Non-bank financial institutions and the slope of the yield curve

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In this note, we examine how changes in the yield curve slope affect the provision of credit and intermediation services by non-bank financial institutions (NBFIs), including broker-dealers and hedge funds. Although these NBFIs typically do not lend directly to the non-financial sector, they indirectly support the flow of credit by investing in debt securities and extending financing to investors who own such securities.2 Dealers also support market functioning of these securities markets by standing ready to buy and sell them from clients and providing financing for these trades. Like banks, these NBFIs engage in maturity transformation, primarily by investing in or warehousing longer-term securities while financing their positions in short-term funding markets. A flattening of the yield curve might therefore affect their profitability and their willingness and ability to provide credit and support smooth market functioning. However, we find that large dealers' total exposure to different parts of the yield curve is small, likely reflecting the effect of their hedging activity. Moreover, we do not find strong evidence that NBFIs' credit provision, trading activities, or trading profitability are meaningfully affected by changes in the slope of the yield curve or yield curve inversions.

**Broker-dealers and hedge funds engage in maturity transformation.**

**Although they engage in maturity transformation, the total net exposure of large dealers' trading portfolios to the yield curve is small, likely reflecting hedging activities.**

**We do not find a statistically significant relationship between the slope of the yield curve and brokers-dealers' profitability.**

We measure profitability as trading revenue scaled by total assets and regress it on two alternative measures of the yield curve slope – either the 10-year minus 2-year Treasury spread (10y2y) or the 10-year minus 3-month Treasury spread (10y3m). We examine both aggregate trading revenue as well as revenue by asset class (rates, foreign exchange, equity, commodity, and credit). Quarterly data on BHC trading revenue and total assets is from FR-Y9C, and we concentrate on BHCs with more than $3 billion in total assets. In general, the regressions do not show a consistent or statistically significant relationship between trading profitability and yield curve slope (Table 1). Furthermore, we do not find a statistically significant difference in trading revenue during periods of flattening or the inversion of the yield curve. While broker-dealers engage in maturity transformation, these empirical findings suggest that for trading purposes, the slope of the yield curve does not appear to be a significant factor.

**Table 1. Sensitivity of Profitability to the Yield Curve**

**Our analysis of hedge fund returns also shows that hedge funds are not significantly exposed to changes in the yield curve slope.**

Specifically, there is no significant relationship between changes in the 10y3m Treasury spread (Table 2) or the 10y2y spread and aggregate hedge fund returns or returns on major hedge fund strategies.6 Interestingly, hedge fund returns are significantly higher when the yield curve is inverted, especially for relative-value hedge funds, suggesting that these periods are associated with profitable trading and arbitrage opportunities.

**Table 2. Sensitivity of Hedge Fund Returns to the Yield Curve**

**Some prior research finds that changes in the slope of the yield curve affect dealers' willingness to intermediate.**

Adrian and Shin (2008, 2009) find that a steeper yield curve, as measured by the 10y3m Treasury yield spread, is conducive to faster growth in dealers' total secured lending and their balance sheets prior to 2008. The balance sheet growth of broker-dealers, in turn, forecasts real economic activity, especially those components that are sensitive to the supply of credit. Adrian, Estrella, and Shin (2019) argue that the forecasting power of the term spread for real economic activity derives from the balance sheet management of financial intermediaries, including broker-dealers.

**However, our analysis extending that line of research does not find a robust relationship between the term structure of interest rates and dealers' activities in Treasury markets or the size of dealer balance sheets.**

Extending Adrian and Shin (2008), we explore the sensitivity of quarterly changes in dealers' Treasury cash and repo positions to changes in the 10y2y and 10y3m Treasury spreads, controlling for other financial variables. As shown in Table 3, we do not find a statistically significant relationship between changes in Treasury long/short positions, or total Treasury financing by dealers (securities in), and changes in the slope of the yield curve.7 Taking a broader perspective beyond Treasury markets, we do find that total dealer asset growth appear to have a positive and mildly statistically significant sensitivity to changes in the 10y2y spread (Table 4), we do not find such a relationship for the 10y3m spread.8

**Table 3. Sensitivity of Dealer Treasury Financing and Positions to the Yield Curve**

**Table 4. Sensitivity of Total Dealer Assets to the Yield Curve**

**Recent survey evidence also suggests that the terms provided by dealers on a broad range of securities financing transactions are not significantly affected by the slope of the yield curve.**

In response to a set of questions about the effect of hypothetical interest rate scenarios on dealer financing in the March 2022 Senior Credit Officer Opinion Survey (SCOOS), dealers indicated that their price and non-price terms would tighten if short-term interest rates rose, regardless of changes in longer-term interest rates. Nonetheless, the survey indicated that client demand for securities financing may be lower if the yield curve flattens.

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