Acquirers Anonymous: Seven Steps back to Sobriety…

Aswath Damodaran
Stern School of Business, New York University

www.damodaran.com
Acquisitions are great for target companies but not very good news for acquiring companies’ stockholders…
And the long-term follow up is not positive either..

- A stronger test of synergy is to **evaluate whether merged firms improve their performance (profitability and growth)**, relative to their competitors, after takeovers.
  - McKinsey and Co. examined 58 acquisition programs between 1972 and 1983 for evidence on two questions -
    - Did the return on the amount invested in the acquisitions exceed the cost of capital?
    - Did the acquisitions help the parent companies outperform the competition?
  - They concluded that **28 of the 58 programs failed both tests**, and 6 failed at least one test.
  - KPMG in a more recent study of global acquisitions concludes that most mergers (>80%) fail - the merged companies do worse than their peer group.

- **Large number of acquisitions that are reversed within fairly short time periods.** A bout 20.2% of the acquisitions made between 1982 and 1986 were divested by 1988. In studies that have tracked acquisitions for longer time periods (ten years or more) the **divestiture rate of acquisitions rises to almost 50%**.
Growing through acquisitions seems to be a “loser’s game”

- Firms that grow through acquisitions have generally had far more trouble creating value than firms that grow through internal investments.
- In general, acquiring firms tend to
  - Pay too much for target firms
  - Overestimate the value of “synergy” and “control”
  - Have a difficult time delivering the promised benefits
- Worse still, there seems to be very little learning built into the process. The same mistakes are made over and over again, often by the same firms with the same advisors.
- **Conclusion:** There is something structurally wrong with the process for acquisitions which is feeding into the mistakes.
The seven sins in acquisitions...

1. Risk Transference: Attributing acquiring company risk characteristics to the target firm.
2. Debt subsidies: Subsidizing target firm stockholders for the strengths of the acquiring firm.
3. Auto-pilot Control: The “20% control premium” and other myth…
5. Its all relative: Transaction multiples, exit multiples…
6. Verdict first, trial afterwards: Price first, valuation to follow
7. It’s not my fault: Holding no one responsible for delivering results.
<table>
<thead>
<tr>
<th>Test</th>
<th>Passed/Failed</th>
<th>Rationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Risk Transference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Debt subsidies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Control Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Synergy Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Relative Valuation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Valuation bias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Who’s responsible?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lets start with a target firm

The target firm has the following income statement:

- Revenues $100
- Operating Expenses $80
- Taxes $8

Operating Income = $20
After-tax OI = $12

Assume that this firm will generate this operating income forever (with no growth) and that the cost of equity for this firm is 20%. The firm has no debt outstanding. What is the value of this firm?
Test 1: Risk Transference…

- Assume that as an acquiring firm, you are in a much safer business and have a cost of equity of 10%. What is the value of the target firm to you?
Lesson 1: Don’t transfer your risk characteristics to the target firm

- The cost of equity used for an investment should reflect the risk of the investment and not the risk characteristics of the investor who raised the funds.
- Risky businesses cannot become safe just because the buyer of these businesses is in a safe business.
Test 2: Cheap debt?

Assume as an acquirer that you have access to cheap debt (at 4%) and that you plan to fund half the acquisition with debt. How much would you be willing to pay for the target firm?
Lesson 2: Render unto the target firm that which is the target firm’s but not a penny more..

- As an acquiring firm, it is entirely possible that you can borrow much more than the target firm can on its own and at a much lower rate. If you build these characteristics into the valuation of the target firm, you are essentially transferring wealth from your firm’s stockholder to the target firm’s stockholders.

- When valuing a target firm, use a cost of capital that reflects the debt capacity and the cost of debt that would apply to the firm.
Test 3: Control Premiums

- Assume that you are now told that it is conventional to pay a 20% premium for control in acquisitions (backed up by Mergerstat). How much would you be willing to pay for the target firm?

- Would your answer change if I told you that you can run the target firm better and that if you do, you will be able to generate a 30% pre-tax operating margin (rather than the 20% margin that is currently being earned).

