

Econ 234C – Corporate Finance

Lecture 12: Corporate Governance

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Outline

1. Organization
2. Homework 3
3. Corporate Governance and Executive Compensation
 - Monitoring of Managers (Townsend 1979)
 - Other Topics (I) Corporate Governance
 - Other Topics (II): Executive Compensation
4. Final Remarks

1 Organization

- “Usual” OHs: today, Tu, 5/1, 12-2pm
- Review Session / Extended OHs: Tu, 5/1, 4-5pm, 608-7 Evans
- Review Session (2): Mo, 5/7 (probably 6pm)
- Final exam: Tu, 5/8, 10-12pm, usual class room

2 Homework 3

Purpose: Becoming familiar with mergers data and with commonly-used approaches to evaluating their returns.

General comments:

- Gains to acquirers versus gains to targets

Description of prior literature

- **Always** mention sample period and at least a rough description of the methodology and weighting (EW, VW). Otherwise the reader referee learns nothing from your description. (Variation over time and in econometrics too large!) Also mention the sample size.

I am attaching a small data set with information about mergers; these mergers are selected to be “contested” mergers, i.e. to have at least two bidders.

- Identify and describe the leading methodologies used in the literature to evaluate mergers. Make sure that you write down exactly the formula for abnormal returns, details about the calculation of standard errors. Also point out the shortcomings of the methodologies.

Here are a few pointers to the literature:

- Loughran and Vijh (1997), Do Long-Term Shareholders Benefit From Corporate Acquisitions, Journal of Finance.
- A Brav (2000), Inference in Long-Horizon Event Studies: A Bayesian Approach with Application to Initial Public Offerings, Journal of Finance.

- JD Lyon, BM Barber, CL Tsai (1999), Improved Methods for Tests of Long-Run Abnormal Stock Returns Journal of Finance.
- ML Mitchell, E Stafford (2000), Managerial Decisions and Long-Term Stock Price Performance, Journal of Business.
- RF Bruner (2002, Does M&A pay? A survey of evidence for the decision-maker, Journal of Applied Finance.

Your empirical work

- Apply the methodology of Loughran and Vijh (1997) to evaluate the returns to the mergers included in the attached data set. Discuss the results.
Here are a few suggestions:

- For this part, you can drop all the “losers” in the data. I recommend creating ‘case identifiers’ (for each case of a contested merger) for the later analysis.
 - You will need to merge in information from CRSP and from COMPU-STAT.
 - A key difficulty will be the successful merge of information between the attached data, CRSP, and COMPUSTAT. This may require a large amount of time and handchecking. The problem is the discrepancy in firm identifiers over time and between data sets. A helpful overview is on <http://firestone.princeton.edu/econlib/Match.htm>.
- Now apply the same methodology to the *losing* firms, i.e. those who do not actually perform a merger. Compare your result to those for the winners. What do you conclude? What biases may taint this comparison?

3 Corporate Governance

3.1 THEORY: Optimal monitoring / auditing contract

- Seminal paper: Townsend (1979) Costly State-Verification (CSV) Model
- (Original) context: Derive (rather than assume) optimal mix of securities / capital structure, given misaligned incentives of managers.
- Link to Corporate Governance:
 - Explicit (neglected) assumption about ‘hiding income (accounting fraud, perks, option timing ...)
 - Explicit derivation of optimal contractual/monitoring response.

- Assumption 1: managers prefer to hide (steal) income.
 - Side note: later capital-structure literature moved instead to ‘private benefits of control’ or ‘shirking’ as the source of the basic conflict of interests. But ‘stealing’ assumption useful, too, esp. in light of recent accounting issues.
- Assumption 2: Lenders can verify income at cost K (e.g. auditing cost).
- Set up:
 - firm, investors risk-neutral
 - (non-cash) assets A , for simplicity $A = 0$;
 - cash C ,

- cost of investment I ,
- return to investment $R \in [0, \infty)$,
 - * stochastic (density $f(R)$)
 - * observable but not verifiable

- Timeline

- Question: Optimal contract design?

Proposition: *For any contract satisfying (PC) with equality and satisfying the (IC) constraint of the firm (“no lying”) with expected payoff $E[w]$ for the firm, there is a standard debt contract resulting in a higher expected payoff.*

Proof:

STEP 1: Show that for any contract, there is a debt contract with weakly higher repayment to the investors and lower auditing costs than the the original contract.

STEP 2: For any such debt contract (derived in STEP 1), there is another debt contract with equal repayment to the investors as in he original contract and lower auditing costs than in the original contract and in the first debt contract.

