Increasing Shareholder Value?
A Study of Share Repurchases

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It’s only when the tide goes out that you learn who’s been swimming naked.
— Warren Buffett, 1992 Letter to Shareholders

A crisis can reveal bad behavior and poor management.
Relevance: Use financial crisis to study share repurchases.
The Case of United Rentals

- URI sells/lets industrial/construction equipment (cyclical).
- Look at repurchases versus share price:

> Often claimed: buybacks “increase shareholder value.”

- Here: they look futile.
- Even a 30% buyback (87 MM → 60 MM shares) did little.

1 An otherwise interesting firm...
The Case of United Rentals: Debt

Repurchases versus debt:

- 2007, 2008 buybacks were financed by increasing debt.
- In 2008, debt grew from $2 bn to $3.5 bn.
- 75% increase in debt to buyback 30% of equity.
- Wise move for a cyclical firm?
Introduction Background Theory Analysis Conclusion

The Case of United Rentals: CEO Exposure

Repurchases versus CEO wealth exposed to equity:

- Often claimed: buybacks “increase shareholder value.”
- CEO sells during 2007, 2008 buybacks.
- If URI was a “buy,” why did the CEO sell?
- 2005: FAS 123 allows us to see exposures.
- N.B. No 2006 data due to fraud.
We find evidence that repurchases:

- are a costly way to give money to shareholders;
- tend to be bigger when CEOs more exposed to stock price;
- often do not increase shareholder value;
- may be used to defend against mergers;
- may be used to reduce debtholder value;
- are less likely when firms hold more debt; and, thus,
- are a possible channel for asset stripping.
Traditional Claims About Share Repurchases

- Repurchases often claimed to “increase shareholder value.”
- Later studies (Dittmar and Dittmar (2008)) refute this:
  - Repurchases *increase* with stock price; and,
  - Repurchases *do not* precede/predict higher returns.
- Many studies see dividends as entailing costly commitment.
  - Skipping/changing dividend seen as signal of firm value.
- Repurchases often cast as commitment-free dividends.
  - No commitment: may delay/scrap without later notice;
  - No signal: announcing, canceling are positive/cheap talk;
Market Microstructure

- Market microstructure: much research into trading costs.
- Trading has permanent effects which change prices.
- Trading also incurs costs which do not change prices.
  - “Temporary” impact; effectively transaction fees.
- Microstructure $\Rightarrow$ repurchases $=\text{costly way to send money.}$
Consider a firm with $200 mn extra cash on hand:

- 100 mn shares outstanding,
- $4 bn firm; no debt; ⇒ $40/share,
- Assume marginal tax rate of 20%, \( r_f = 2\% \).

The firm wants to give this $200 mn away. How?

- issue special dividend,
- increase dividend, or
- buy back shares.
Giving Away Money: Choices

- Special dividend of $2/share.
  - Tax arbitrage means ex-div price of $38.40/share.
  - Get $1.60 in cash, after tax/share.
- Increase dividend stream by perpetuity worth $2.
  - Increase dividend by $2/r_f = $0.04; $0.032, after tax.
- Buy back $2/$40 × 100 mn = 5 mn shares.
  - Almgren and Chriss: impact = \# shares × π = $1^2$
  - $1$ capital gain yields $0.80 after tax.
  - This is conservative: omits irrecoverable temporary impact.

\[ 2\pi = 2 \times 10^{-7} \]
## Giving Away Money: The Scorecard

Conservatively, how do these actions compare? ($ millions)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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<tbody>
<tr>
<td>Special Div.</td>
<td>$3840</td>
<td>$160</td>
<td>—</td>
<td>$4000</td>
<td>$38.40</td>
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<tr>
<td>Increase Div.</td>
<td>$3997</td>
<td>$3.2</td>
<td>—</td>
<td>$4000</td>
<td>$39.97</td>
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<td>Buyback Shares</td>
<td>$3895</td>
<td>—</td>
<td>$78</td>
<td>$3973</td>
<td>$41</td>
</tr>
</tbody>
</table>

Is this a good idea?

- No, if you care about investor wealth.
- Yes, if you care about a higher stock price.

**Proposition:**

*In a world with sensible price impact, share repurchases do not increase shareholder value.*
We use the financial crisis to study repurchases.


Filter: only firms which did buybacks and CEO compensation.

Buybacks: 1,812 firms; 2,458 CEOs; 12,287 usable obs.

Variables we focus on here:

- CEO total compensation, holdings of firm equity and options.
- CEO equity wealth fraction
\[ \frac{\text{Exposure}}{\text{Compensation} + \text{Exposure}} \]
- Buyback yield = Fraction of market cap repurchased.
- Entrenchment: BC states\(^4\), change-in-control payments.
- Long-term debt

\(^3\)Similar to options \(\Delta\), Jolls (1998) on options.

