Share Buyback Valuation
Case Study: Jackson-Hewitt Tax Service (JTX)
(Part 5)

by

Magnus Erik Hvass Pedersen
Why Is This Case Study Important?

- The value of a share buyback depends on the present value of future earnings for eternity.
- Usually we estimate this value because the actual value can only be known after the company has seized to exist.
- The company in this example made large share buybacks for borrowed money and went bankrupt, so the actual value of those share buybacks can be calculated.
- This case study has important implications in theory and practice.
Value WITHOUT Share Buyback

... is the potential for dividend payouts; that is, the excess cash plus present value of future earnings available for dividend payouts:

\[
v = \text{Excess Cash} + \sum_{t=1}^{\infty} \frac{\text{Earnings}_t}{(1 + d)^t}
\]

\[
V = \frac{v \cdot (1 - \text{TaxDividend})}{\text{Shares}}
\]
Value WITH Share Buyback

A share buyback reduces the cash available for dividends.

... and reduces the number of shares.

\[
W = \frac{(v - \text{Buyback}) \cdot (1 - \text{TaxDividend})}{\text{Shares} \cdot \left(1 - \frac{\text{Buyback}}{\text{MarketCap}}\right)}
\]
Relative Value of Share Buyback

... is the value of a share buyback relative to a dividend payout:

\[ \frac{W}{V} = 1 - \frac{\text{Buyback}}{v} \frac{1}{1 - \frac{\text{Buyback}}{\text{MarketCap}}} \]
### Jackson-Hewitt Tax Service (JTX) – Financial Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>62</td>
<td>76</td>
<td>157</td>
<td>172</td>
<td>206</td>
<td>232</td>
<td>275</td>
<td>293</td>
<td>279</td>
<td>248</td>
<td>214</td>
<td>90</td>
</tr>
<tr>
<td>Net Income</td>
<td>(2)</td>
<td>11</td>
<td>43</td>
<td>41</td>
<td>43</td>
<td>50</td>
<td>58</td>
<td>65</td>
<td>32</td>
<td>19</td>
<td>(272)</td>
<td>(33)</td>
</tr>
<tr>
<td>Free Cash Flow (FCF)</td>
<td>-</td>
<td>(13)</td>
<td>(19)</td>
<td>51</td>
<td>54</td>
<td>106</td>
<td>97</td>
<td>63</td>
<td>3</td>
<td>16</td>
<td>(28)</td>
<td>(78)</td>
</tr>
<tr>
<td>Dividends</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>(8)</td>
<td>(11)</td>
<td>(16)</td>
<td>(21)</td>
<td>(15)</td>
<td>0</td>
</tr>
<tr>
<td>Share Issuance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.4</td>
<td>3</td>
<td>4</td>
<td>12</td>
<td>0.01</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Share Buyback</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>(61)</td>
<td>(142)</td>
<td>(99)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assets</td>
<td>563</td>
<td>575</td>
<td>618</td>
<td>662</td>
<td>726</td>
<td>675</td>
<td>588</td>
<td>574</td>
<td>600</td>
<td>608</td>
<td>346</td>
<td>389</td>
</tr>
<tr>
<td>Equity</td>
<td>518</td>
<td>528</td>
<td>571</td>
<td>612</td>
<td>655</td>
<td>396</td>
<td>388</td>
<td>303</td>
<td>237</td>
<td>244</td>
<td>(25)</td>
<td>(56)</td>
</tr>
<tr>
<td>Debt</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>175</td>
<td>50</td>
<td>127</td>
<td>231</td>
<td>232</td>
<td>274</td>
</tr>
<tr>
<td>Interest Income, Net</td>
<td>2.9</td>
<td>1.8</td>
<td>1.4</td>
<td>0.8</td>
<td>0.3</td>
<td>(5.2)</td>
<td>(6.4)</td>
<td>(8.1)</td>
<td>(12.6)</td>
<td>(12.9)</td>
<td>(19.6)</td>
<td>(32)</td>
</tr>
<tr>
<td>ROA</td>
<td>-</td>
<td>2%</td>
<td>7%</td>
<td>7%</td>
<td>6%</td>
<td>7%</td>
<td>9%</td>
<td>11%</td>
<td>6%</td>
<td>3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ROE</td>
<td>-</td>
<td>2%</td>
<td>8%</td>
<td>7%</td>
<td>7%</td>
<td>8%</td>
<td>15%</td>
<td>17%</td>
<td>11%</td>
<td>8%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Market-Cap, Low</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>623</td>
<td>647</td>
<td>875</td>
<td>323</td>
<td>80</td>
<td>42</td>
<td>0.2</td>
</tr>
<tr>
<td>Market-Cap, High</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>958</td>
<td>1141</td>
<td>1246</td>
<td>1021</td>
<td>508</td>
<td>217</td>
<td>66</td>
</tr>
</tbody>
</table>
Value WITHOUT Share Buyback (JTX, 2006)

Assume FCF could be paid out as dividends. Present value in 2006 is:

\[
v = \frac{FCF_{2006}}{1 + d} + \ldots + \frac{FCF_{2011}}{(1 + d)^5}
\]

\[
= \frac{97}{1 + d} + \frac{63}{(1 + d)^2} + \frac{3}{(1 + d)^3} + \frac{16}{(1 + d)^4} + \frac{-28}{(1 + d)^5} + \frac{-78}{(1 + d)^5}
\]

If risk was same as USA gov. bond then \(d = 5\%\) and \(v = USD\ 85m\).