STEP 1: Consider an arbitrary contract satisfying (PC) and (OC) with auditing region \mathfrak{R}_0 , no-audit region \mathfrak{R}_1 , and constant repayment D for all $\hat{R} \in \mathfrak{R}_1$.

Now consider a debt contract with auditing region $\mathfrak{R}_0^D = [0, D)$, no-audit region $\mathfrak{R}_1^D = [D, \infty)$, and constant repayment D for all $\hat{R} \in \mathfrak{R}_1^D$.

The expected audit cost under the debt contract is weakly smaller than under the original contract since $\mathfrak{R}_1 \subseteq \mathfrak{R}_1^D$

The expected repayment to investors under the debt contract is weakly smaller than under the original contract since (i) the repayment is identical $\forall R \in \mathfrak{R}_1$ (namely D), (ii) the repayment is weakly smaller under the original contract than under the debt contract $\forall R \in \mathfrak{R}_0 \cap \mathfrak{R}_1^D$ (since it is D under the debt contract but weakly less under the original contract by Lemma 3 from class), and (iii) the repayment is weakly smaller under the original contract than under

the debt contract $\forall R \in \mathfrak{R}_0 \cap \mathfrak{R}_0^D$ (since it is $R - K < D$ under the debt contract but weakly less than D under the original contract by Lemma 3 from class).

STEP 2: Suppose investors obtain strictly positive surplus (rather than exactly their reservation repayment) under the debt contract in STEP 1. Then $\exists D' < D$ s.t. $[1 - F(D')]D' + \int_0^{D'} Rf(R)dR - F(D')K = I - C$ (i.e. a D' such that the participation constraint is binding). Under this new debt contract, audit costs are lower since $\mathfrak{R}_0^D \subset \mathfrak{R}_0^{D'}$ and the expected repayment to the investors is lower (equal to reservation repayment) by construction.

Remarks:

- Paper starts the 'security design' literature: endogenous derivation of contract design of financial securities.
- Note: the classic debt-contract result is not robust to random auditing.
- Note: the result is also not robust to renegotiation (i.e. if parties cannot commit not to renegotiate auditing, see Gale and Hellwig (1989))

Relevance for Corporate Governance

- Model assumption: 'borrower cannot consume any portion of R before audit but can withdraw the entire residual after audit.'
- Interpretation 1: manager steals, but can be forced to repay (and is liquid enough to repay) in case of audit.
- Interpretation 2: manager can transform hidden income over time into private benefits (only if firm is not shut down).

3.2 EMPIRICS: Exogenous variation in monitoring / auditing / entrenchment

Starting point: **CEO pay**

- Some facts
 - CEO pay has increased $\sim 600\%$ over last 20 years; average worker's pay by $\sim 15\%$
 - Median CEO pay in 2000: 60% equity-based (valued at grant date); in 1990 only 8%.
- Question: appropriate pay-for-performance sensitivity?
 - Jensen and Murphy (1990): “Are CEOs paid like Bureaucrats?”
 - * Compensation data 1974-1986
 - * \$1,000 increase in firm value increases CEO wealth (due to pay, options, stocks) by only \$3.25. \implies ‘too low’

- Hall and Liebman (1998)
 - * Compensation data 1980-1994
 - * \$1,000 increase in firm value increases CEO wealth by \$6.00
 - * Sensitivity larger when scaled by managers' wealth instead of firm value. E.g. in 1994, median CEO at 10th percentile of performance loses \$436k, at 90th percentile makes \$8.6m.
- 1990s: Dramatic increase of CEO pay and stock option grants
- CEOs not bureaucrats, but what are they?
- Problems:
 - If company does badly, options are repriced → lose incentives
 - Bertrand-Mullainathan (2004): Rent seeking by CEO to get higher pay
 - Bertrand-Mullainathan (2002): CEOs rewarded for luck
 - Why do rank-and-file workers get options?

Example 1: Bertrand-Mullainathan (2001)

- Topic: CEO pay (“Are CEOs rewarded for luck?”)
- Data on CEO pay (salaries + stock options) + company performance (accounting / stock returns) from ExecuComp, CRSP, Compustat
- w_t = pay at time t
- y_t = performance at time t
- X_t = set of controls
- L_t = luck variables measured at time t

Empirical specification:

- First stage: $y_t = \alpha + \beta_0 X_t + \beta_1 L_t + \varepsilon_t$
 - Obtain predicted performance based on luck: \hat{y}_t
- Second stage: $w_t = \gamma + \delta X_t + \lambda \hat{y}_t + \varepsilon_t$
 - Coefficient on λ should be zero according to standard principal/agent model
- Measures for L :
 1. price of oil on pay in 51 US oil companies: 1977-1994
 2. industry-specific exchange rate: 792 corporations (Yermack and Shleifer data)
 3. mean accounting return in 2-digit industry (excluding same company)

- Why is there pay for luck?
 - CEOs stealing.
 - Inability of board (monitors): mis-take luck for ability.
 - Collusion / preference of board for high pay + justifiability of pay (tangible measures) towards shareholders.
- Does this result partly go away in better-managed firms?
 - Proxy: number of large shareholder in board
 - Check on actions of CEO
 - New second stage:

$$w_t = \gamma + \delta X_t + \lambda \hat{y}_t + \lambda GOV * \hat{y}_t + \varepsilon_t$$

Example 2: Bertrand and Mullainathan (2004, JPE): Enjoying the Quiet Life

- *Anti-takeover laws.*
- Business combination laws that make takeovers more difficult: most stringent; moratorium (3-5 yrs) on assets sales, mergers.
- Exploit variation in implementation across states
- Diff-in-Diff – outcome y

$$y_{i,t} = \alpha + \beta d_{i,t} + \eta_i + \varphi_t + \varepsilon_{i,t}$$

where i is state, t is year and $d_{i,t} = 1$ if antitakeover law is in place in state i in year t

Effects of anti-takeover laws

- Blue-collar wages rise by 1%
- White-collar wages rise by 4%
- Rate of plant destruction falls.
- Rate of plant creation falls!
- Total factor productivity decreases by 1%
- Return on capital decreases by 1%

3.3 Open Questions

- Boards
 - Optimal composition of boards
 - Optimal decision-making mechanism on boards. (What should be approved by board, what not?)
 - Optimal compensation structure for board members.
 - Key: instrument (regulation)
- Fraud detection

- Appropriate (shareholder-value maximizing) CEO compensation and monitoring
 - CEO selection
 - CEO incentives
- For all of the above:
 - careful modelling!
 - data from other countries (different reforms, different institutions, ..)

4 Some unsolicited advice for thesis work in CF (and related applied-micro fields).

1. Get to know at least neighboring “applied micro” fields (at least 1 such field very well). Some of the most exciting recent papers were grounded in labor economics (Bertrand-Schoar), public finance (Chetty-Saez), international (Bertrand), development economics, behavioral economics, ...
 - Methodology - could it be applied in CF? (Nearest-neighbor matching; new panel-data techniques)
 - Questions - are they relevant to CF? (Evaluating the impact of “leaders” in political economy [Jones-Olken], family ties, networks, ...).
 - Questions (2): However, be prepared for the eternal “Can you make money? What is the arbitrage strategy?” type of question.

- Date – you always get an extra bonus for a new data set (international; more micro, e.g. plant level, new contract data, e.g. VC).

2. Theory versus Empirics:

- Corporate Finance has been going through waves (contract-theory wave → mostly theory; corporate governance wave → at the onset very atheoretical).
- Most promising: careful model + empirical test (with different weights). (*This is my personal view, but it also corresponds to the recent publication process.*)
- Be open to structural approaches, especially given the lack of natural/policy experiments – but be critical, too. (What do we learn from the estimation?)

- Hunt for natural/policy experiments.

3. Follow recent work ... but don't follow it too much.

- Checking out the NBER cf / bf programs, AFA, WFA is useful.
- Reading too many papers can be harmful since it induces narrow-follow-ups and refinements. Go back to such detail only when you do the literature review for your paper.

4. "Learn the language."

- Attend seminars! (Finance, Financial Economics, Real Estate, ...).
- Definitely attend job-market seminars.

- Try to RA for a professor who works on the topics you are interested in (not necessarily in Berkeley).

5. Talk as much as you can about what you are working on. Here are some ways to ensure this:

- My favorite one: Work with a co-author.
- Talk regularly to a professor. (Really regularly! Stop by at least 2-3 a month though not necessarily the same person.)
- Organize student presentations. (We did 'pizza dinners' once a week. You may even get funding for this.)
- Try to present as often as possible ... in any student lunch that might be related to your topic (Behavioral, Public, Labor, IO, ...)

6. Motivation

- Do not get discouraged! Unproductive periods come with the job ...
(Side-note: If you stay in academia, you will have to deal with failed projects for the next 40 years or so. Learn to deal with it now!)
- Try to push ideas to the point where they either work or don't work.
Don't keep lingering ideas ...
- Think about topics you care about (comparative advantage!)
- Think about topics others care about (co-authors, professors, ..)
- Think about socially important topics, if you can.
- Come and see me :-)