Do Open-market Share Repurchases Supply or Demand Immediacy?

Discussion

Harjoat S. Bhamra

Imperial College Business School

26 July 2018
Aims

- A market microstructure paper
- What is the impact of open market share repurchases on market immediacy?
Why do we care?

- Market immediacy is the ability or the speed with which transactions can be executed promptly at the prevailing price.

Challenges

- How can we measure immediacy?
- Causality – if stock repurchases are related to a measure of immediacy, how can we show that stock repurchases impact immediacy?
Outline of Paper

- Data: all open-market share repurchase programs executed in the Helsinki Stock Exchange between January 1, 1999 and December 31, 2009.
  - on average 27 programs per year
  - median size of EUR 5.7 million
- Construct a measure for the predicted return from providing immediacy: \( PR_{IMM} \)
  - Main idea: interpret trading profits from contrarian trading strategies as returns from providing liquidity. Returns from providing liquidity correspond with the returns from providing immediacy in Grossman and Miller (1988).
- Regress \( \frac{repurchases}{volume} \) against \( PR_{IMM} \)

\[
\text{repurchases}_{i,t} / \text{volume}_{i,t} = \alpha + \beta PR_{IMM,i,t-1} + \sum_{n=1}^{N} \gamma_n \text{control}_{n,i,t} + \epsilon_{i,t} \quad (1)
\]

- Also against \( PosPR_{IMM} = \max(PR_{IMM}, 0) \) (immediacy provision) and \( NegPR_{IMM} = -\min(PR_{IMM}, 0) \) (immediacy demand)
How is $PR_{IMM}$ calculated?

A stock’s predicted excess return evaluated using past estimates of market level pattern of short-term return reversals and the stock’s past daily excess returns.

\[
R_{5,t} = \alpha_t + \sum_{\tau=0}^{9} \beta_{t-\tau} R_{i,t-\tau} + \beta_{t,C}^\top C_{i,t} + \epsilon_t
\]

Calculate 120 - day moving averages of the coefficients based on cross-sectional regressions (above). Multiply by relevant observation and sum up to create predicted excess return.
Table 2. The pattern of return reversal
This table shows the average coefficients of $\beta_{t-\tau}$, from daily cross-sectional regressions of Equation (1) in which stock’s 5-day future excess returns $R5_t$ are regressed on each of the stock’s past ten days’ excess returns, $R_{t-\tau}$, where $\tau \in \{0, ..., 9\}$, and controls $\ln(\text{Volume})xR_{t,\tau}$, $\ln(\text{Market Capitalization})xR_{t,\tau}$, and $\ln(RP_{10})$. First two controls are constructed by multiplying the past 10-day excess returns with either the stock’s past 10-day (log of) trading volume or the stock’s (log of) market capitalization at day $t$, and $RP_{10}$ is the maximum of the value of repurchases during the past 10 days and 1€. The excess returns are calculated relative to equal-weighted market index. t-statistics based on Fama-Macbeth standard errors are shown next to the coefficients in parentheses. Here ***, ** or * are used to denote figures that are statistically significantly different from zero at 1%, 5% or 10% level.

<table>
<thead>
<tr>
<th></th>
<th>$R5_t$</th>
<th>$t$-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R_{t1}$</td>
<td>-0.247</td>
<td>(-14.58)</td>
</tr>
<tr>
<td>$R_{t2}$</td>
<td>-0.157</td>
<td>(-9.13)</td>
</tr>
<tr>
<td>$R_{t3}$</td>
<td>-0.122</td>
<td>(-7.43)</td>
</tr>
<tr>
<td>$R_{t4}$</td>
<td>-0.095</td>
<td>(-5.79)</td>
</tr>
<tr>
<td>$R_{t5}$</td>
<td>-0.081</td>
<td>(-4.97)</td>
</tr>
<tr>
<td>$R_{t6}$</td>
<td>-0.073</td>
<td>(-4.54)</td>
</tr>
<tr>
<td>$R_{t7}$</td>
<td>-0.066</td>
<td>(-4.07)</td>
</tr>
<tr>
<td>$R_{t8}$</td>
<td>-0.054</td>
<td>(-3.32)</td>
</tr>
<tr>
<td>$R_{t9}$</td>
<td>-0.049</td>
<td>(-3.03)</td>
</tr>
<tr>
<td>$\ln(RP_{10})$</td>
<td>0.115</td>
<td>(3.43)</td>
</tr>
<tr>
<td>$\ln(\text{Volume})xR_{t,9}$</td>
<td>0.017</td>
<td>(21.33)</td>
</tr>
<tr>
<td>$\ln(\text{Market Capitalization})xR_{t,9}$</td>
<td>-0.011</td>
<td>(-9.19)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.001</td>
<td>(-15.46)</td>
</tr>
</tbody>
</table>

Number of daily regressions 2,997
Average number of observations 160
Average $R^2$ 0.209

1 Coefficient multiplied by $10^3$
**Snapshot of Results**

- $\beta$ around 3

\[
\text{repurchases}_{i,t} \quad \text{volume}_{i,t} = \alpha + \beta PR_{IMM,i,t-1} + \sum_{n=1}^{N} \gamma_n \text{control}_{n,i,t} + \epsilon_{i,t}
\]  

- $\beta$ around 10, $PosPR_{IMM}$, immediacy provision
- $\beta$ around 4, $NegPR_{IMM}$, immediacy demand
Measuring immediacy – other ways?

- With more data could you use a theoretical measure from Chacko, Jurek, Stafford (2008)?

$$ p(Q) \approx \sigma \sqrt{\frac{Q}{2\lambda}} $$

(4)  

- Estimate, $\sigma$, volatility of fundamental returns on whole sample
- $Q$ is observed – quantity traded
- $\lambda$ – rate of opposing order flow – can it be observed?
- compute $p(Q)$
How does immediacy vary over time?

- Can you investigate how measures of immediacy (supply and demand) vary over time?
- Covariation with business cycle?
- Covariation with daily realized excess returns?
Summary

- Clean, well executed paper
- Explore alternative measures of immediacy
- Exploit existing measures more fully – links to economic and financial variables