Week 14
Mergers & Acquisitions
Topics Covered

- Sensible Motives for Mergers
- Some Dubious Reasons for Mergers
- Estimating Merger Gains and Costs
- Accounting for a Merger
- Some Tax Considerations
- Proxy Fights, Takeovers, and the Market for Corporate Control
Mergers & Acquisitions

- **Merger**: two firms combine to form one larger firm

- **Acquisition**: one firm purchases another firm
  - The acquiring firm typically retains its identity while the target firm ceases to exist

- **Consolidation**: both the bidder and target are absorbed into a newly-created firm and cease to exist as separate entities
Mergers (1962-2008)

Number of Deals

Year:
- 1962
- 1964
- 1966
- 1968
- 1970
- 1972
- 1974
- 1976
- 1978
- 1980
- 1982
- 1984
- 1986
- 1988
- 1990
- 1992
- 1994
- 1996
- 1998
- 2000
- 2002
- 2004
- 2006
- 2008

Number of Deals:
- 0
- 2,000
- 4,000
- 6,000
- 8,000
- 10,000
- 12,000
Types of Mergers

- Horizontal merger
  - Combines two firms in the same industry
  - E.g.: JP Morgan Chase & Bank One Corp, Glaxo Wellcome & SmithKline Beecham, Daimler-Benz & Chrysler
  - Market extension merger: a type of horizontal merger: combines two firms that sell the same product in different market areas
Types of Mergers (contd. 1)

- Vertical Merger
  - Combines *a firm with a supplier or distributor*
  - Example: Barnes & Noble and Ingram Book Group (the nation’s largest book wholesaler)
  - Reasons:
    - Avoidance of fixed costs
    - Elimination of costs of contracting, payment collection, communication, advertising and coordination
    - Better inventory planning
Types of Mergers (cont. ii)

 Conglomerate Merger
  – Combines two companies that have no related products or markets
  – Very popular in the 1960s and 1970s
  – Motive: portfolio theory (diversification)
  – These mergers generally proved to be a disaster and were dismantled in the 1980s and 1990s b/c of the difficulty in creating value when combining two unrelated business
Products Extension Merger

- Combination of firms that sell different, but somewhat related products
- Example: Citicorp and Travelers Group
- These mergers are a cross between horizontal and conglomerate mergers
Example

Are the following hypothetical mergers horizontal, vertical, or conglomerate?

- a. IBM acquires Dell computer
- b. Dell computer acquires Wal-Mart, the supermarket chain
- c. Wal-Mart acquires H.J. Heinz
- d. H.J. Heinz acquires IBM
Sensible Reasons for Mergers

Economies of Scale

- A larger firm may be able to reduce its per unit cost by using excess capacity or spreading fixed costs across more units

- e.g. Bank of New York & Mellon Financial Corporation: annual cost savings of $700mil. (over 8% of the combined costs)

\[ \text{Reduces costs} \]
Sensible Reasons for Mergers

Economies of Vertical Integration

- Control over suppliers “may” reduce costs.
- Over integration can cause the opposite effect.
- Outsourcing: GM vs. Ford & Chrysler

Pre-integration (less efficient)

Post-integration (more efficient)
Combining Complementary Resources

- Merging may result in each firm filling in the “missing pieces” of their firm with pieces from the other firm.

- e.g. 2006 Merck acquired Sirna, a biotech company w/ knowhow in technology for turning off a targeted gene in a human cell.
Mergers as a Use for Surplus Funds

- If your firm is in a mature industry with few, if any, positive NPV projects available, acquisition may be *the best use of your funds*.

- During the oil price slump of the early 1980s, many cash-rich oil companies found themselves threatened by takeover
Eliminating Inefficiencies

- There are always firms w/ unexploited opportunities to cut costs and increase sales and earnings → acquisition is simply the mechanism by which a new management team replaces the old ones

- Martin and McConnell (1991): the chief executive is four times more likely to be replaced in the year after a takeover than during earlier years. The firms they studied had generally been poor performers.
Sensible Reasons for Mergers

➢ Industry Consolidation
  – Industries w/ too many firms and too much capacity (e.g. Defense industry, Banking industry)

Note: Ironically, MBNA was once owned by a previous version of Bank of America, which sold it in an IPO.
Dubious Reasons for Mergers

Diversification

– It is obvious that diversification reduces risk. Isn’t that a gain from merging?

– NO: diversification is *easier and cheaper for the stockholder* than for the corporation

– Investors should not pay a premium (actually discount) for diversification since they can do it themselves.
Dubious Reasons for Mergers

Increasing Earnings per Share

- Some acquisitions that offer no evident economic grains nevertheless produce several years of rising earnings per share.

