

Econ 234C – Corporate Finance

Lecture 6: External Investment (II)

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Outline

1. Exams, Homeworks etc.
2. Wrap up of External Investment (I): Stylized Facts
3. External Investment (II): Corporate Control and Voting
4. External Investment (III): Market Inefficiencies
5. External Investment (IV): Managerial Hubris

1 Exams, Homeworks etc.

- Exam (midterm, final)
 - Homeworks give a basic idea, but exams will be closer to research (*theory*: playing around with a different approach; *empirics*: evaluate an empirical approach, suggest an empirical approach).
 - It is not necessary that you have done the homeworks.
 - Similar to open questions asked in class, e.g. how an objective function would change if under different incentives; how to measure exogenous shocks to cash flow.

- Field Exam in CF
 - papers & topics discussed in class
 - NOTE: I keep adjusting the syllabus to reflect what we are covering.
 - Textbook for (part of) the theory: Hart's Clarendon Lectures, 2nd part

- Your research
 - 3rd years and higher: please come and see me!
(Also second-years, of course ...)
 - Have something along the lines of the “Ross Levine research sheet” ready.

- Homework 2

- Definition of variables: previous literature; differences in previous literature; comparability with previous literature (!); your own judgement; examples: Q, CF
- Example for comparability: definition of CF in an investment/CF paper
- Most recent definitions in major papers: Use the definitions in my paper “Who makes acquisitions? CEO overconfidence and the Market’s reaction.”

2 External Investment (I): Wrap-Up of Stylized Facts

Empirical findings:

- Huge economic significance (whether measured in dollar value of deals, dollar value of firms involved, shareholder value destroyed at announcement, job lost/created/changed, ..)
- Merger waves
- Merger waves at different times in different industries
- Negative effect on value increases for shareholders of acquiring company at announcement
- Large amount of stock financing in the 1990s (70% any stock; 58% all stock) compared to 1970s/1980s (45% any stock; 37% / 32% all stock)

Contrast this with **Neoclassical Theory**: “mergers are market instruments to prevent inefficient firm management.” E.g.: efficiency-improving response to industry shocks (e.g. deregulation).

We will review 3 theoretical / empirical approaches to explain the above facts. All are in (partial) contradiction to the neoclassical view:

1. **Free-riding** (Grossman and Hart, 1980)
Deviation from neoclassics: Free-riding prevents efficient raiding decisions
2. **Misvaluation** theories (Shleifer and Vishny, 2003)
Deviation from neoclassics: inefficient markets (investor sentiment / investor biases)
3. **Overconfidence** / Hubris theories (Roll, 1986; Malmendier and Tate, 2007)
Deviation from neoclassics: managerial biases (at least MT does not much inefficiency)

3 External Investment (II):

The free riding problem

Neoclassical Argument: “Mergers are market instruments to prevent inefficient firm management. If management creates less value than possible, raiders acquire the company, fire management, implement value-maximizing management decisions, and sell with profit.”

Grossman-Hart (1980) Counter-Argument: If raiders do not reap the full benefit (return to) raiding, they will undertake too few acquisitions.

Argument: Raiders share benefit with shareholders who otherwise do not sell their shares (but hold on to them and reap the proportional benefit from the acquisition as shareholder).

Model

Assumptions, Notation:

- Target firm T with widely dispersed ownership
- Value target without acquisition: V_T
- Value target after acquisition: $V_T + e$
(e = management improvement; before: synergies)
- t shares outstanding (A needs to acquire at least $.5t$)
- V_T , e common knowledge, deterministic (for now)
- A bids price P for all t shares; cost of raiding c .

- Rule out bids with stochastic outcomes
→ Restriction to bids that are expected to be successful (unsuccessful) with certainty.

Free-riding argument:

Consider a tender offer that is expected to be successful.

- If $P < V_T + e$?
- If $P \geq V_T + e$?

When do raids take place?

- Differences in opinion about value of T after raid: systematically higher valuation of raider ($V_T + \hat{e}$) than of old target shareholders ($V_T + e$).
 - Differences in risk preferences
 - Alternatively: selection on hubris!
- *Create* differences in value: transfer to raider post-raid, e.g.
 - Pay raider salary
 - Issue shares to raider
 - Sell T 's assets to raider below value
 - Sell T 's output to raider below value

Consider $\phi =$ **post-raid value transfer**.

- For which P is tender offer successful?
- Under which condition is P below market price of T successful? Interpretation?
- Let's assume $P \geq V_T$. Let's assume that raider can make a take-it-or-leave-it offer. Profit of the raider?

Conclusion: When do we reach efficiency?

Ex-ante efficiency

We have shown how ex-post efficiency increases as raids are made more likely.

Raids may also effect ex-ante efficiency, e.g.

- Incumbent T management could obtain $V_T + e_{\text{raider}}$, but:

$$\arg \max_{e \in [0; \infty)} U(e) = 0 \quad (e.g. U'(e) < 0)$$

- Which e does manager choose for $\phi = 0$?

Which e for $\phi > 0$?

