$$

Consistent with empirical observations:

- Barclay and Holderness (1991): Substantial difference in CAR between control transactions that eventually involved a TO and those in which only a BT occured.
- Martynova and Renneboog (2008): summary on the targets' stock returns around TO announcements. Compare to BT in, e.g., Barclay and Holderness (1991), Kang and Kim (2008), Allen and Phillips (2000). Numbers in Martynova and Renneboog are higher.

Incidence of negotiated block transfers and tender offers (Proposition 3)

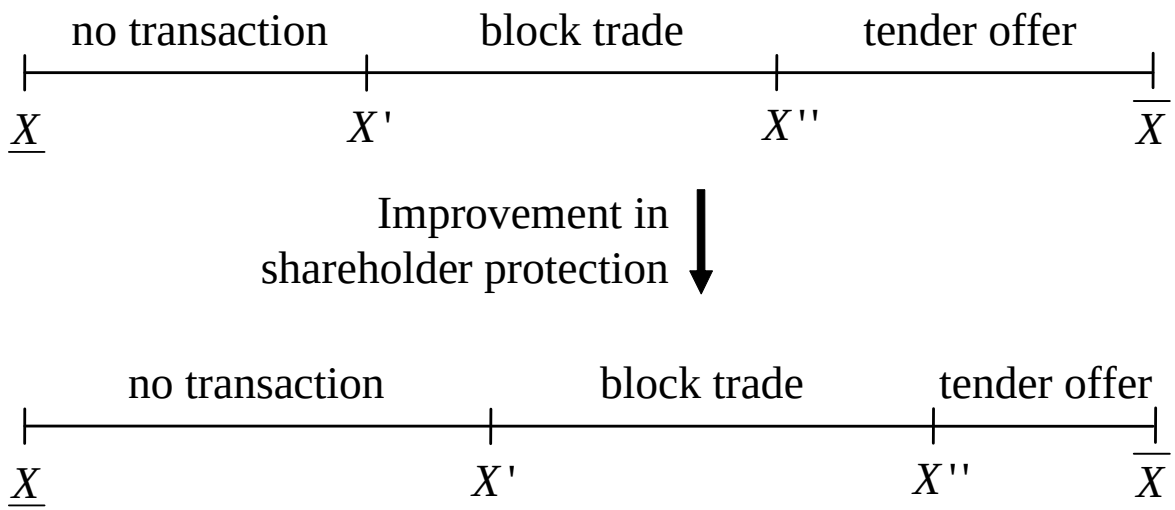
Improvement in protection: decrease B and increase X uniformly by ε.



Proposition

For a given incumbent blockholder's share, when shareholder protection is stronger, a transfer of control to an acquirer is less likely to occur. Moreover, as shareholder protection improves, takeovers via a tender offer become less likely relative to negotiated block transfers.

Stock price reaction and takeover premium (Proposition 4)



Proposition

For a given incumbent blockholder's share:

- *the target's stock price reaction to a tender offer and the takeover premium are higher in countries with stronger shareholder protection (consistent with Rossi and Volpin, 2004)*
- *the target's stock price reaction to a block trade announcement is higher in countries with stronger shareholder protection*

Extensions. Positively correlated X and B

- Redefine: $X = (1-\varphi)V,\ B = \varphi V$, asymmetry of info about $V \sim U\left(\underline{V},\ \overline{V}\right) \Longrightarrow$ same results (equilibrium structure, stock price reaction, effects of shareholder protection)

Extensions. B (and X) as a function of the controlling party's stake

- Empirically B seems to be increasing with α when $\alpha < 1/2$, but for $\alpha > 1/2$ the reverse may be true (Burkart et al, 1998, 2000)
- If the latter is true, then R would want to acquire just 50% in a tender offer. Then two considerations:
  - Even for constant B, bidding for 50% makes tender offers attractive for a greater set of types
  - Attractiveness of a tender offer vs. block trade is futher affected by whether $B(\alpha) > B(50\%)$ or vice versa

Extensions. Counderbidding by I

- Possibility to launch a counter offer raises (weakly) the equilibrium bid and deters some tender offers
- Hence, block trades should be relatively more likely under the possibility to counter
- Whenever our $b^* > X_I + B$, the equilibrium should not change (I will not overbid)
- Otherwise $X_I + B$ is constraining b from below $\Longrightarrow$ tender offers are less likely but equilibrium structure is the same

Conclusions

- A model that rationalizes the existence of both block trades and tender offers in equilibrium (in contrast to the previous literature) in firms with a dominant minority blockholders
- Choice between a block trade and a tender offer is affected by the acquirer's (unobserved) ability to generate value in the target firm
- Explanations for some empirical regularities and new empirical predictions:
  - Incidence of corporate control transactions of the two types
  - Stock price reaction and takeover premiums. In particular: higher stock price reaction to announcements of tender offers relative to block trades, higher stock price reaction to announcements of corporate control transactions under stronger shareholder protection