United States

The Mortgage Analyst

Credit Strategy Research

Peeking into agency MBS trading volumes

We study TRACE MBS trading data and highlight three findings

The Financial Industry Regulatory Authority's (FINRA) TRACE system reports trading data in the agency MBS market. We analyze the TRACE data and highlight three findings that have market implications.

First, issuance drives trading volumes

We use coupon-level issuance and trading data to estimate the sensitivity of trading volumes with respect to MBS issuance. Our estimates suggest that for every 10% increase in gross issuance, trading volumes rise by 3%. Given our forecast of a 30% decline in gross issuance from 2013 to 2014, trading volumes are unlikely to increase significantly from current levels.

Second, investor base shifts may have also played a role

We show that Ginnie Mae MBS trading volumes declined more than Fannie/Freddie MBS and specified pool trading volumes declined less than TBA over the past year. This may be related to Ginnie Mae MBS and TBA pass-throughs having become increasingly concentrated among "buy and hold" investors.

Third, liquidity seems to have deteriorated since "taper tantrum"

We show that the average size of TBA trades has become smaller over the past year and the intra-day price differences have remained elevated since the rates selloff last summer. Both of these observations suggest worsened market liquidity for agency MBS relative to a year ago.

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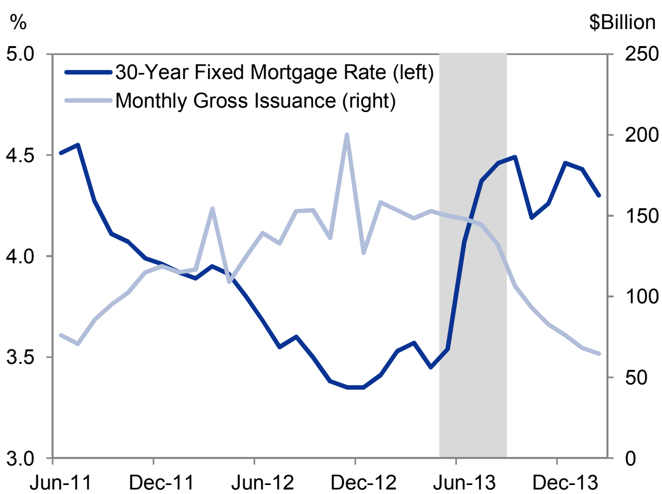
One prominent feature of the US mortgage market over the past year has been higher mortgage rates and falling originations. Compared to May 2013, 30-year fixed mortgage rates are 100bp higher and agency MBS monthly issuance (including Fannie Mae, Freddie Mac and Ginnie Mae) is 60% lower (Exhibit 1). Rising interest rates and falling mortgage originations also coincide with declining MBS trading volumes, according to data reported in the Financial Industry Regulatory Authority's (FINRA) TRACE system (Exhibit 2). As shown in a recent Fed study, the agency MBS market is a highly liquid market with daily trading volumes comparable to the Treasury market.[1] But after the 2013 summer interest rate selloff, the average daily trading volume in the agency MBS market fell from $250 billion to $150 billion, a 40% decline.

In this *Mortgage Analyst*, we analyze the TRACE data and address three questions in particular. First, what is the relationship between MBS issuance volume and MBS trading volume? Second, have different market segments experienced different changes in trading volumes and what do these differences tell us about trends in the agency MBS market? Third, has liquidity deteriorated after the "taper tantrum" last summer?

Issuance drives trading volume

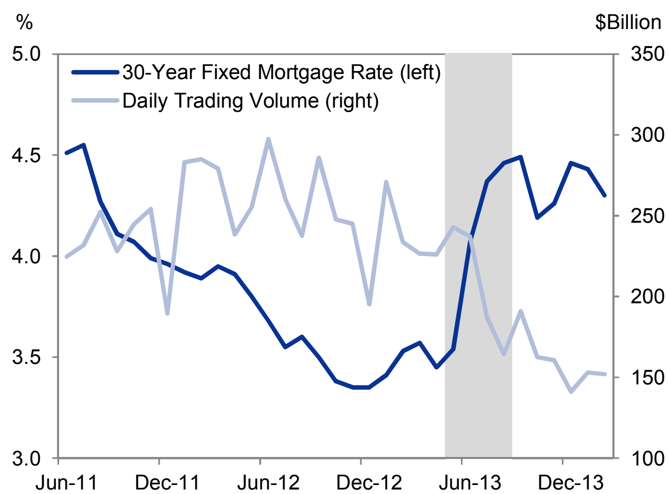
The simultaneous decline in both MBS issuance and trading volumes suggests that issuance may be driving trading volumes. In the corporate bond market, turnover rates on newly issued bonds can be 10 times as high as the turnover rates on bonds that are a few years old (see "Measuring liquidity: bid-ask spreads vs. trading volumes," *The Credit Line*, September 6, 2013). The same relationship may also hold in the agency MBS market.