(Assume zero utility if fired by raider. Allow for stochastic e_{raider} , c .)

Other remedies

- Conditional offers. Here: conditional on 100% acceptance.
Intuition: each voter (shareholder) is pivotal.
- Deviate from one-share-one-vote (Grossman and Hart, 1988)
 - Go back to $\phi = 0$ scenario.
 - OSOV: portion of votes = portion of dividend stream (NPV / market value)
 - Different voting rights
 \implies bidder can obtain control (50% votes) with less than 50% dividend-rights

\implies bidder buys small fraction of dividend rights via high-voting-right shares, willing to pay a premium.

- No general result on optimality of deviation from OSOV. Depends on $U(e)$.

4 External Investment (III): Misvaluation

Shleifer-Vishny Model

Two firms A and T with

- Capital Stock: K_A and K_T
- “Short-Run” (Current) Value:

$$V_A = S_A K_A$$

$$V_T = S_T K_T$$

$$V = S(K_T + K_A)$$

w.l.o.g. $S_A > S_T$. (S, S_A, S_T are valuations per unit of capital.)

(Typically $S_A > S > S_T$.)

⇒ Short-run gains from mergers: $V - V_A - V_T$

⇒ For example, zero perceived synergies if S such that

$$S(K_A + K_T) - S_A K_A - S_T K_T = 0$$

- “Long-Run” Values:

$$\bar{V}_A = qK_A$$

$$\bar{V}_T = qK_T$$

$$\bar{V} = q(K_A + K_T)$$

⇒ Long-run gains from mergers: 0.

- Managers act in own interest and exploit market irrationalities.
- Investors draws no inferences about the **LR** from merger announcements!

Typical Case: A acquiring T

- A pays $PK_T (\geq S_T K_T)$
 - E.g. $P = S_T \implies$ No takeover premium.
 - E.g. $P = S \implies$ Payment proportional to **SR** combined value.
- Announcement effects
 - Acquirer:
$$\begin{aligned} & S(K_A + K_T) - PK_T - S_A K_A \\ &= (S - S_A)K_A + (S - P)K_T \end{aligned}$$
 - Target:
$$(P - S_T)K_T$$

\implies A -shareholders lose from dilution ($S - S_A < 0$) or gain from “money machine” ($S - S_A > 0$)

\implies A -shareholders gain from high SR assessment of synergy relative to price ($S - P > 0$).

- Long-run abnormal returns if cash payment
 - Combined: 0
 - For A -Shareholders: $(q - P)K_T$. \longrightarrow Why? (Implicit assumptions about financing?)
 - For T -Shareholders: $(P - q)K_T$. \longrightarrow Why?

- Long-run abnormal returns if stock payment

if T -shareholders get $x = \frac{PK_T}{S(K_A + K_T)}$.

→ → What are the **implicit assumptions** to get to x ??

→ → Justification?

- Combined Value: 0

- For A -Shareholders: $(q - P\frac{q}{S})K_T$. → Why?

- For T -Shareholders: $(P\frac{q}{S} - q)K_T$. → Why?

⇒ In the LR, A -shareholders gain from high valuation ($S - P > 0$).

⇒ Compare to gains/losses with cash financing.

⇒ Compare to gains/losses in the SR.

Result: Difference between LR value creation and LR (mean-reversion) returns.

- LR return of A without acquisition: $(q - S_A)K_A$. (Negative if A initially overpriced.)
- *Incremental* LR return of A from acquisition: $(1 - \frac{P}{S})qK_T$.
(Positive if $P < S$.)

\implies In the LR, A -shareholders gain from high valuation ($S - P > 0$) even if overall LR return is negative. (“Not as negative as they would have been without the acquisition.”)

Conclusions

- Predictions of Market Timing Theory

1. Characteristics of stock mergers

- Acquirer has high prior returns. $\implies q > P \geq S$.
- Acquirer overvalued (signs: earnings manipulation, insider selling)
- Stock mergers disproportionately high when aggregate or industry valuations are high.
- Stock mergers disproportionately high when valuations are highly disperse.

2. Characteristics of cash mergers

- Target has low prior returns (is undervalued) $\implies q > P \geq S_T$.
- Cash mergers disproportionately high when aggregate or industry valuations are low.

Caveats

- Horizons.
 - E.g. if A has short horizon, the stock acquisition possible even if both A and the merged company are overvalued relative to T.
- As they say themselves in the beginning: this is about mergers in the 90s!
- Merger waves: they, too, need positive correlation (in over-/under-valuation).

Empirical issues:

How could you get a good benchmark for over/under valuation?

How could you separate the Tobin's Q effect from the over/under valuation effect?

How could you really get a good measure of the Long Run returns of the acquirers?

Readings for next week:

- Together with “Who makes acquisitions ...” and Roll paper, you may want to review Heaton (2002) if you have not done so yet.
- Intro into capital structure. (Good overview: Frank and Goyal, Tradeoff and Pecking Order Theories of Debt. To appear in Espen Eckbo (editor): The Handbook of Empirical Corporate Finance, Elsevier Science.).