If ignoring the negative FCF then \(v = USD\ 165m\).
Value WITH Share Buyback (JTX, 2006)

Share buyback net of issuance was USD 58m. Lowest market-cap was USD 647m. Ignore number of shares and dividend tax.

\[ w = \frac{v - \text{Buyback}}{1 - \frac{\text{Buyback}}{\text{MarketCap}}} = \frac{USD\ 165m - USD\ 58m}{1 - \frac{USD\ 58m}{USD\ 647m}} \approx USD\ 118m \]
Per-Share Values (JTX, 2006)

There were about 36m shares outstanding in 2006. Ignore dividend tax.

The per-share value WITHOUT a share buyback was:

\[ V = \frac{v}{\text{Shares}} = \frac{\text{USD 165m}}{36m} \approx \text{USD 4.6} \]

The per-share value WITH a share buyback was:

\[ W = \frac{w}{\text{Shares}} = \frac{\text{USD 118m}}{36m} = \text{USD 3.3} \]

The share-price ranged between USD 18-32 during that year.
Relative Value of Share Buyback (JTX, 2006)

The value of making a share buyback relative to a dividend payout:

\[
\frac{W}{V} = 1 - \frac{\text{Buyback}}{v} = 1 - \frac{\text{USD 58m}}{\text{USD 165m}} = 1 - \frac{\text{USD 58m}}{\text{USD 647m}} \approx 71\%
\]

That is, the share buyback created a loss of about 29% to the shareholders who owned their shares until the company went bankrupt.
Assumptions That Were Made (JTX, 2006)

- All positive FCF from 2006 onwards was paid out as dividends. In fact, only a fraction was paid out so present value (PV) of dividends is smaller.
- The discount rate was 5% so the risk was the same as U.S. government bonds. In fact, risk was much higher and hence PV much lower.
- The share buyback in 2006 was made at the lowest share-price during the year. It probably wasn’t and hence the value destruction was greater.
- But even with all these assumptions the share buyback in 2006 still decreased value to long-term shareholders by 29%. Because these assumptions were very conservative the actual loss was greater.
Value WITHOUT Share Buyback (JTX, 2007)

Ignore negative FCF so present value in 2007 is:

\[ v = \frac{FCF_{2007}}{1 + d} + \frac{FCF_{2008}}{(1 + d)^2} + \frac{FCF_{2009}}{(1 + d)^3} = \frac{63}{1 + d} + \frac{3}{(1 + d)^2} + \frac{16}{(1 + d)^3} \]

For discount rate \( d = 10\% \) the present value is \( v = USD \ 72m \).

During that year the market-cap ranged between USD 875-1246m.
Value WITH Share Buyback (JTX, 2007)

Share buyback net of issuance was USD 138m. Lowest market-cap was USD 857m. Ignore number of shares and dividend tax.

\[
w = \frac{v - \text{Buyback}}{1 - \frac{\text{Buyback}}{\text{MarketCap}}} = \frac{\text{USD 72m} - \text{USD 138m}}{1 - \frac{\text{USD 138m}}{\text{USD 875m}}} \approx \text{USD (78m)}
\]

This is negative because buyback amount is greater than \(v\). Relative value formula is not well-defined – but it was clearly a loss.
Could The Value Destruction Have Been Prevented?

- In 2007, JTX had net income of USD 65m and FCF of USD 63m.
- So earnings yield was 7.4% at the lowest market-cap of USD 875m.
- This was probably less than a long-term investor could earn on the S&P 500 stock-market index.
- So JTX would have to grow its future earnings if the share buyback was to be merely value neutral.
- But the increase in debt also greatly increased the risk of bankruptcy.
- So JTX's debt-funded share buyback was a bet with little or no upside potential but a very large downside risk.
Conclusion

• The market price of a company’s shares does not necessarily equal the intrinsic value to long-term shareholders.
• The intrinsic value of a company to its long-term shareholders can change greatly as a result of share buybacks.
• Buyback of overpriced shares is much more destructive to long-term shareholder value than gains from buyback of underpriced shares.
• Debt-funded share buyback should only be made when there is great certainty that the share price is a bargain – and the debt-level is safe.
Further Reading

Case study is taken from the paper:

- **The Value of Share Buybacks**

 Authored by Magnus Erik Hvass Pedersen.

Available on the internet: