Robert Young
(212) 816-8332
robert.a.young@ssmb.com

Lakhbir Hayre
(212) 816-8327
lakhbir.s.hayre@ssmb.com

Higher Rates and Their Effect on Housing Turnover

Refi Concerns Turn Into Extension Risks

With the number of refinancings fading, investors are now turning their attention to possible extension risk. The central question is: how much effect will higher rates have on turnover/discount speeds?

Rates Up Sharply

Mortgage rates have risen about 125bp in recent months.

Since averaging about 6.90% in the first four months of 1999, the Freddie Mac Survey Rate has climbed to 8.15%, an increase of 125bp. On a $100,000 loan, this translates into a 13% increase (about $86 more) in the cost of the monthly payment.

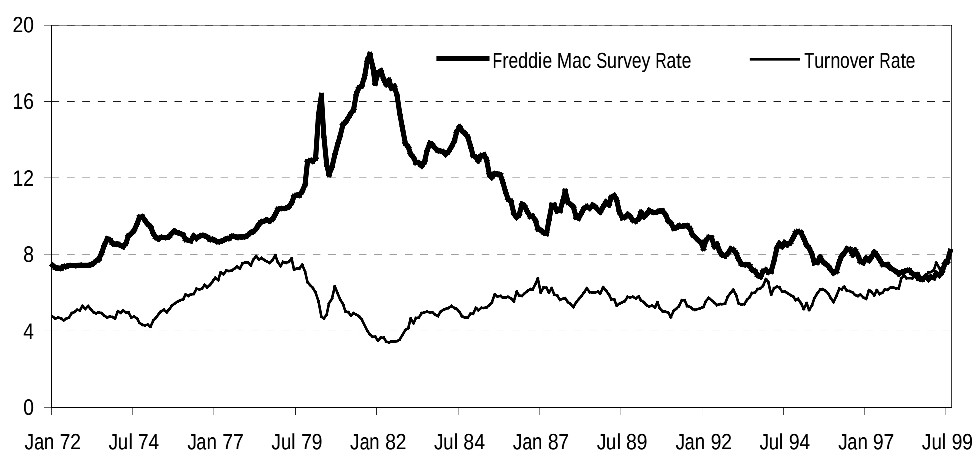
So far, higher rates have not had a big impact. As discussed in last week's *Bond Market Roundup: Strategy*, purchase application activity, while having declined somewhat from peak spring-time levels, still remains relatively strong. In the short run, borrowers are making use of shorter products with lower interest rates, like balloons and ARMs, to help blunt the increase in their monthly payments. (The MBA ARM Application Index has risen sharply from levels earlier this year, for example.)

Historical Data

Although turnover and rates are correlated, interest rates are just one of several factors which impact home sales.

As discussed in the *Anatomy of Prepayments*,[3] there is a close link between discount prepayment speeds and the turnover rate (existing home sales divided by housing stock). Figure 19 shows the turnover rate (using seasonally adjusted existing home sales) versus the Freddie Mac Survey Rate. There is some degree of correlation between turnover and rates. For example, the interest rate backup in 1994 coincides with a decline in the turnover rate from about 6.3% to 5.3%. However, as discussed in the *Anatomy of Prepayments*, interest rates are just one of several factors that affect home sales.

Figure 19. Historical Turnover Rates and Freddie Mac Survey Rate



Sources: Freddie Mac and Salomon Smith Barney.

[3] *Anatomy of Prepayments*, Salomon Smith Barney, Lakhbir Hayre and Arvind Rajan, June 1995.

Figure 20 shows that although higher turnover rates tend to be associated with low mortgage rates, there is a large amount of dispersion in the data. In other words, at a given level of mortgage rates, any one of a wide range of turnover rates is possible, depending on the other important factors that affect home sales.

Figure 20. Turnover Rates versus Freddie Mac Survey Rate

Sources: Freddie Mac and Salomon Smith Barney.

In the late 1970s, home sales reached record levels, despite relatively high mortgage rates.

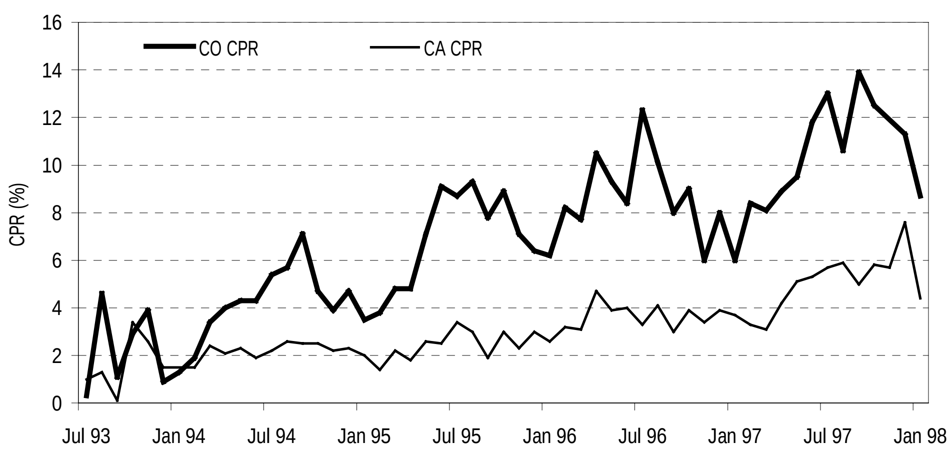
For example, from about 1975 to 1978, rates were relatively stable, hovering around 9%. During this period, the turnover rate increased from the low 4% range to almost 8%. Strong employment growth and consumer confidence (as well as inflation, which offset part of mortgage borrowing costs) pushed home sales to record levels even though mortgage rates were relatively high.

Economy Can Have a Big Impact

Colorado's strong economy resulted in turnover speeds which were much higher than those of California which had a weaker economy.

Figure 21 shows speeds on 1993 6.5s for Colorado, which experienced relatively strong economic growth versus California, where until the past couple of years, the economy was relatively weak. The difference in speeds illustrates the tremendous impact that the economic environment can have on turnover. (In this example, mortgage rates do not play a role in explaining the difference in speeds because similar mortgage rates would be found in each state at any given time.)

Figure 21. Colorado and California — Conventional 1993 6.5s CPRs



Sources: Freddie Mac and Salomon Smith Barney.

How Much Will Turnover Decline?

Given the rise in borrowing costs and that very recent turnover rates are not far from record levels, some drop in the turnover rate is to be expected over the next several months. But, will it be a decline of about 100bp, as occurred with the backup of 1994 when the turnover rate declined from roughly 6.3% to 5.3%, or a much smaller decline of about 50bp as was experienced after rates backed up in 1996 when the turnover rate fell from about 6.2% to 5.7%?

A big drop in turnover rates seems unlikely.

Thus far, the magnitude of the backup has been on a scale much closer to the 1996 increase in rates than the huge backup of 1994. In addition, the economy is stronger, consumer confidence has increased, and home appreciation is higher. And the stock market, which consumers have been increasingly depending on as a source of savings, remains relatively strong. If these positive housing market indicators persist, it seems unlikely that we will see a drop of much more than 50bp in turnover rates.

Prepayment Effect of Higher Rates — Lock-In and Assumability

Although higher rates do translate into higher borrowing costs for all purchasers, the exact magnitude of the effect on any given issue depends on the WAC of the issue. Assuming the WAC is less than current mortgage rates, the difference between the two is approximately the financial disincentive that borrowers of loans backing the issue have when considering moving. (In other words, it roughly measures the increased costs of giving up a low-rate mortgage and taking out a new higher-rate mortgage.) However, recently strong home price appreciation could reduce the "lock-in" effect if borrowers perceive that gains in the value of their homes will offset increased borrowing costs.

Assumability of Ginnie Mae loans has decreased in importance.

Furthermore, turnover prepayments for Ginnie Mae discounts are affected by the assumability option of FHA/VA loans. But, as discussed in *Ginnie Mae Prepayment Behavior*,[4] the importance of assumptions has declined because of increased costs associated with exercising this option. In addition, recent strong home price appreciation — which makes it more likely that an existing mortgage would be too small for a home purchaser — also makes assumptions less of a factor in determining discount Ginnie Mae speeds. (In 1997, Ginnie Mae 6s originated in 1993 had a one-year CPR of 5.2% while Conventional 6s of 1993 prepaid at 5.9% CPR. After the higher 6.69% WAC of the Conventional 6s is taken into account, the Ginnie Mae 6s prepaid only slightly slower than the Conventional 6s.

Conclusion

As discussed last week, a modest slowdown in turnover prepayment speeds owing to higher mortgage rates seems most likely given current conditions. In other words, unless mortgage rates increase substantially from current levels, the risk of substantial extension for mortgage securities is low.

[4] *Ginnie Mae Prepayment Behavior*, Salomon Smith Barney, Lakhbir Hayre and Sharad Chaudhary, September 1997.