Exhibit 1: Higher mortgage rates and falling originations characterize the mortgage market post "taper tantrum"
Shaded period refers to the summer selloff in 2013



Source: Freddie Mac, eMBS and Goldman Sachs Global Investment Research.

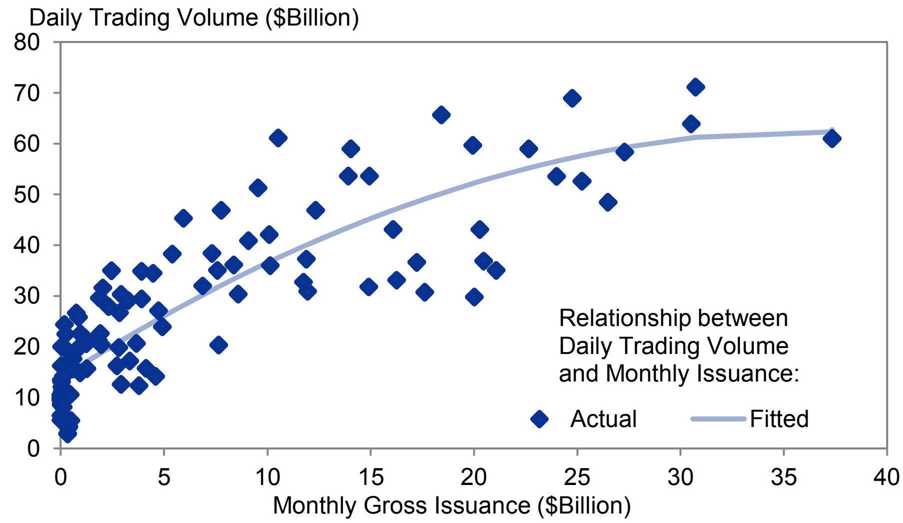
Exhibit 2: Agency MBS daily trading volume also fell sharply after last summer
Shaded period refers to the summer selloff in 2013



Source: Freddie Mac, TRACE and Goldman Sachs Global Investment Research.

[1] See Sean Campbell, Canlin Li, and Jay Im, "Measuring Agency MBS Market Liquidity with Transaction Data," FEDS Notes, January 31, 2014.

Exhibit 3: MBS issuance is positively correlated with daily trading volumes
Each dot represents a Fannie Mae coupon in a given month (e.g. 3.5% coupon in January 2014)



Source: eMBS, TRACE and Goldman Sachs Global Investment Research.

To estimate the relationship between issuance and trading volumes, we focus on Fannie Mae 30-year MBS. In Exhibit 3, we plot the monthly issuance of different coupons (3%, 3.5%, 4%, 4.5% and 5%) in different months against their corresponding average daily trading volumes. For example, in February 2014, Fannie Mae issued $37 billion 4% coupon 30-year MBS and the average daily TBA trading volume of 4% coupon Fannie Mae MBS was $12 billion in February 2014. The scatter plot shown in Exhibit 3 indicates a positive correlation between issuance and trading volumes.

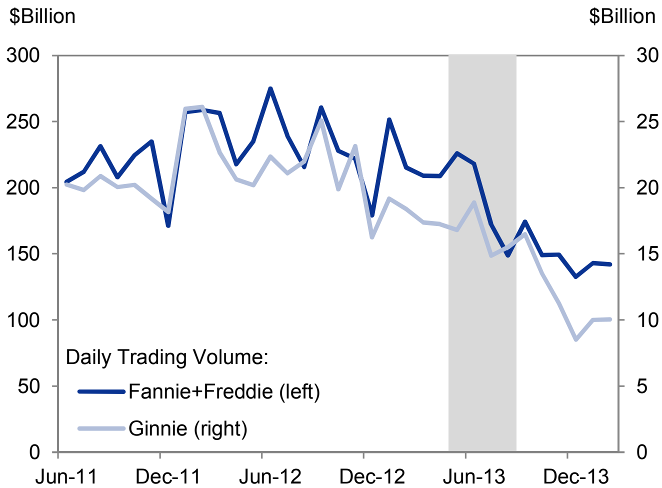
Analysis on the coupon-level data suggests that for every 10% increase in monthly MBS issuance, daily trading volumes increase by 3%. Total agency MBS issuance fell 60% from May 2013 to February 2014. Our estimates imply that trading volumes should have declined 18% if issuance were the only driver of trading volumes. But in reality, daily trading volumes fell 40%, suggesting that other factors are also at play in addition to falling issuance in explaining the declining trading volumes.