- Example: acquisition of Muck and Slurry by the World Enterprise

- Bootstrap effect: *no real gain created by the merger and no increase in the two firms’ combined value*

- Tot. earnings double as a result of merger, but the number of shares increases by only 50% \(\Rightarrow\) EPS rise from $2 to $2.67
Dubious Reasons for Mergers

The Bootstrap Game

<table>
<thead>
<tr>
<th></th>
<th>World Enterprises</th>
<th>Muck and Slurry</th>
<th>World Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(before merger)</td>
<td></td>
<td>(after buying Muck</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and Slurry)</td>
</tr>
<tr>
<td>EPS</td>
<td>$ 2.00</td>
<td>$ 2.00</td>
<td>$ 2.67</td>
</tr>
<tr>
<td>Price per share</td>
<td>$ 40.00</td>
<td>$ 20.00</td>
<td>$ 40.00</td>
</tr>
<tr>
<td>P/E Ratio</td>
<td>20</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Number of shares</td>
<td>100,000</td>
<td>100,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Total earnings</td>
<td>$ 200,000</td>
<td>$ 200,000</td>
<td>$ 400,000</td>
</tr>
<tr>
<td>Total market value</td>
<td>$ 4,000,000</td>
<td>$ 2,000,000</td>
<td>$ 6,000,000</td>
</tr>
<tr>
<td>Current earnings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per dollar invested in</td>
<td>$ 0.05</td>
<td>$ 0.10</td>
<td>$ 0.067</td>
</tr>
<tr>
<td>stock</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dubious Reasons for Mergers

The Bootstrap Game

Acquiring Firm has high P/E ratio

Selling firm has low P/E ratio (due to low number of shares)

After merger, acquiring firm has short term EPS rise

Long term, acquirer will have slower than normal EPS growth due to share dilution.
It generates earnings growth not from capital investment or improved profitability, but from purchase of slowly growing firms with low P/E ratios.
Example

- The Muck and Slurry merger has fallen through. But World Enterprises is determined to report earnings per share of $2.67. It therefore acquires the Wheelrim and Axle Company. You are given the following facts:

<table>
<thead>
<tr>
<th></th>
<th>World Enterprises (before merger)</th>
<th>Wheelrim and Axle</th>
<th>Merged Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>$ 2.00</td>
<td>$ 2.50</td>
<td>$ 2.67</td>
</tr>
<tr>
<td>Price per share</td>
<td>$ 40.00</td>
<td>$ 25.00</td>
<td>?</td>
</tr>
<tr>
<td>P/E Ratio</td>
<td>20</td>
<td>10</td>
<td>?</td>
</tr>
<tr>
<td>Number of shares</td>
<td>100,000</td>
<td>200,000</td>
<td>?</td>
</tr>
<tr>
<td>Total earnings</td>
<td>$ 200,000</td>
<td>$ 500,000</td>
<td>?</td>
</tr>
<tr>
<td>Total market value</td>
<td>$ 4,000,000</td>
<td>$ 5,000,000</td>
<td>?</td>
</tr>
</tbody>
</table>

The example illustrates the dubious reasons for mergers, particularly the manipulation of financial ratios to meet earnings targets.
Dubious Reasons for Mergers

Example (continued)

– Once again there are no gains from merging. In exchanging for Wheelrim and Axle shares, World Enterprises issues just enough of its own shares to ensure its $2.67 earnings per share objective.

– a. Complete the above table for the merged firm

– b. How many shares of World Enterprises are exchanged for each share of Wheelrim and Axle?

– c. What is the cost of the merger to World Enterprises?

– d. What is the change in the total market value of the World Enterprises shares that were outstanding before the merger?
Dubious Reasons for Mergers

- Lowering Financing Costs
  - If firms can make fewer, larger security issues by merging, there are genuine savings.
  - After the merger each firm effectively does guarantee the other’s debt; if one part of the business fails, the bondholders can still take their money out of the other part → mutual guarantees make the debt less risk → lower rates
  - Does the lower interest rate mean a net gain to the merger? Not necessarily
Lowering Financing Costs

- Compare the following two situations:
  - *Separate issues*: Firm A & Firm B each make a $50 mil. bond issue
  - *Single issue*: Firms A and B merge, and the new firm AB makes a single $100 mil. bond issue
- Other things being equal, AB would pay a lower interest rate. But it does not make sense for A and B to merge just to get that lower rate b/c AB’s shareholders lose by having to guarantee each other’s debt → No *net* gain
Dubious Reasons for Mergers

➢ Lowering Financing Costs

- One situation where mergers can create value by making debt safer:

- Consider a firm that covets interest tax shields but is reluctant to borrow more b/c of worries about financial distress

- *Merging decreases the probability of financial distress*, other things being equal → If it allows increased borrowing, and increased value from the interest tax shields, there can be *a net gain to the merger*. 
Questions

