Information Content of Order Flow and Cross-market Portfolio Rebalancing: Evidence for the Chinese Stock, Treasury and Corporate Bond Markets

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Summary

This paper examines market linkages through investigating the information content of order flow for both stocks and bonds. The database we use for the Chinese financial markets covers daily-aggregated tick-by-tick data over a three-year period spanning January 2004 through December 2006 for all stocks, Treasury and corporate bonds on the Shanghai Security Exchange (SHSE), which has more stocks and bonds than the Shenzhen Security Exchange (SZSE). Such data enables us to determine both the relative role of each market in cross-market portfolio rebalancing and its precise features.

We first find that under normal conditions the Treasury bond market serves more for stock investor hedging than the corporate bond market, and, in addition to the stock-bond portfolio rebalancing, portfolio rebalancing between corporate and Treasury bonds is also significant. We find a negative cross-market effect of order flow on returns both between the stock and Treasury bond markets and between the corporate and Treasury bond markets. Namely, a rise in order flow on one market means a fall in returns on another market. As aggregate order flow reveals information on preferences, endowments and the projection of news by market participants (Lyons, 2001; Evans and Lyons, 2002; Underwood, 2009), the negative effects of order flow on returns between markets imply widespread cross-market portfolio rebalancing.

Our second finding implies that when the stock market rises or falls sharply, or when the Treasury bond market is falling, corporate bond order flow also significantly and negatively affects stock returns. With respect to portfolio rebalancing between the stock and bond markets in China, corporate bonds are able to replace Treasury bonds as the "haven" of stock investors, either during extreme stock market conditions or during a fall in the Treasury bond market.

Finally, in line with previous studies on the relationship between liquidity and price discovery, e.g., Chordia and Swaminathan (2000) and Underwood (2009), we find that the within-market information content of order flow differs significantly both between index and non-index stocks and between liquid and illiquid bonds. However, on the Chinese stock market, the order flow for non-index stocks has stronger effects on overall-market returns than that for index stocks. On the bond markets, the order flow for more liquid bonds has higher information content. In particular, off-the-run Treasury bonds in China are more liquid (than on-the-run Treasury bonds), and their order flow thus has higher information content on Treasury bond market movements.