Cash-Out Refinances and Estimated Appreciation Rates

With the purchase-only index's appreciation rate lagging the appreciation for the usual HPI by more than two percentage points, the question arises: "What is the source of the difference?" As will be discussed in this Highlights section, the answer apparently is related to the increasing proportion of mortgages that are "cash-out" refinances.

The mortgages used in the construction of the HPI can be classified into three groups: mortgages for home purchases ("purchase mortgages"), refinance mortgages where the loan rate or term is changed ("rate-term" refinances), and mortgages where the borrower extracts equity from the home ("cash-out" refinances). For purchase mortgages, the home valuations tend to be the actual purchase price. For refinance mortgages, the home values associated with the mortgages are from house price appraisals.

The valuations associated with the three different types of mortgages may systematically differ. Valuations derived from refinance appraisals are constructed under different circumstances than those surrounding purchase prices; appraisers operate under specific types of pressures and may employ different "comparable" properties in estimating value than were (implicitly) used in the formation of a purchase price. Similarly, appraisals conducted for "rate-term" refinances can in fact look different from appraisals for "cash-out" refinances.[1]

An obvious source of the valuation differences stems from the possibility that the homes with the different types of mortgages differ in material ways. For example, homes with "cash-out" appraisals may be houses that have appreciated the most. Valuations for "cash-out" appraisals may thus appear higher than others merely because they signal a select group of homes.

If the composition of mortgage types in the HPI modeling sample (the "matched pair" data) varies over time, these systematic differences can affect the house price trends reflected in the HPI. Over the last year, the representation of mortgage types in OFHEO's sample has changed significantly and thus may be responsible for the divergence in the appreciation rates shown for the purchase-only and usual HPI. Between the first quarter of 2005 and the first quarter of 2006, the proportion of cash-out refinances grew from approximately 43.3 percent to 50.0 percent of the OFHEO sample. The proportion of "rate-term" refinance mortgages fell from 31.2 percent to 17.3 percent of the sample.

Given these significant compositional changes, the relevant question then becomes: "Is the difference between the usual HPI and the purchase-only HPI primarily related to the decline in rate-term refinances or does it stem from the increase in the popularity of cash-out refinances?" Such a determination can be made by constructing a third house price index—one that employs the usual HPI data but extracts cash-out refinances.

[1] For example, valuations from "Rate-term" refinances may rely on less current data than "cash-out" refinances or more frequently employ value estimates from automated valuation systems (AVMs).

A comparison of this “HPI-Cashout” series against the purchase-only index then is illuminating; if the two series closely resemble one another, then the rate-term refinances are not primary causes of the divergence between the usual HPI and the purchase-only HPI. An empirical evaluation of the data finds that the two series are in fact quite similar. The four quarter appreciation for the “HPI-Cashout” series is approximately 9.83 percent for the 2005Q1 – 2006Q1 period, just under the 10.04 percent appreciation for the purchase-only series.

The cash-out refinancings thus seem to be driving higher appreciation rates for the HPI relative to the purchase-only index. Figure 1 illustrates the strong connection by analyzing differences at the Census Division level.

Although the proportion of loans that were cash-out refinancings grew in every Census Division over the last year, the increases varied considerably in magnitude. For example, the proportion of mortgages that were cash-out refinances increased by over ten percentage points in the South Atlantic Division, but by only half a percentage point in the West South Central Division. For each division, Figure 1 plots the growth in the proportion of cash-out loans against the difference between the HPI growth rate and the purchase-only growth rate. If valuations from cash-out refinances indeed are causing greater growth rates for the usual HPI vis-à-vis the purchase-only series, then a positive relationship should appear in the graph.

As is quite clear in the figure, in areas where the cash-out refinancing has grown the most, the divergence between the HPI appreciation rate and the purchase-only rate is the greatest. For instance, the South Atlantic Census Division experienced the most significant growth in the proportion cash-out refinances between the first quarter of 2005 and the first quarter of 2006. At the same time, its HPI appreciation rate exceeded the purchase-only appreciation rate by nearly five percentage points. By contrast, the gap between the two appreciation rates was extremely small (actually negative) in the West South Central Census Division, where there was almost no growth in the prevalence of cash-out refinances.

In conclusion, the empirical evidence suggests that the growing prevalence of cash-out refinances over the last year has had the effect of increasing measured appreciation rates for the HPI. Homes with cash-out refinances likely are disproportionately those that have experienced the most appreciation.[2] Thus the HPI dataset, which includes appraisals used for cash-out refinances, may have relatively more rapidly appreciating houses than the purchase-only index.

[2] High appreciation rates will give owners greater equity from which cash can be extracted.

Figure 1: The Difference Between the HPI and Purchase-Only Appreciation Rates and the Growing Popularity of Cash-Out Refinances

First Quarter 2006, by Census Division