### International differences in use of financial leverage

#### Factors for the differences in use of financial leverage

<table>
<thead>
<tr>
<th>Factors</th>
<th>Use of total debt</th>
<th>Maturity of debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total debt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Japan, Italy, France: more total debt</td>
<td>Lower</td>
<td>Longer</td>
</tr>
<tr>
<td>- US, UK: less total debt</td>
<td>Lower</td>
<td>N/A</td>
</tr>
<tr>
<td>2. Debt maturity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- North America: longer maturity</td>
<td>Lower</td>
<td>Longer</td>
</tr>
<tr>
<td>- Japan: shorter maturity</td>
<td>Lower</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Emerging market differences</td>
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<td></td>
</tr>
<tr>
<td>- Developed countries: more total debt, longer maturity debt</td>
<td>Lower</td>
<td>Longer</td>
</tr>
<tr>
<td>- Emerging markets: less total debt, shorter maturity debt</td>
<td>Lower</td>
<td>Longer</td>
</tr>
</tbody>
</table>

#### Factors for the differences in use of financial leverage

1. **Institutional and Legal factors**
   - Strong legal system → ↓ agency costs
   - Less information asymmetries → ↑ transparency
   - Favorable tax rate for dividends to interest → ↓ required return on equity
   - Strong legal system → ↓ agency costs
   - Less information asymmetries → ↑ transparency
   - Favorable tax rate for dividends to interest → ↓ required return on equity
2. **Financial markets and banking system factors**
   - Larger capital markets, with more liquidity
   - More reliant on banking system than corporate bond market as source of corporate borrowing
   - More institutional investors
   - Larger capital markets, with more liquidity
   - More reliant on banking system than corporate bond market as source of corporate borrowing
   - More institutional investors
3. **Macroeconomic factors**
   - Higher inflation → ↓ value of fixed interest payment
   - Higher GDP growth rate
   - Higher inflation → ↓ value of fixed interest payment
   - Higher GDP growth rate
### Valuing a target company - Comparable transactions

Step 1: Identify a set of takeover transactions - involve firms in same industry, similar capital structure as the target

Step 2: Calculate various relative value measures based on completed deal prices for sample transactions

Step 3: Calculate mean/median/range for chosen relative value measures; apply those measure to the target company

### Compare between DCF / Comparable company / Comparable transaction analysis

<table>
<thead>
<tr>
<th>Advantages</th>
<th>DCF</th>
<th>Comparable company</th>
<th>Comparable transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to model any changes in target’s CF due to synergy</td>
<td>- Data of comparable companies is easy to access</td>
<td>- No need to estimate separate takeover premium</td>
<td>- Derived directly from recent completed deals, rather than assumptions/estimates about the future</td>
</tr>
<tr>
<td>or change in cost structure</td>
<td>- Assumption that similar assets have similar values is fundamentally sound</td>
<td>- Assume market’s valuation of comparable companies is accurate</td>
<td>- Reduce the risk of lawsuit from target’s shareholders against target’s managers and BOD for mispricing the deal</td>
</tr>
<tr>
<td>Estimate of company value based on forecast of future fundamental condition rather than current data</td>
<td>- Estimates of value are directly from the market, rather than assumptions/estimates about the future</td>
<td>- Only provide estimate of fair stock price. Takeover price must be determined separately</td>
<td>- May not be enough of comparable transactions to develop a reliable set of data to calculate the estimated target value</td>
</tr>
<tr>
<td>Easy to customise</td>
<td>- Hard to take into account the effect of synergy or change in capital structure</td>
<td>- Increase the risk of lawsuit from target’s shareholders against target’s managers and BOD for mispricing the deal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Historical data used to estimate takeover premium may not be timely → not reflect current condition in M&amp;A market</td>
<td>- Hard to take into account the effect of synergy or change in capital structure</td>
<td>- Assume value of past transactions is accurate if past transactions are overpriced / underpriced → carry over to the estimated value of the target</td>
</tr>
<tr>
<td></td>
<td>- Difficult to apply when CF are negative</td>
<td>- Only provide estimate of fair stock price. Takeover price must be determined separately</td>
<td>- May not be enough of comparable transactions to develop a reliable set of data to calculate the estimated target value</td>
</tr>
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<td>- Estimates of CF and earnings are highly subjective to error</td>
<td>- Only provide estimate of fair stock price. Takeover price must be determined separately</td>
<td>- May not be enough of comparable transactions to develop a reliable set of data to calculate the estimated target value</td>
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<td></td>
<td>- Discount rate changes over time, and have large impact on valuation estimate</td>
<td>- Only provide estimate of fair stock price. Takeover price must be determined separately</td>
<td>- May not be enough of comparable transactions to develop a reliable set of data to calculate the estimated target value</td>
</tr>
<tr>
<td></td>
<td>- Majority of target’s estimated value is terminal value, which is highly sensitive to estimates used for constant growth and discount rate → estimation error is a major concern</td>
<td>- Only provide estimate of fair stock price. Takeover price must be determined separately</td>
<td>- May not be enough of comparable transactions to develop a reliable set of data to calculate the estimated target value</td>
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</table>