– Is there an overall economic gain to the merger?
– Do the terms of the merger make the company and its shareholders better off?

\[ PV(AB) > PV(A) + PV(B) \]
Gain and Cost

- There is an economic gain only if the two firms are worth more together than apart.
- The cost of acquiring B is equal to the cash payment minus B’s value as a separate entity.

\[
\text{Gain} = PV_{AB} - (PV_A + PV_B) = \Delta PV_{AB}
\]

\[
\text{Cost} = \text{Cash paid} - PV_B
\]

\[
\text{NPV} = \text{gain} - \text{cost}
\]

\[
= \Delta PV_{AB} - (\text{cash} - PV_B)
\]
Example: Two firms merge creating $25 million in synergies. If A buys B for $65 million, the cost is $15 million.

\[
PV_A = \$200 \\
PV_B = \$50 \\
Gain = \Delta PV_{AB} = +\$25 \\
PV_{AB} = \$275\text{million}
\]

Cost = Cash paid – \(PV_B\)

\[
= 65 – 50 = \$15\text{million}
\]
Example: The NPV to A will be the difference between the gain and the cost.

\[ NPV_A = 25 - 15 = \$10\text{million} \]

\[ NPV_A = \text{wealth with merger} - \text{wealth without merger} \]
\[ = (PV_{AB} - \text{Cash}) - PV_A \]
\[ = (275 - 65) - 200 \]
\[ = \$10\text{million} \]
Economic Gain

Economic Gain  =  PV(increased earnings)

= New cash flows from synergies
  discount rate
More on Estimating Costs

- The cost of a merger is the *premium* that the buyer pays over the seller’s stand-alone value.
- Start w/ the market value
- But bear in mind that if investors *expect* A to acquire B, or if they expect *somebody* to acquire B, *the market value of B may overstate its stand-alone value*

- Market value vs. Intrinsic (true) value

<table>
<thead>
<tr>
<th>Outcome</th>
<th>MV of B’s Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No merger</td>
<td>$PV_B$: Value of B as a separate firm</td>
</tr>
<tr>
<td>2. Merger occurs</td>
<td>$PV_B$ <em>plus</em> some part of the benefits of the merger</td>
</tr>
</tbody>
</table>
Example

- Suppose that just before A and B’s merger announcement we observe the following:

<table>
<thead>
<tr>
<th></th>
<th>Firm A</th>
<th>Firm B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market price per share</td>
<td>$200</td>
<td>$100</td>
</tr>
<tr>
<td>Number of shares</td>
<td>1,000,000</td>
<td>500,000</td>
</tr>
<tr>
<td>MV of firm</td>
<td>$200 mil.</td>
<td>$50 mil.</td>
</tr>
</tbody>
</table>

- Firm A intends to pay $65 million cash for B. If B’s market price reflects only its value as a separate entity, then

\[
Cost = \text{Cash paid} - PV_B
\]

\[
= 65 - 50 = \$15\text{million}
\]
Example

However, suppose that B’s share price has already risen $12 because of rumors of the merger → its intrinsic value is overstated by $12 \times 500,000 = $6 million.

Its true value is only $44 million. Then

\[
Cost = \text{Cash paid} - PV_B
\]

\[
= 65 - 44 = $21\text{million}
\]

Since the merger gain is $25 million, this deal still makes A’s stockholders better off.
Estimating Cost w/ Stock Financing

- Many mergers involve payment wholly or partly in the form of the acquirer’s stock.
- In this case, cost depends on the value of the shares in the new company received by the shareholders of the selling company.
- If the sellers receive \( N \) shares, each worth \( P_{AB} \), the cost is

\[
Cost = N \times P_{AB} - PV_B
\]

- Be sure to use the price per share after the merger announcement and its benefits are appreciated by investors.
Estimating Merger Gains and Costs

Estimating Cost w/ Stock Financing

– Suppose that A offers 325,000 shares instead of $65 million in cash. A’s share price before the deal is announced is $200.

– If B is worth $50 million stand-alone, the cost of the merger appears to be

\[
\text{Apparent cost} = 0.325 \times 200 - 50 = 15 \text{ mil}
\]

– However the apparent cost may not be the true cost!(Why not?)