Shifts in investor base may have also affected trading volumes

Next, we look at different segments of the agency MBS market separately. Exhibit 4 shows that Ginnie Mae MBS experienced a larger decline in trading volumes over the past year than Fannie/Freddie MBS. This difference is particularly striking considering that Ginnie Mae issuance has fallen less than Fannie/Freddie issuance. For example, Ginnie Mae MBS issuance declined 37% but their trading volumes fell 55% from 2012 to 2014. In contrast, Fannie/Freddie MBS issuance declined 57% but their trading volumes only fell 40% during this period.

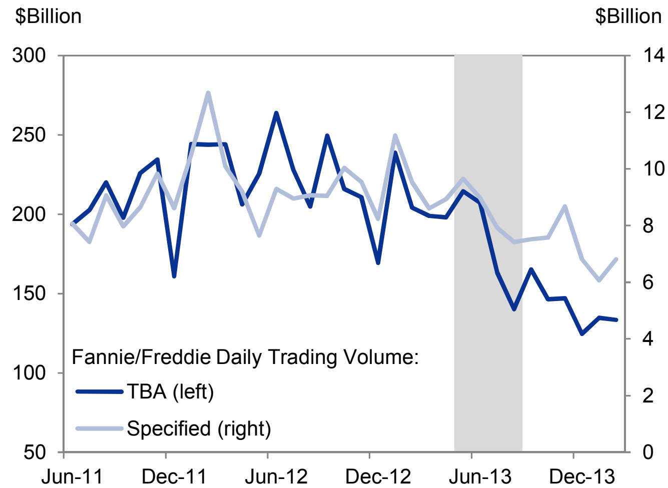
Exhibit 5 shows that specified pools experienced a smaller decline in trading volumes after the rates selloff last summer relative to TBA pass-throughs. For example, the average daily trading volume of specified pools only declined 32% from 2012 to 2014, compared to 41% for TBA trading volumes.

Exhibit 4: Trading volumes fell more for Ginnie Mae MBS than for Fannie Mae and Freddie Mac MBS



Source: TRACE and Goldman Sachs Global Investment Research.

Exhibit 5: Trading volumes fell less for specified pools than for TBA pass-throughs



Source: TRACE and Goldman Sachs Global Investment Research.

What may explain the different trends displayed in Exhibits 4 and 5? The shifts in investor base may have played an important role. In the case of the Ginnie vs. Fannie/Freddie divergence, for example, banks may have increased their holdings of Ginnie Mae MBS due to regulatory considerations (e.g. Liquidity Coverage Ratio tests). To the extent that banks do not trade their MBS holdings as often as do other mortgage investors, trading volumes of Ginnie Mae MBS should decline due to the mix shift in investor base.

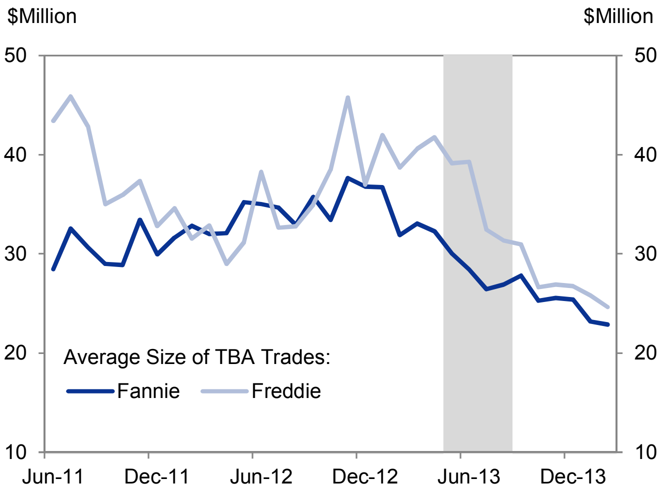
In the case of the TBA vs. specified pool divergence, one contributing factor may be that the Federal Reserve purchases generic TBA exclusively in its QE programs. Because the Fed does not trade its holdings after the initial acquisition, this may have contributed to the diverging trading volume trends for TBA and specified pools as the Fed holdings of MBS continue to grow.

