The Transmission of Monetary Policy through Bank Lending: The Floating Rate Channel
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Floating Rate Channel

- Identify new monetary policy transmission channel
- MP effect on outstanding floating rate debt

Mechanism
- firms exposed to interest rate risk via unhedged floating rate debt
- rate hike increases interest obligation on outstanding debt
- w/ fin. frictions: get real effects

Results
- FRC economically significant for financially constrained firms w/ large fraction of unhedged floating rate debt
- channel not effective at ZLB
Data

- Study period 2003-2008
- Match Capital IQ data (10-K filings) on debt types with Compustat & CRSP
- Get information (partially handcollected!!)
  - bank debt (term loans & used credit lines) following Colla-Ippolito-Li-2013
  - floating rate debt from 10-K footnotes
  - interest rate hedging from 10-K footnotes (dummy)
- Focus on bank debt as proxy for floating rate debt
Evidence on floating rate channel

- Stock price falls after rate hike in particular if firms
  - high bank debt/assets & NO hedging of interest rate risk
  - financially constrained
    - age, by years since IPO
    - Hadlock & Pierce 2010
- Rate hike deteriorates firms’ liquidity position
  - coverage ratio (interest exp/(interest exp + cash flows)
  - cash holdings
- Real implications of rate hike
  - lower inventories
  - lower sales growth
  - lower fixed investment
- Does not operate during ZLB period
Discussion

- Aggregate importance of floating rate channel
- Use of bank debt/asset as measure of exposure to floating rate channel
- Why don’t firms hedge interest rate risk
Panel A: Sample Distribution of Debt Types

<table>
<thead>
<tr>
<th>Debt Types</th>
<th>Mean</th>
<th>1st Perc.</th>
<th>5th Perc.</th>
<th>25th Perc.</th>
<th>Median</th>
<th>75th Perc.</th>
<th>95th Perc.</th>
<th>99th Perc.</th>
<th>Obs. with positive usage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial paper</td>
<td>0.009</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.010</td>
<td>0.280</td>
<td>5.24</td>
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<tr>
<td>Drawn credit lines</td>
<td>0.220</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.006</td>
<td>0.345</td>
<td>0.999</td>
<td>1.000</td>
<td>51.39</td>
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<tr>
<td>Term loans</td>
<td>0.212</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.343</td>
<td>0.999</td>
<td>1.000</td>
<td>46.52</td>
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<tr>
<td>Sen. bonds and notes</td>
<td>0.382</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.208</td>
<td>0.806</td>
<td>1.000</td>
<td>1.000</td>
<td>64.65</td>
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<tr>
<td>Sub. bonds and notes</td>
<td>0.098</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.831</td>
<td>1.000</td>
<td>19.62</td>
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<td>Capital leases</td>
<td>0.054</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.012</td>
<td>0.308</td>
<td>1.000</td>
<td>42.98</td>
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<tr>
<td>Other debt</td>
<td>0.025</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>0.118</td>
<td>0.695</td>
<td>28.08</td>
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<tr>
<td>Total adjustment</td>
<td>0.000</td>
<td>−0.029</td>
<td>−0.001</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.006</td>
<td>0.038</td>
<td>10.52</td>
</tr>
</tbody>
</table>

- Ratio of different debt types to total debt
- Source: Colla-Ippolito-Li-2013
Aggregate importance of channel

- $ amount of floating rate bank debt matters
- $ amount of floating rate bank debt relative to total corporate debt
- Bank dependent firm: lion share of loans from banks
  - Fraction of predominantly bank dependent firms
  - how much $ floating bank loans do they hold
  - economic significance in terms of output (sales) and employment
Use of bank debt / asset

- Paper focuses on bank debt/asset as measure for exposure to floating rate channel

- High bank debt/asset firms characteristics
  - large, low M-B, high leverage, high tangibility
  - potentially large fraction of fixed rate debt that hedges against floating rate debt

- Farre-Mensa & Ljungqvist (2015)
  - measure of financial constraints such as HP fail to identify constrained firms
  - instead identify small, young, high growth firms that have no trouble raising external funds
Why don’t firms hedge interest rate risk

- Paper identifies costs: reduction in liquidity position, negative effect on inventory, sales, investment...
- If costs are large, why aren’t firms hedging?
- Sample period characterized by rising interest rates → pay floating rate position particularly costly
- Vickery (2008): (small private firms)
  - small & young firms twice as likely to have fixed rate debt
  - fixed rate debt less prevalent in industries with $\text{Corr}(r,\text{output}) > 0$ (i.e. natural hedge)
- Kirti (2015): (public firms)
  - bank dependent firms: small & risky
  - supply side argument for why bank debt is floating
Conclusion

- Interesting paper that identifies perhaps powerful transmission channel for monetary policy
  - outstanding floating rate debt

- Bank debt mostly floating → predominantly bank dependent borrower exposed to interest rate risk

- Comments
  - Sense for aggregate relevance of channel
  - Reduce focus on bank debt/ asset as measure of exposure to floating rate channel
  - Investigate potential reasons for lack of hedging/ or alternatives to hedging with derivatives
Minor

- Cash flow = EBIT*(1-taxes) + Depreciation - capex - change in NWC
- What about net debt as a measure?
- Age variable measures years since IPO, use Jay Ritter’s dataset for age
- Definition of constrained firms often does not identify constrained firms, see Farre-Mensa & Ljungqvist (2015)
- Conduct placebo tests
- Check out JMP by D. Kirti (2015): similar conclusion with regard to firms’ floating rate debt use, but also digs into the reason why banks offer floating rate loans.
Special sample period

- At times of falling interest rates, paying a floating interest rate wins
- Top 4 banks all entered pay-floating interest rate swaps
- Since 1980s, falling trend in interest rate
- 2003-2008 sample: slight rate increase
New economy firms use less debt

- Since 1980s secular increase in R&D intensive public firms
- R&D firms 55% of Compustat sample and 67% of IPOs
- Large cash-balances & little (or no) leverage
- Debt less suitable to fund uncertain R&D outcome with asymmetric payoff