

Share Buyback Valuation

Case Study: Jackson-Hewitt Tax Service (JTX)

(Part 5)

by

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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 ceased 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:

$$v = \textit{Excess Cash} + \sum_{t=1}^{\infty} \frac{\textit{Earnings}_t}{(1+d)^t}$$

$$V = \frac{v \cdot (1 - \textit{TaxDividend})}{\textit{Shares}}$$

Value WITH Share Buyback

A share buyback reduces the cash available for dividends.

... and reduces the number of shares.

$$W = \frac{(v - \textit{Buyback}) \cdot (1 - \textit{TaxDividend})}{\textit{Shares} \cdot \left(1 - \frac{\textit{Buyback}}{\textit{MarketCap}}\right)}$$

Relative Value of Share Buyback

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

$$\frac{W}{V} = \frac{1 - \frac{Buyback}{v}}{1 - \frac{Buyback}{MarketCap}}$$

Jackson-Hewitt Tax Service (JTX) – Financial Data

USD Millions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Revenue	62	76	157	172	206	232	275	293	279	248	214	90
Net Income	(2)	11	43	41	43	50	58	65	32	19	(272)	(33)
Free Cash Flow (FCF)	-	(13)	(19)	51	54	106	97	63	3	16	(28)	(78)
Dividends	-	-	-	-	0	(8)	(11)	(16)	(21)	(15)	0	0
Share Issuance	-	-	-	-	-	0.4	3	4	12	0.01	0	0
Share Buyback	-	-	-	-	-	0	(61)	(142)	(99)	0	0	0
Assets	563	575	618	662	726	675	588	574	600	608	346	389
Equity	518	528	571	612	655	396	388	303	237	244	(25)	(56)
Debt	-	-	-	-	0	175	50	127	231	232	274	362
Interest Income, Net	2.9	1.8	1.4	0.8	0.3	(5.2)	(6.4)	(8.1)	(12.6)	(12.9)	(19.6)	(32)
ROA	-	2%	7%	7%	6%	7%	9%	11%	6%	3%	-	-
ROE	-	2%	8%	7%	7%	8%	15%	17%	11%	8%	-	-
Market-Cap, Low	-	-	-	-	-	623	647	875	323	80	42	0.2
Market-Cap, High	-	-	-	-	-	958	1141	1246	1021	508	217	66

Value WITHOUT Share Buyback (JTX, 2006)

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

$$\begin{aligned}v &= \frac{FCF_{2006}}{1+d} + \dots + \frac{FCF_{2011}}{(1+d)^5} \\ &= \frac{97}{1+d} + \frac{63}{(1+d)^2} + \frac{3}{(1+d)^3} + \frac{16}{(1+d)^4} + \frac{-28}{(1+d)^5} + \frac{-78}{(1+d)^5}\end{aligned}$$

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.

$$w = \frac{v - \text{Buyback}}{1 - \frac{\text{Buyback}}{\text{MarketCap}}} = \frac{\text{USD } 165\text{m} - \text{USD } 58\text{m}}{1 - \frac{\text{USD } 58\text{m}}{\text{USD } 647\text{m}}} \simeq \text{USD } 118\text{m}$$

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:

$$\frac{W}{V} = \frac{1 - \frac{\textit{Buyback}}{v}}{1 - \frac{\textit{Buyback}}{\textit{MarketCap}}} = \frac{1 - \frac{\textit{USD 58m}}{\textit{USD 165m}}}{1 - \frac{\textit{USD 58m}}{\textit{USD 647m}}} \simeq 71\%$$

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.

$$w = \frac{v - \textit{Buyback}}{1 - \frac{\textit{Buyback}}{\textit{MarketCap}}} = \frac{\textit{USD 72m} - \textit{USD 138m}}{1 - \frac{\textit{USD 138m}}{\textit{USD 875m}}} \simeq \textit{USD (78m)}$$

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](#)

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Available on the internet:

www.Hvass-Labs.Org