# Mergers and Acquisitions

# Classifying M&A

- Merger: the boards of directors of two firms agree to combine and seek shareholder approval for combination. The target ceases to exist.
- Consolidation: a new firm is created after the merger, and both the acquiring firm and target receive stock of this firm (e.g. Citigroup)
- Tender offer: A firm offers to buy stock of another firm at a specific price. This bypasses the board of directors. These offers are used for hostile takeovers.

# Classifying M&A

Acquisition of stock

A company takes a controlling ownership in another company

The offer is communicated by public announcements.

Acquisition of stock versus merger:

a) Acquisition of stock does not require a vote.
b) Acquisition of stock bypass the target firm’s management.
c) Acquisition of stock is often unfriendly.
d) Complete absorption of one firm by another requires a merger.

# Classifying M&A

- Divestiture: sale of all of a company to another party for cash or securities

- Spin-off: A parent company creates a new legal subsidiary and distributes shares it owns in the subsidiary to its shareholders as a stock dividend

- Equity carve-out: A parent firm issues a portion of its stock or that of a subsidiary to the public

- Leveraged buyout: purchase of a company financed primarily by debt

# Classifying M&A

- A horizontal merger occurs between two firms within the same industry.  (Procter and Gamble with Gillette 2006, Exxon and Mobile 1999).

- A conglomerate merger occurs when the two companies are in unrelated industries.

- Vertical mergers concern two firms operating at different levels of the production chain. (eg AOL and Time Warner in 2000).

# Role of investment banks

- Strategic and tactical advice: screen potential buyers or sellers, make initial contact, provide negotiation support, valuation, deal-structuring guidance.

- The major IBs have groups within their corporate finance departments that offer advices.

- More and more often, multiple banks are hired for a single transaction. This reflects the growing size of M&A and the complexity of the transactions.

- Fees represent about 1-2% of the deal size.

# Buyer's motivation

- Synergies
- Market power, distribution networks
- Undervalued shares of the target
- Bad reasons:
  - Earnings growth
  - Diversification: If shareholders want to diversify they can do it themselves by investing in other companies.

# Synergies

Firm A is acquiring firm B. The value of firm A is $V_A$ and the value of firm B is $V_B$. The value of the combined firm is $V_{AB}$.

Synergy = $V_{AB} - (V_A + V_B)$

Synergy = $\sum_{t=1} \frac{\Delta CF_t}{(1+r)^t}$

# NPV of M&A

Firm A may have to pay a premium for firm B.

$$NPV = V_{AB} - (V_A + V_B) - (C - V_B)$$
$$= synergy - premium$$

Acquirer's shareholders: synergies do not imply positive NPV

# What are the synergies?

Operating synergies: Allow firms to increase their operating income from existing assets, increase growth or both.

- Economies of scale: For horizontal mergers mainly
- Greater pricing power from higher market share
- Combination of different functional strength
- Higher growth in new or existing markets

Financial synergies:

- Debt capacity can increase, because cash flows are more stable
- A “cash slack” firm and a firm with high-return projects can increase value by merging
- Tax benefits if a profitable company acquires a money-losing one

# Tax gains

| | Firm A | | Firm B | | Firm AB | |
|---|---|---|---|---|---|---|
| | State 1 | State 2 | State 1 | State 2 | State 1 | State 2 |
| Taxable income | 200 | -100 | -100 | 200 | 100 | 100 |
| Taxes | 68 | 0 | 0 | 68 | 34 | 34 |
| Net income | 132 | -100 | -100 | 132 | 66 | 66 |

# Target type and acquisition motive

| Motive | Then the target firm... |
|---|---|
| Undervaluation | trades lower than its value |
| Diversification | is in a different business |
| Operating synergy | has characteristics that create operating synergy:<br>Cost saving: in the same business to create scale economies<br>Higher growth: with potential to open up new markets |
| Financial synergy | has characteristics that create financial synergy:<br>Tax savings: provides a tax benefit to the acquirer<br>Cash slack: has great projects but no funds |
| Control | is badly managed |
| Managers' interest | has characteristics that meet CEO's ego and power needs |

# Seller's motivation

- Monetary motivation
- Need of expansion capital
- Elimination of personal liabilities

# Who benefits from a merger?

Effects of takeovers on stock prices of bidder and target in the short-run:

Successful bids:

| | Target | Bidders |
|---|---|---|
| Tender offer | 30% | 4% |
| Merger | 20% | 0% |

Unsuccessful bids:

| | Target | Bidders |
|---|---|---|
| Tender offer | -3% | -1% |
| Merger | -3% | -5% |

Long-run performance:

| | |
|---|---|
| Acquirers using tenders | 61.7% |
| All acquirers | -6.5% |

Observations:

1. Shareholders of target firms achieve short-term gains. The gain is larger for tender. This reflect the fact that takeovers sometimes start with a friendly merger proposal, are rejected, and this leads to a tender offer.

2. Bidding firms earn less. Why?
   - Bidding firms are larger
   - Management does not act in the interest of shareholders
   - Free rider problem

3. Long-run performance

   Unfriendly bidders are more likely to replace poor management. The removal of poor managers contributes to a positive long-run performance.

# Role of investment banks

The advisor’s fee is close to 1%-2% of the transaction.
What is the added value of advisory?

- <u>Transaction costs hypothesis</u>

IB are efficient in analyzing acquisitions for three reasons:

1. Economies of specialization (superior knowledge)
2. Economies of scale in information acquisition
3. Reduced search costs

- Asymmetric information hypothesis

IB reduce information asymmetry between bidder and target.

- Contracting costs hypothesis

IB certify the value of the transaction, this signals the quality to investors rather than relying on management. Indeed, IB are liable for misrepresentations.
The reputation of IB should insure fair value.

## Empirical evidence (Servaes Zenner 1996)

-Transaction costs hypothesis:

Acquiring firms are significantly more likely to use an IB when the acquisition is complex (larger, hostile or noncash) and when they have less prior experience

-Asymmetric information hypothesis:

Acquiring firms are more likely to use an IB when the target operates in many different industries.

- Contracting costs hypothesis:
  Acquiring firms are less likely to use an IB when insider ownership is large

- Regarding the choice of first tier versus second tier IB, evidence supporting transaction hypothesis: firms choose first tier IB when they have little experience

- Conclusion: strong support for the transaction cost hypothesis. Some support for asymmetric information and contracting hypothesis.

# Do IB add value in mergers?

- Bowers and Miller (1990)

Wealth gains are larger when a first-tier IB is advising. Suggests that choosing a good advisor is crucial.

- Saunders and Srinivasan (2001)

Fees include a relationship premium. Suggests that rents are paid to banks with superior information.

- Rau (2000)

No impact of advisors on abnormal return. However, there is a positive relationship between IB market shares and deal completion rates.

# Investment banks vs. Commercial banks

- Commercial banks and IB advices do not have the same advisory value.
- Differences between commercial and investment banks:

1. <u>Certification effect</u>

- CB may have private information about a firm, and then use it in supplying advisory services
- Long-term relationship with either part to merger
- IB have less private information about a firm financial situation
- Comparative advantage for CB

## 2. Conflicts of interest

The target may have a financial problem only known by the bank (lender)

Commercial bank self-interest in assuring the completion of the merger may generate conflicts of interest.

A CB may advice to undertake acquisition if it can earn large fees from financing the merger through its lending department.

Allen et al. (2004)

Evidence of certification effect for the target. Targets earn abnormal return upon merger announcement when they hire their own CB as merger advisor.

Reasons:

1. It is the target that has to be priced
2. Target is smaller and more opaque

Acquirers tend to get loans from the same CB they get advices from.

The conflicts of interests are thus stronger for acquirers. No evidence of certification for them.

# Investment banks market shares

- How are market shares determined?
- Two hypothesis:

1. <u>Superior deal hypothesis</u>

Performance of the acquirer in the mergers and tender offers advised by the IB is an important determinant of the bank's market share. Getting top-tier IB advices should provide higher excess return.

2. <u>Deal completion hypothesis</u>

Valuation of deals is not important. Market share mainly depends on the number of deal completed. No relationship between excess return and market share.

## Empirical findings (Rau (2000))

1. Market shares depend on the proportion of completed deals (85% for top-tier IB, 74% for lower tiers IB).
2. Market shares are unrelated to the performance of the acquirers.
3. Top-tier IB advice their clients to pay higher premiums. Acquisition premium is the difference between the target share price and the highest price paid per share in the transaction.

All this supports the completion deal hypothesis.

Given the incentive problems, why don't companies insist on other contracts?