- What if the target firm were perfectly run?
**Increase Cash Flows**

- More efficient operations and cost cutting: Higher Margins
- Divest assets that have negative EBIT
- Live off past over-investment
  - Higher Margins
  - Reduce tax rate: moving income to lower tax locales, transfer pricing, risk management

**Revenues**

\[
\text{Operating Margin} = \frac{\text{EBIT}}{\text{Revenue}} - \text{Tax Rate} \times \text{EBIT} \\
\text{EBIT} (1-t) + \text{Depreciation} - \text{Capital Expenditures} - \text{Chg in Working Capital} = \text{FCFF}
\]

**Better inventory management and tighter credit policies**

**Reduce the cost of capital**

- Make your product/service less discretionary
- Reduce Operating leverage
  - Reduce beta
  - Shift interest expenses to higher tax locales
- Match your financing to your assets: Reduce your default risk and cost of debt

**Increase Expected Growth**

- Reinvest more in projects
- Increase operating margins

**Reinvestment Rate**

\[
\text{Return on Capital} = \frac{\text{Expected Growth Rate}}{\text{Reinvestment Rate}}
\]

- Do acquisitions
- Increase capital turnover ratio

**Increase length of growth period**

- Build on existing competitive advantages
- Create new competitive advantages

- Reduce the cost of capital

\[
\text{Cost of Equity} \times \frac{\text{Equity}}{\text{Capital}} + \text{Pre-tax Cost of Debt} \times (1-\text{tax rate}) \times \frac{\text{Debt}}{\text{Capital}}
\]
### Current Cashflow to Firm

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT(1-t)</td>
<td>163</td>
</tr>
<tr>
<td>- Nt CpX</td>
<td>39</td>
</tr>
<tr>
<td>- Chg WC</td>
<td>4</td>
</tr>
<tr>
<td>= FCFF</td>
<td>120</td>
</tr>
<tr>
<td>Reinvestment Rate</td>
<td>43/163=26.46%</td>
</tr>
</tbody>
</table>

#### Expected Growth in EBIT (1-t)

\[
\begin{align*}
\text{Expected Growth} &= 0.2645 \times 0.0406 = 0.0107 \\
&= 1.07%
\end{align*}
\]

#### Reinvestment Rate

- Reinvestment Rate = 43/163 = 26.46%

#### Stable Growth

- g = 3%; Beta = 1.00;
- Cost of capital = 6.76%;
- ROC = 6.76%; Tax rate = 35%;
- Reinvestment Rate = 44.37%

#### Terminal Value

\[
\text{Terminal Value} = \frac{104}{0.0676 - 0.03} = 2714
\]

#### Expected Cashflow

<table>
<thead>
<tr>
<th>Year</th>
<th>EBIT (1-t)</th>
<th>Reinvestment</th>
<th>FCFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$165</td>
<td>$44</td>
<td>$121</td>
</tr>
<tr>
<td>2</td>
<td>$167</td>
<td>$44</td>
<td>$123</td>
</tr>
<tr>
<td>3</td>
<td>$169</td>
<td>$51</td>
<td>$118</td>
</tr>
<tr>
<td>4</td>
<td>$173</td>
<td>$64</td>
<td>$109</td>
</tr>
<tr>
<td>5</td>
<td>$178</td>
<td>$79</td>
<td>$99</td>
</tr>
</tbody>
</table>

#### Discount at Cost of Capital (WACC)

\[
\text{Discount at Cost of Capital (WACC)} = 8.50\% \times (0.486) + 3.97\% \times (0.514) = 6.17\%
\]

#### Cost of Equity

- Riskfree rate = 4.10%

#### Cost of Debt

\[
\text{Cost of Debt} = (4.10\% + 2\%) \times (1 - 0.35) = 3.97\%
\]

#### Risk Premium

- Unlevered Beta for Sectors: 0.80
- Country Equity Prem: 0%

#### Weights

\[
\text{Weights} = E = 48.6\% \quad D = 51.4\%
\]

#### Blockbuster: Status Quo

- Beta = 1.10
- Risk Premium = 4%
- Firm's D/E Ratio: 21.35%
Current Cashflow to Firm

\[
\begin{align*}
\text{EBIT}(1-t) & : 249 \\
- \text{Nt CpX} & : 39 \\
- \text{Chg WC} & : 4 \\
= \text{FCFF} & : 206 \\
\text{Reinvestment Rate} & = 43/249 \\
& = 17.32\%
\end{align*}
\]

Expected Growth in EBIT (1-t)

\[
0.1732 \times 0.0620 = 0.0107 \\
1.07\%
\]