– We can calculate share prices and MV after the deal.
Estimating Merger Gains and Costs

Estimating Cost w/ Stock Financing

– The new firm will have 1.325 million shares outstanding and will be worth $275 million.
– The new shares price is $275/1.325 = $207.55
– The true cost is

True cost = $0.325 \times $207.55 - $50 = $17.45 \text{ mil}

– This cost can also be calculated by figuring out the gain to B’s shareholders ⇒ they end up w/ 0.325 mil. shares, or 24.5% of the new firm AB. Their gain is

\[ .245 \times $275 - $50 = $17.45 \text{ mil} \]
Estimating Merger Gains and Costs

**Estimating Cost w/ Stock Financing**
- In general, if B’s shareholders are given the fraction \( x \) of combined firms,

\[
\text{Cost} = xPV_{AB} - PV_B
\]

**Cash vs. Stock as Financing Instruments**
- Cash: the cost of the merger is *unaffected by the merger gains*.
- Stock: *the cost depends on the gains* b/c the gains show up in the post-merger share price. Also it *mitigates the effect of overvaluation or undervaluation* of either firm.
Estimating Merger Gains and Costs

Estimating Cost w/ Asymmetric Information

– Suppose A’s managers are more optimistic than outside investors. They may think that A’s shares will really be worth $215 after merger, $7.45 higher than the $207.55 market price,

True cost = \(0.325 \times 215 - 50 = 19.88\) mil

– B’s shareholders would get a “free gift” of $7.45 for every A share they receive – an extra gain of $7.45 \times 0.325 = 2.42, that is $2.42 million.

– Of course, if A’s managers were really this optimistic, they would strongly prefer to finance the merger w/ cash.
Estimating Cost w/ Asymmetric Information

- Financing w/ stock would be favored by **pessimistic** managers who think their company’s shares are **overvalued**.

- “win-win” for A – just issue shares when overvalued, cash otherwise? No, it’s not that easy, b/c B’s shareholders, and outside investors generally, understand what’s going on.

- This asymmetric-information story explains why buying-firms’ share prices generally fall when stock-financed mergers are announced.
Takeover Methods

Tools Used To Acquire Companies

- Proxy Contest
- Leveraged Buy-Out
- Management Buy-Out
- Tender Offer
- Merger
- Acquisition
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
</table>
| June 6, 2003      | Oracle offers cash of $16 a share for PeopleSoft stock, a premium of 6%.
<p>| June 18, 2003     | Oracle increases offer to $19.50 a share.                             |
| February 4, 2004  | Oracle raises offer to $26 a share.                                   |
| February 26, 2004 | Justice Department files suit to block deal. Oracle announces plans to appeal. |
| May 16, 2004      | Oracle reduces offer to $21 a share.                                  |
| September 9, 2004 | Oracle wins appeal in a federal court against Department of Justice antitrust ruling. |
| September 27, 2004| Hearing begins in Delaware court of Oracle’s request to overturn PeopleSoft’s poison pill. |
| November 1, 2004  | Oracle raises offer to $24 a share. Accepted in respect of 61% of PeopleSoft shares. |
| November 23, 2004 | Oracle announces plans to mount a proxy fight by naming four nominees for PeopleSoft’s board. |
| December 13, 2004 | Oracle raises offer to $26.50 a share. Accepted by PeopleSoft’s board. |</p>
<table>
<thead>
<tr>
<th>Preoffer Defenses</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shark-repellent charter amendments:</strong></td>
<td></td>
</tr>
<tr>
<td>Staggered board</td>
<td>The board is classified into three equal groups. Only one group is elected each year. Therefore the bidder cannot gain control of the target immediately.</td>
</tr>
<tr>
<td>Supermajority</td>
<td>A high percentage of shares, typically 80%, is needed to approve a merger.</td>
</tr>
<tr>
<td>Fair price</td>
<td>Mergers are restricted unless a fair price (determined by formula or appraisal) is paid.</td>
</tr>
<tr>
<td>Restricted voting rights</td>
<td>Shareholders who acquire more than a specified proportion of the target have no voting rights unless approved by the target's board.</td>
</tr>
<tr>
<td>Waiting period</td>
<td>Unwelcome acquirers must wait for a specified number of years before they can complete the merger.</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Poison pill</td>
<td>Existing shareholders are issued rights that, if there is a significant purchase of shares by a bidder, can be used to purchase additional stock in the company at a bargain price.</td>
</tr>
<tr>
<td>Poison put</td>
<td>Existing bondholders can demand repayment if there is a change of control as a result of a hostile takeover.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Postoffer Defenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Litigation</td>
<td>Target files suit against bidder for violating antitrust or securities laws.</td>
</tr>
<tr>
<td>Asset restructuring</td>
<td>Target buys assets that bidder does not want or that will create an antitrust problem.</td>
</tr>
<tr>
<td>Liability restructuring</td>
<td>Target issues shares to a friendly third party, increases the number of shareholders, or repurchases shares from existing shareholders at a premium.</td>
</tr>
</tbody>
</table>
Takeover Defenses

- **Poison Pill** – Measure taken by a target firm to avoid acquisition; for example, *the right for existing shareholders to buy additional shares at an attractive price* if a bidder acquires a large holding.

- **White Knight** – *Friendly potential acquirer* sought by a target company threatened by an unwelcome suitor.

- **Golden Parachutes** – *Generous payoffs* if the managers lose their jobs as a result of a takeover.