Does Quantitative Easing Affect Market Liquidity?

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This paper synoptically

Motivation

- Evaluating the effects of unconventional tools has been at the forefront of recent literature.

- So far, the preponderance of papers have focused on:
  - Announcement effects;
  - Signalling channel (typically via expectations);
  - Portfolio balance channel (typically via term premia; supply- vs. reserve-induced);
  - Local supply effects.

- Novelty and focus of the paper: liquidity channel (via liquidity premium)
Findings

Objective: Effect of QE on market liquidity

Strategy:
- Fed’s second QE programme is a natural experiment for studying liquidity effects
- Utilise the stylised facts of TIPS and inflation swap markets
- Identification of liquidity effects: observations outside of the QE programme serve as good controls for the variation associated with other observable measures of market liquidity.

Findings:
- QE can reduce frictions to trading via a liquidity channel and improve market liquidity;
- QE2 affected liquidity premia in TIPS and inflation swaps;
- During the programme the measured liquidity premium averaged roughly 10 bp lower than expected.
Quantifying liquidity premia:

\[ LP_t(\tau) = \hat{IS}_t(\tau) - \hat{BEI}_t(\tau) \]  \hspace{1cm} (1)

\[ = \delta^R_t + \delta^{IS}_t \]  \hspace{1cm} (2)
A few thoughts

TIPS

- TIPS (Treasury Inflation Protected Securities) are securities issued by the US government that offer investors inflation protection.

- The principal is accredited daily based on the CPI-Urban (NSA) index and repaid at maturity subject to a minimum of par, providing deflation protection i.e. embedded deflation floor.

- Semi-annual coupons paid on TIPS are based on the inflation-adjusted principal.

- TIPS provide exposure to real interest rates rather than inflation.

- Break-even trades can isolate the exposure to expected inflation.
A few thoughts

Inflation swaps

- Inflation swaps offer a mechanism to trade inflation over a given time horizon.

- An inflation swap is a bilateral agreement that requires one party (the inflation payer) to pay realised cumulative inflation over the period of the swap in return for receiving a fixed interest rate (the inflation swap rate) from a second party (the inflation receiver).

- The reference price level is the CPI-Urban (NSA) index.
A few thoughts
Liquidity premium measure

- In practice, index-linked bond and swap contracts have indexation lags. This means a contract is referenced to inflation for a period that begins before the date on which the contract is priced and ends before the contract matures.

- The good news is that, in the US, the indexation lag for both TIPS and inflation swaps is the same (3 months).

- However, this measure of liquidity premia would have to be carefully adjusted for other economies.

- For instance, in the UK, Index-Linked Gilts had an indexation lag of 8 (3) months prior to 2005 (post 2005); while inflation swaps have a lag-length of 2 months.

- It would be useful to include a section which clearly defines and contrasts index-linked bonds and swaps and addresses the indexation lag issues that may arise in other economies.
A few thoughts
Beyond liquidity...

- In theory, inflation curves derived from inflation swaps and index-linked bonds should be identical, but in practice there can be differences.

- Aside from liquidity, another cause is likely to be that market factors inhibit investors from arbitraging or hedging fully between inflation swap and index-linked bond markets.

- This might occur because of barriers to arbitrage caused by incomplete markets.

- These differences might be pronounced on some maturities more than others.
Conclusion

- Interesting and stimulating paper.

- Encouraging results.

- Neatly motivated and discussed.

- Important work
  - Given the unconventional nature of these tools it is essential to understand the extent of the effects of such programmes;
  - Useful for policy-makers when designing programmes;
  - Useful for market-makers and investors.