Reinvestment Rate

17.32%

Expected Growth in EBIT (1-t)

\[
\begin{align*}
1 & \quad 2 & \quad 3 & \quad 4 & \quad 5 \\
\text{EBIT (1-t)} & : & 252 & 255 & 258 & 264 & 272 \\
- \text{Reinvestment} & : & 44 & 44 & 59 & 89 & 121 \\
\text{FCFF} & : & 208 & 211 & 200 & 176 & 151
\end{align*}
\]

Expected Growth

\[0.1732 \times 0.0620 = 0.0107 = 1.07\%\]

Stable Growth

\[g = 3\%; \ Beta = 1.00; \ Cost of capital = 6.76\%; \ ROC = 6.76\%; \ Tax rate = 35\%; \ Reinvestment Rate = 44.37\%\]

Terminal Value

\[
\text{Terminal Value} = \frac{156}{(0.0676 - 0.03)} = 4145
\]

Discount at Cost of Capital (WACC)

\[
\text{Discount at Cost of Capital (WACC)} = 8.50\% \times 0.486 + 3.97\% \times 0.514 = 6.17\%
\]

Cost of Equity

8.50%

Cost of Debt

\[4.10\% + 2\% \times (1 - 0.35) = 3.97\%\]

Riskfree Rate

4.10%

Risk Premium

4%

Unlevered Beta for Sectors

0.80

Beta

1.10

Firm’s D/E Ratio

21.35%

Mature risk premium

4%

Country Equity Prem

0%

Value/Share

$12.47

Op. Assets

3,840

Cash:

330

Debt

1847

Equity

2323

Options

0

Return on Capital

6.20%

Term Yr

280

124

156
Lesson 3: Beware of rules of thumb…

- Valuation is cluttered with rules of thumb. After painstakingly valuing a target firm, using your best estimates, you will be often be told that:
  - It is common practice to add arbitrary premiums for brand name, quality of management, control etc…
  - These premiums will be often be backed up by data, studies and services. What they will not reveal is the enormous sampling bias in the studies and the standard errors in the estimates.
  - If you have done your valuation right, those premiums should already be incorporated in your estimated value. Paying a premium will be double counting.
Test 4: Synergy....

- Assume that you are told that the combined firm will be less risky than the two individual firms and that it should have a lower cost of capital (and a higher value). Is this likely?

- Assume now that you are told that there are potential growth and cost savings synergies in the acquisition. Would that increase the value of the target firm?

- Should you pay this as a premium?
The Value of Synergy

Synergy is created when two firms are combined and can be either financial or operating.

**Operating Synergy** accrues to the combined firm as:

- **Strategic Advantages**
  - Higher returns on new investments
  - Higher ROC
  - Higher Growth Rate

- **Economies of Scale**
  - More new Investments
  - Higher Growth Rate
  - More sustainable excess returns
  - Longer Growth Period

- **Cost Savings in current operations**
  - Higher Margin
  - Higher Base-year EBIT

**Financial Synergy**

- **Tax Benefits**
- **Added Debt Capacity**
- **Diversification?**

- **Lower taxes on earnings due to**
  - higher depreciation
  - operating loss carryforwards

- **Higher debt ratio and lower cost of capital**
  - May reduce cost of equity for private or closely held firm
Valuing Synergy

(1) the firms involved in the merger are valued independently, by discounting expected cash flows to each firm at the weighted average cost of capital for that firm.

(2) the value of the combined firm, with no synergy, is obtained by adding the values obtained for each firm in the first step.

(3) The effects of synergy are built into expected growth rates and cashflows, and the combined firm is re-valued with synergy.

Value of Synergy = Value of the combined firm, with synergy - Value of the combined firm, without synergy
### Synergy - Example 1