### Post merger value of acquirer

\[
V_{acq} = V_a + V_f + \text{Synergy} - \text{Cash paid to target}
\]

In which:
- \(V_{acq}\) = post merger value of combined company (Acquirer + Target)
- \(V_a\) = Pre merger value of acquirer
- \(V_f\) = Pre merger value of target

### Gain of the Target

\[
G_{target} = \text{Takeover premium} = P_T - V_f
\]

In which:
- \(P_T\) = Price paid to target
- \(V_f\) = Value of target

### Gain of the Acquirer

\[
G_{acquirer} = \text{Synergy} - \text{Takeover premium} = \text{Synergy} - (P_T - V_f)
\]

### Cash Payment vs. Stock payment

1. Cash offer: Profit of target’s shareholders is capped at takeover premium
2. Stock offer: Profit of target’s shareholders is determined by value of combined firm’s stock

\[
P_T = N \times \text{PPS}_{acq+T}
\]

In which:
- \(P_T\) = Price paid to target
- \(N\) = Number of shares of the target
- \(PPS\) = Post merger price per share of the target

### Post merger studies

1. ST performance studies:
   - Targets gains > 30%
   - Acquirer losses = 1% - 3%
   - Reason 1: High premium received by Target, due to Acquirer suffer from Winner’s curse
   - Reason 2: Managerial hubris → overestimate the synergy and expected benefits of the merger

2. Longer term performance studies:
   - Acquirer tends to underperform their peers
   - Avg. return of acquirer 3 years after a merger > 4%
   - Over 60% acquirer lagging their peer group
   - Reason: due to failure to capture promised synergies

### Characteristics of M&A transactions that create value

1. Strong buyer: Acquirer shows strong performance (i.e.: earnings , stock price growth) in the prior 3 years
2. Low takeover premium
3. Few bidders → Greater acquirer’s future returns
4. Favorable market reaction

### Diversities / Equity carve-out / Spin-offs / Split-offs / Liquidations

1. Diversities: A company selling / liquidating / spinning off a division or subsidiary, mostly to outside buyer
2. Equity carve-out: Create a new, independent legal, with separate management team, by giving an equity interest in a sub to outside shareholders (issued in a public offering)
3. Spin-offs: Create a new, independent legal, with separate management team, by distributing sub’s shares to the parent’s shareholders proportionately → Same shareholders with the Parent company
4. Split-offs: Allow shareholders to receive a new shares of a division of the Parent, in exchange for a portion of their shares in the parent company
5. Liquidations: Break up the firm and sell its assets separately. Mostly associated with bankruptcy

### Common reasons for restructuring

1. Division no longer fits into management’s LT strategy: unable to make profit / no fit with the LT direction of the company
2. Lack of profitability: Division’s return < Firm’s cost of capital
3. Individual parts are worth more than the whole (reverse synergy)
4. Infusion of cash: Parent company experiences financing difficulty → selling a division to raise cash and reduce debt