\(^4\)As suggested by Bertrand and Mullainathan (2003).
Buybacks by Quarter

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-crisis</th>
<th>In-crisis</th>
<th>Post-crisis</th>
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<tbody>
<tr>
<td>2004</td>
<td>500</td>
<td>600</td>
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<tr>
<td>2005</td>
<td>600</td>
<td>700</td>
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<tr>
<td>2006</td>
<td>700</td>
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<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date

# Firms Repurchasing

Pre-crisis | In-crisis | Post-crisis
Buybacks versus (Lagged) CEO Wealth in Firm

- **Larger buybacks when CEOs have more equity.**
- **Q:** Why the difference in period and overall results?
  - **A:** Different means of equity exposure in different periods.

<table>
<thead>
<tr>
<th>Period</th>
<th>Overall</th>
<th>Pre-Crisis</th>
<th>In-Crisis</th>
<th>Post-Crisis</th>
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<tbody>
<tr>
<td>N</td>
<td>12,287</td>
<td>145</td>
<td>6,339</td>
<td>5,803</td>
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<tr>
<td>Intercept</td>
<td>0.009</td>
<td>0.020</td>
<td>0.013</td>
<td>0.007</td>
</tr>
<tr>
<td>(stderr)</td>
<td>(0.001)</td>
<td>(0.006)</td>
<td>(0.002)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>t-stat</td>
<td>9.7</td>
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<td>8.0</td>
<td>9.1</td>
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<tr>
<td>Eq. Expos.</td>
<td>0.005</td>
<td>-0.011</td>
<td>0.002</td>
<td>0.002</td>
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<tr>
<td>(stderr)</td>
<td>(0.001)</td>
<td>(0.008)</td>
<td>(0.002)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>t-stat</td>
<td>4.3</td>
<td>-1.4</td>
<td>1.2</td>
<td>1.7</td>
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</table>
### (Lagged) CEO Equity Wealth Fraction by Period

<table>
<thead>
<tr>
<th>Period</th>
<th>Pre-Crisis</th>
<th>In-Crisis</th>
<th>Post-Crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N$</td>
<td>145</td>
<td>6,339</td>
<td>5,803</td>
</tr>
<tr>
<td>E(Eq. Expos.)</td>
<td>0.760</td>
<td>0.820</td>
<td>0.753</td>
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<tr>
<td>Std Dev</td>
<td>0.240</td>
<td>0.179</td>
<td>0.208</td>
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</table>

$t$-tests of equity exposure for CEOs who do buybacks:

- Pre-crisis and In-crisis differ ($t = -2.98$)
- Post-crisis and In-crisis differ ($t = -18.95$)
- Pre-crisis and Post-crisis do not differ ($t = -0.37$)

Crisis buyback CEOs differ from “peacetime” buyback CEOs: 8% more wealth (82% vs 76%) is tied to firm stock price.
## Buyback Yield versus Entrenchment

<table>
<thead>
<tr>
<th>N</th>
<th>Intercept</th>
<th>Eq. Expos.</th>
<th>Golden&lt;sup&gt;5&lt;/sup&gt;</th>
<th>BC State&lt;sup&gt;6&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>12,287</td>
<td>0.009</td>
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</tr>
<tr>
<td></td>
<td>(t = 9.7)</td>
<td>4.2</td>
<td>0.9</td>
<td></td>
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<tr>
<td>12,142</td>
<td>0.009</td>
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<td>-0.001</td>
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<tr>
<td></td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.0004)</td>
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</tr>
<tr>
<td></td>
<td>(t = 9.6)</td>
<td>4.4</td>
<td>-2.3</td>
<td></td>
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</tbody>
</table>

Likelihood of share repurchases:

- CEOs w/golden parachutes: slightly more likely.
- CEOs protected from mergers by BC laws: less likely.

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<sup>5</sup>Golden = 1 if CEO paid > 10× total comp when fired.

<sup>6</sup>BC State = 1 if inc. state has business combination laws.
## Buybacks versus Debt

<table>
<thead>
<tr>
<th>N</th>
<th>Intercept</th>
<th>Eq.</th>
<th>Expos.</th>
<th>BC State</th>
<th>Debt/Share</th>
<th>Debt</th>
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<td>12,206</td>
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<td>0.005</td>
<td>-0.001</td>
<td>-8×10⁻⁹</td>
<td>2×10⁻⁹</td>
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Results are consistent and suggest:

- Disciplining power of debt\(^7\) reduces repurchases.
- Results are robust to effects of anti-merger provisions.
- Affirm hypothesis that repurchases tend to hurt debtholders.

\(^7\)Jensen and Meckling (1976).
Results

We find evidence that repurchases:

- are a costly way to give money to shareholders;
- tend to be bigger when CEOs more exposed to stock price;
- often do not increase shareholder value;
- may be used to defend against mergers;
- may be used to reduce debtholder value;
- are less likely when firms hold more debt; and, thus,
- are a possible channel for asset stripping.

Suggestion 1: Limit timing of repurchases and executive sales.
Suggestion 2: Debt covenants should restrict share repurchases.