**Higher growth and cost savings**

<table>
<thead>
<tr>
<th></th>
<th>P&amp;G</th>
<th>Gillette</th>
<th>Piglet: No Synergy</th>
<th>Piglet: Synergy</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Cashflow to Equity</td>
<td>$5,864.74</td>
<td>$1,547.50</td>
<td>$7,412.24</td>
<td>$7,569.73</td>
<td>Annual operating expenses reduced by $250 million</td>
</tr>
<tr>
<td>Growth rate for first 5 years</td>
<td>12%</td>
<td>10%</td>
<td>11.58%</td>
<td>12.50%</td>
<td>Slightly higher growth rate</td>
</tr>
<tr>
<td>Growth rate after five years</td>
<td>4%</td>
<td>4%</td>
<td>4.00%</td>
<td>4.00%</td>
<td></td>
</tr>
<tr>
<td>Beta</td>
<td>0.90</td>
<td>0.80</td>
<td>0.88</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>7.90%</td>
<td>7.50%</td>
<td>7.81%</td>
<td>7.81%</td>
<td>Value of synergy</td>
</tr>
<tr>
<td>Value of Equity</td>
<td>$221,292</td>
<td>$59,878</td>
<td>$281,170</td>
<td>$298,355</td>
<td>$17,185</td>
</tr>
</tbody>
</table>
Synergy: Example 2
Tax Benefits?

Assume that you are Best Buys, the electronics retailer, and that you would like to enter the hardware component of the market. You have been approached by investment bankers for Zenith, which while still a recognized brand name, is on its last legs financially. The firm has net operating losses of $2 billion. If your tax rate is 36%, estimate the tax benefits from this acquisition.

If Best Buys had only $500 million in taxable income, how would you compute the tax benefits?

If the market value of Zenith is $800 million, would you pay this tax benefit as a premium on the market value?
Lesson 4: Don’t pay for buzz words

- Through time, acquirers have always found ways of justifying paying for premiums over estimated value by using buzz words - synergy in the 1980s, strategic considerations in the 1990s and real options in this decade.
- While all of these can have value, the onus should be on those pushing for the acquisitions to show that they do and not on those pushing against them to show that they do not.
Test 5: Comparables and Exit Multiples

- Now assume that you are told that an analysis of other acquisitions reveals that acquirers have been willing to pay 5 times EBIT. Given that your target firm has EBIT of $20 million, would you be willing to pay $100 million for the acquisition?

- What if I estimate the terminal value using an exit multiple of 5 times EBIT?

- As an additional input, your investment banker tells you that the acquisition is accretive. (Your PE ratio is 20 whereas the PE ratio of the target is only 10… Therefore, you will get a jump in earnings per share after the acquisition…)}
Biased samples = Poor results

- Biased samples yield biased results. Basing what you pay on what other acquirers have paid is a recipe for disaster. After all, we know that acquirer, on average, pay too much for acquisitions. By matching their prices, we risk replicating their mistakes.
- Even when we use the pricing metrics of other firms in the sector, we may be basing the prices we pay on firms that are not truly comparable.
- When we use exit multiples, we are assuming that what the market is paying for comparable companies today is what it will continue to pay in the future.
Lesson 5: Don’t be a lemming…

- All too often, acquisitions are justified by using one of the following two arguments:
  - Every one else in your sector is doing acquisitions. You have to do the same to survive.
  - The value of a target firm is based upon what others have paid on acquisitions, which may be much higher than what your estimate of value for the firm is.
- With the right set of comparable firms (selected to back up your story), you can justify almost any price.
- And EPS accretion is a meaningless measure. After all, buying an company with a PE lower than yours will lead mathematically to EPS accretion.
Now assume that you know that the CEO of the acquiring firm really, really wants to do this acquisition and that the investment bankers on both sides have produced fairness opinions that indicate that the firm is worth $100 million. Would you be willing to go along?
Lesson 6: Don’t let egos or investment bankers get the better of common sense…

- If you define your objective in a bidding war as winning the auction at any cost, you will win. But beware the winner’s curse!
- The premiums paid on acquisitions often have nothing to do with synergy, control or strategic considerations (though they may be provided as the reasons). They may just reflect the egos of the CEOs of the acquiring firms.
Test 7: It is not my fault

Assume that you go ahead and complete this merger and that you are right about potential synergies and control value. Will they manifest themselves over the long term?
Lesson 7: For synergy and control values to be monetized, you have to plan and work…

- Realistic plans for delivering synergy and control have to be put in place before the merger is completed. By realistic, we have to mean that the magnitude of the benefits have to be reachable and not pipe dreams and that the time frame should reflect the reality that it takes a while for two organizations to work as one.

- Someone (preferably the person pushing hardest for the merger) should be held to account for delivering the benefits.

- The compensation for investment bankers and others involved in the deal should be tied to how well the deal works rather than for getting the deal done.