- Unawareness
- Reputation maintenance prevents the bank from exploiting its position
- Conflict of interest between management and shareholders
- Companies don't rely on the evaluation of investment banks
- Market power of big IB

# M&A Financing

# Post merger share price

- Frequently, the stock price of both the acquirer and the target will adjust immediately following the announcement of the acquisition
- The target stock price will increase by somewhat less than the announced purchase price as arbitrageurs buy the target's stock in anticipation of a completed transaction
- The stock price of the acquirer may decline, reflecting a potential dilution of its EPS or a growth in EPS of the combined companies that is somewhat slower than the growth rate investors had anticipated foe the acquiring company without acquisition
- Hence, the P/E ratio of acquiring firms can go down

# Share-exchange ratios

- If the transaction is made by stock, the share-exchange ratio (SER) must be negotiated. As fixed number of shares of the acquirer are exchange for each share of the target's stock
- The SER can also be defined in terms of the \$ value of the negotiated offer price per share of the target stock ( $P_T$ ), to the \$ value of the acquirer's share price ( $P_A$ ). The SER is:

$$SER = P_T / P_A$$

- Example: The price offered is \$40 per share, and the acquiring firm's share price is \$60. Then the SER is 40/60=0.666

# Estimating postmerger earnings per share

- The decision to merge is often determined by its impact on the EPS following the acquisition. Earnings dilution, even temporary, can cause a dramatic loss in market value for the acquirer

- The postmerger EPS reflects the EPS of the combined companies, the price of the acquirer and target stock, and the number of shares of acquirer and target stock outstanding

- Postmerger EPS : $$\frac{E_{T+A}}{N_A + [N_T \times \frac{P_T}{P_A}]}$$

where $E_{T+A}$ is the sum of the current earnings of the target and acquiring companies plus any increase due to synergy, $N_A$ is the acquirer number of shares, and $N_T$ is the target number of shares

# Estimating postmerger earnings per share

- Example: $E_{T+A} = \$1{,}000{,}000$

  $N_A = 200{,}000$

  $N_T = 100{,}000$

  $P_T = \$20$

  $P_A = \$40$

The postmerger EPS is then:

$$\frac{\$1{,}000{,}000}{200{,}000 + [100{,}000 \times \frac{\$20}{\$40}]} = \$4.00$$

# Estimating postmerger share prices

- The share price of the combined firms reflects both the anticipated EPS for the combined firms and the P/E ratio investors are willing to pay.

- Illustrative example: The acquirer offers $84.3 for each share of the target. The acquirer expects no change in the P/E multiple, and conservatively assumes no immediate synergy.
- We have the following data:

| | Acquirer | Target |
|---|---|---|
| Earnings | $281,500 | $62,500 |
| Number of shares | 112,500 | 18,750 |
| Share price | $56.25 | $62.50 |

# Estimating postmerger share prices

1. Exchange ratio: \$84.3/\$56.25=1.5

2. New shares issued by the acquirer: 18,750*1.5=28,125

3. Total shares of the combined firms = 112,000+28,125=140,125

4. Postmerger EPS for combined firms = (\$281,500+\$62,500)/140,125=\$2.46

5. Premerger EPS of acquirer = \$281,500/112,000=\$2.51

6. Premerger P/E = \$56,25/\$2.51=22.4

7. Postmerger share price = \$2.46*22.4=\$55.10 (vs. \$56.25 premerger)

# Estimating postmerger share prices

8. Postmerger equity dilution:

   Target = 28,125/140,125=20.1%

   Acquirer = 79.9%

<u>Implications</u>

The acquisition results in a $1.15 reduction in the share price of the acquirer
as a result of a $0.05 decline in the EPS of the combined firms.

Whether the acquisition is a poor decision depends on what happens over
time to the earnings.

# Estimating postmerger share prices

<u>All-cash purchase</u>

1. Postmerger EPS of the combined firms =
   ($281,500+$62,500)/112,000=$3.07

2. Postmerger share price= (postmerger EPS) * (premerger P/E)
   = $3.07*22.4=$68.77 (vs. $56.25)

The all-cash acquisition results in a $12.52 increased in the share price.

In practice, however, the P/E ratio should be lower for all-cash purchase.

# Stock or cash?

- In the 1980s, less than 2% of M&A were paid by stock. By 2000, it was more than 50%.
- Main distinction: In cash transactions, shareholders take all the risk. In stock transaction, the risk is shared.

# Fixed shares or fixed value?

- Boards must do more than simply choose between cash and stock. There are two ways to structure an offer: Companies can either issue a fixed number of shares or can issue a fixed value of shares.

- Fixed shares: The number of shares is certain, but the value of the deal may fluctuate between the announcement of the offer and the closing date.

- Fixed value: The number of shares depends on the share price of the acquirer on the closing date. The acquiring company bears all the risk: If the share price drops, it must issue more shares to pay the target's shareholders.

# Distribution of risk

| | Preclosing risk | Postclosing risk |
|---|---|---|
| <u>All-cash</u> | | |
| Acquirer | All | All |
| Target | None | None |
| <u>Fixed-share deal</u> | | |
| Acquirer | Expected % of ownership | Actual % of ownership |
| Target | Expected % of ownership | Actual % of ownership |
| <u>Fixed-value deal</u> | | |
| Acquirer | All | Actual % of ownership |
| Target | None | Actual % of ownership |

# How can companies choose?

- Valuation of the acquirer’s share
  - If the acquirer believes the market undervalues its shares, it should pay by cash.
  - There is evidence that cash payments are positively viewed by the market.

- Synergy risks
  - The financing decision also sends signals about the acquirer’s estimation of the synergy risks.
  - Offering stock can hedge the risk that the synergies won’t materialize.

- Preclosing market risk
  - A fixed-share is not a confident signal since the seller’s compensation drops if the value of the shares falls.
  - A fixed-share approach should be adopted if the preclosing market risk is relatively low.
  - The market reacts positively to a fixed-value approach.

# Acquisitions and private equity

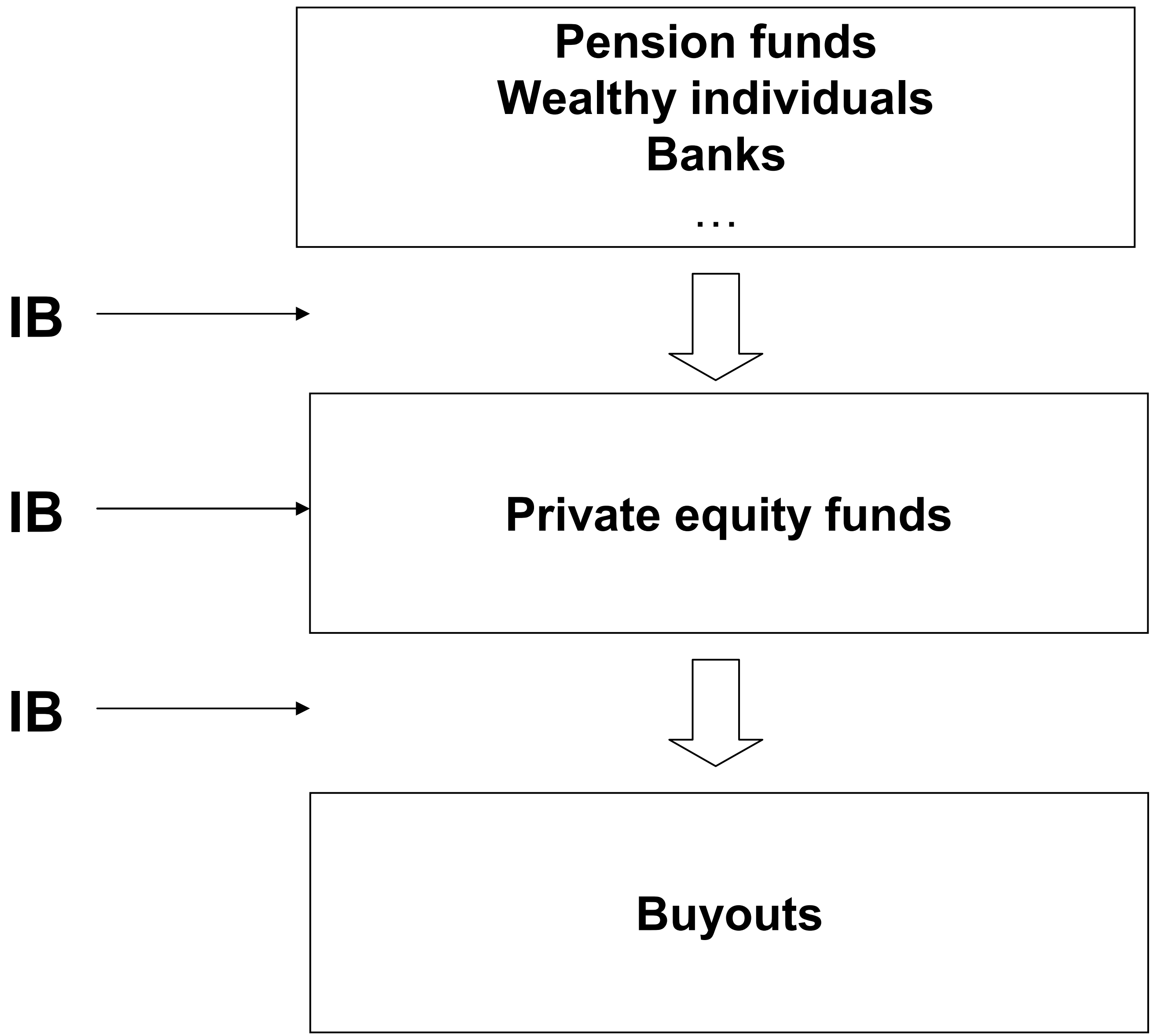
# Introduction

- Private equity : By opposition to public equity, it refers to shares in companies that are not publicly traded

- Private equity includes venture capital (VC) and leveraged buyouts

- Investors (pension funds, wealthy individuals…) invest in private equity funds, which usually control private equity firms in which they invest

- The company in which the private equity is made is called the portfolio company


Pension funds
Wealthy individuals
Banks
...
IB
IB
Private equity funds
IB
Buyouts

- Investment banks may either raise money for a private equity fund, or manage the fund itself
- Substantial entry costs ($100,000+)
- Illiquid investment (10-12 years maturity)
- If there are no good investment opportunities, the capital can be returned to the investors
- Very high risk, uncertain but potentially high return

## Facts about the private equity business

- $200bn+ was invested globally in 2007
- Buyouts generate 67% of private equity investment
- Regional breakdown:
  - US 40%
  - UK 22%
  - France 7%
  - Asia-Pacific 11%

## Advantages of private equity over senior debt

Issuing public equity is not always feasible, bank loans can be too costly.

Solution: Private equity, although it might imply giving away most of the equity.

Benefits:

- The issuing company benefits from the private equity firm experience
- The private equity firm will work hard to ensure that the company succeeds. This is not the case with bank loans

Typically: 20% of profits go to the general partner (private equity firm), 80% go the limited partners (investors)

# Leveraged buyouts (LBOs)

- LBOs consist of using borrowed money for a substantial portion of the purchase price of the buyout company
- The assets of the selling company typically secure the debt. Consequently, LBOs involve low-tech businesses with a history of consistent profitability and low debt
- Thanks to high leverage, the buyout firms enhance their potential investment return
- Critics: LBOs result in massive layoffs, lower tax revenues.
- Reality: LBOs are tools of economic reorganization, and induce risk-taking.

# Performance of private equity funds

# BVCA private equity performance survey

- Survey of UK private equity funds performance (2005)
- 362 funds in total
- The returns are derived from cash flows to/from investors mostly
- Result: UK private equity outperforms the FTSE over the medium and long-run
- Net return:

  Three years: 21.1% p.a.

  Five years: 11.9% p.a.

  Ten years: 16.4% p.a.

# Academic empirical evidence

Hypothesis: Private equity is risky $\Longrightarrow$ the return should be high

Moskowitz and Vissing (2002)

- The returns to private equity are not higher than the return to public equity between 1952 and 1999
- 10-year survival rate of 34% for private firms
- Conditional on survival, the distribution of return is wide

Phalippou and Gottschalg (2006)

- Gross-of-fees private funds outperform the S&P 500 by 2.96% a year.
  Net of fees, they underperform the S&P 500 by 3.8% a year.

- Why do investors buy private equity?

  - There are side benefits of investing in private equity funds, such as the establishment of relationship with an IB (for debt and equity issues, M&A consulting etc.).
  - Some agencies invest in private equity to stimulate the local economy (e.g. some European Union agencies).

## The impact of fees

There are fees that are not taken into account in performance Measures as reported by the private equity industry:

- 20% of investors hire gatekeepers
- Investors without gatekeepers spend resources on screening funds
- If investors need to liquidate their position before the fund closure, a penalty is charged
- Distributions are often made in shares, not in cash

The gross-of-fees alpha is estimated at 3%, so the total impact of fees is 6.7%