To be sure, there are probably other drivers behind the sharper decline in Ginnie Mae MBS trading volumes and the shallower decline in specified pool trading volumes. But if the changing investor composition in different market segments plays an important role, as we hypothesize above, the divergences shown in Exhibits 4 and 5 may persist in the future.

Liquidity may have deteriorated since “taper tantrum”

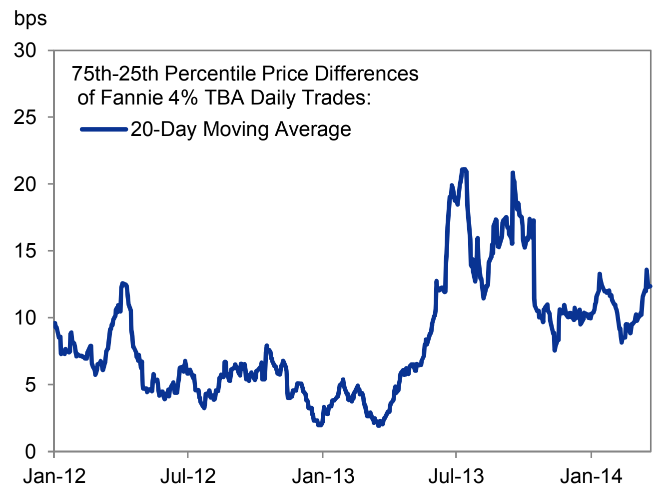
Market liquidity is difficult to assess in general. A single reliable liquidity measure in the agency MBS market is nonexistent. But the TRACE data allows us to infer liquidity conditions indirectly by constructing measures that are related to market liquidity. In Exhibit 6, we plot the average size of TBA trades for Fannie Mae and Freddie Mac 30-year MBS, respectively. For example, on May 1, 2013, the TRACE data reported 5000 Fannie Mae 30-year TBA transactions, totaling $170 billion. We take the ratio of trading volume to number of trades and obtain the average size of trades (i.e. $170 billion/5000=$34 million). Over the past year, the average size of TBA trades has declined notably for both Fannie Mae and Freddie Mac MBS. In 2012, the average size was $35 million. In 2014, the average size has fallen to $25 million.

Exhibit 6: Average trading size has been declining since last summer…



Source: TRACE and Goldman Sachs Global Investment Research.

Exhibit 7: … and intra-day price divergence have stayed elevated



Source: TRACE and Goldman Sachs Global Investment Research.

Besides the average size of trades, we also look at the intra-day price dispersion among TBA transactions. In Exhibit 7, we plot the 75th vs. 25th percentile transaction price differences for Fannie Mae 30-year 4% TBA daily trades. For example, on May 1, 2013, the 25th percentile of the Fannie Mae 30-year 4% TBA trades with a June settlement was 106.9 and the 75th percentile was 107, implying a 9bp price difference (i.e. 107/106.9-1=9bp). In 2012, the average price difference was 7bp. This measure of intra-day price differences spiked during the "taper tantrum" in May-September 2013. Since then, it has declined but remained elevated. The average price difference is 11bp in 2014.

Although not conclusive, the declining average trading size and the elevated intra-day trading price dispersion shown in Exhibits 6 and 7 seem to imply deteriorated market liquidity. This is also consistent with two other pieces of evidence. First, the Primary Dealer Transactions (FR2004) data released by the Federal Reserve show that dealer positions on agency pass-through MBS have declined from $30 billion before last summer to $10 billion currently. A lower dealer inventory may lead to more difficulties in facilitating trades of large sizes. Second, Campbell, Li and Im (2014) construct a bid-ask spread measure for 3%, 3.5%, and 4% Fannie Mae 30-year TBA market. Their measure also suggests that the bid-ask spread widened after the rates selloff last summer. The agency MBS market is still one of the most liquid fixed income markets, but relative to early 2013, liquidity appears to have deteriorated somewhat in the agency MBS market.

Hui Shan

Disclosure Appendix

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