

Highlights

Exploring Negative Revisions in the Monthly HPI

Summary

Since the introduction of the monthly HPI in early 2008, index value revisions have tended to be negative. The price change reported in a given month has tended to decline (become more negative in most cases) when index values are revised in the subsequent month. Given that home prices have generally fallen over the last few years, such revisions have been expected: as new transactions data become available for estimating a given month's index, the new data tend to be skewed toward the latter part of the month. When prices are falling, late-in-the-month transactions will tend to be at lower prices and thus the inclusion of such data tends to depress price estimates.

As prices have flattened over the latest year, however, the negative revisions have generally continued. The reason behind the persistent negative revisions is not clear, but this Highlights article discusses interesting evidence related to distressed sales activity. Data suggest that those transactions that become available after the initial index release (i.e., the data that produce index revisions) may contain a larger share of distressed sales than the transactions that are initially available for index estimation.

Background

Each month, FHFA receives new HPI data submissions from the Enterprises. The submissions include property sales prices as well as other mortgage data for loans originated and acquired by the Enterprises in the latest months, as well as in prior periods extending back to the 1970s. Because the Enterprises purchase loans on a rolling basis and often many weeks after loan origination, it may take several months for a recently-originated mortgage to appear in the HPI data sample.

All historical HPI values are revised with each new release, but the relative amount of new data for the recent period tends to be much more significant because of the lag.¹ The *first-time* revision in a given month's index value can be particularly large because a substantial amount of data enters the Enterprise data systems just shortly after the initial index estimate is released. For example, when the October 2011 HPI value was revised for the first time, approximately 50 percent more October loan originations were available in the sample than were available at the time of first estimation.

¹ For a detailed discussion of revisions, see Weiher, Jesse, "Revisions to FHFA's House Price Index in the Recent National House Price Boom and Bust," FHFA Research Paper, February 2010, available at: <http://www.fhfa.gov/webfiles/15394/HousePriceCyclesandHPIRevisions2310.pdf>.

Notably, when new data become available after an initial release, those new observations tend to have loan origination dates skewed toward the latter part of the month. When the October 2011 index value was revised for the first time, for example, the “new” October loans had average loan origination dates centered around October 21st. By contrast, the October loans used in the initial estimation of the October index had an origination dates centered around October 16th.²

As has been discussed in prior research, the fact that subsequent revisions tend to incorporate transaction data from late in the month has a systematic impact on revisions. In strong housing markets when prices are rising rapidly, the transactions that occur later in the month will tend to have higher prices. Thus, when new data become available and revisions are made, the inclusion of the new, late-in-the-month data will tend to increase estimated rates of price growth. Similarly, in declining markets, newly-arriving transactions from late-in-the-month will tend to evidence more price weakness and thus will generally produce negative revisions.

Revision Patterns

Since the monthly HPI was introduced in February 2008, home prices in the U.S. have been generally falling and thus it has been of little surprise that revisions in the monthly HPI typically have been negative. Figure 1 shows the first-month revisions in the estimated U.S. monthly rates of change over the last four years. For November 2011, the value shown is -0.3 percent, which is the difference between this release’s estimate for the November monthly change (+0.7 percent) and the initial estimate that was released on January 25nd (+1.0 percent). As is reported in the graph, the average first-time revision over all months extending back to December 2007 is -0.3 percentage points. In other words, the initial monthly estimated price change has tended to be revised downward by slightly more than $\frac{1}{4}$ of a percentage point at the time of first revision.

While home prices over the latest year have leveled off somewhat, Figure 1 indicates that the negative revisions have generally continued. This suggests that additional factors beyond the declining-markets explanation have caused the negative revisions. Given the relatively large number of distressed sales that are occurring in the marketplace and the substantial price discounts for such sales, one obvious question arises: “Could patterns in distressed sales activity or data availability for such sales be causing the revisions?” Prices for distressed sales are demonstrably lower than for non-distressed transactions³ and thus, if distressed sales tend to enter the HPI estimation data sample with a greater lag than other sales, that could cause the negative revisions.

² The revisions issue aside, as a general matter, real estate transactions activity tends to be more significant in the latter half of each month.

³ Consistent with other reported evidence, analysis of a small sample of known distressed sales in the HPI data sample clearly shows significant negative errors (i.e., larger price declines than would otherwise be expected) for homes sold in distress.

Testing this hypothesis is not easy because the HPI data sample does not flag situations where the seller was in distress. The mortgage records that are used for estimating the HPI report all purchase-money mortgages purchased by the Enterprises in the same way; no flags are included, for example, indicating cases where the seller was a bank liquidating its REO or where the seller was engaging in a short sale. While filings data from county recorder offices and other sources might be used to flag such sales,⁴ those data are not currently available to FHFA.

Fortunately, using available data from the Enterprises, FHFA can identify a subset of distressed sales. In particular, situations can be identified where the buyer has purchased an REO property owned by Fannie Mae or Freddie Mac. In other words, while Enterprise-financed purchases of REO held by banks and short sales are not identifiable, cases can be flagged where the buyer obtains Enterprise-financing to buy Enterprise REO. Over the latest year, these cases (hereafter, “EFER” —Enterprise-Financed Enterprise-REO) accounted for roughly 5-15 percent of the purchase-money mortgages used in HPI estimation.

In evaluating first-time revisions in the HPI rate of growth and trying to determine the role (if any) of distressed sales, the relevant issue is whether new data introduced after initial index estimation tend to include a larger proportion of distressed sales. One way of investigating the matter is to determine whether the share of EFER sales is relatively large in the “new” data that become available after the initial index estimation.

Consider, for example, the November 2011 HPI. When that November value was first estimated in January, the monthly price change for the U.S. was estimated to be +1.0 percent. With this release, additional data have been used to update the November figure to be +0.7 percent (i.e., a -0.3 percentage point revision has been made). The question in this context is whether the transaction data for November that have become available since January’s production include a larger share of EFER sales.

As reported in Figure 2, the “new” data for November in fact include a relatively large share of EFER sales. When the November 2011 index was first estimated, EFER sales accounted for roughly 6.8 percent of the data sample.⁵ The November-originated mortgages that have become available since January, by contrast, include roughly 9 percent EFER sales.

Figure 2 shows the relative intensity of EFER sales in preceding months. The graph clearly shows that, as new data become available for index estimation, the new transactions tend to have a greater share of EFER sales. Based on the sampling of index releases extending back

⁴ In 2009 FHFA used licensed data on Notice of Default filings to identify distressed sales and assess their impact on the FHFA HPI. See, Leventis, Andrew, “the Impact of Distressed Sales on Repeat-Transactions House Price Index,” FHFA Research Paper, May 2009 (available at: http://www.fhfa.gov/webfiles/2916/researchpaper_distress%5b1%5d.pdf).

⁵ The reported shares are calculated using the transaction pairs employed for index estimation. Transaction pairs, which reflect the change a given home’s value over a specific time frame, are identified where the second transaction occurred in November 2011. Among those pairs, 6.8 percent had a November transaction that was an EFER sale.

to April 2011, first-time revisions have generally incorporated transactions data having two or three percentage points more EFER sales than the initial sample had.

While the two or three percent point growth on the surface may seem small, given that REO sales may occur at discounts of 10 percent or more relative to prices for other properties, this increase can have a material impact on index estimates. Also, the graph at least suggests the possibility that *other distressed sales* may enter the data sample with a lag. If Enterprise-financed purchases of other distressed properties (e.g., bank REOs, short sales) also enter the data sample with a lag, that lag would tend to produce negative index revisions.

Conclusion

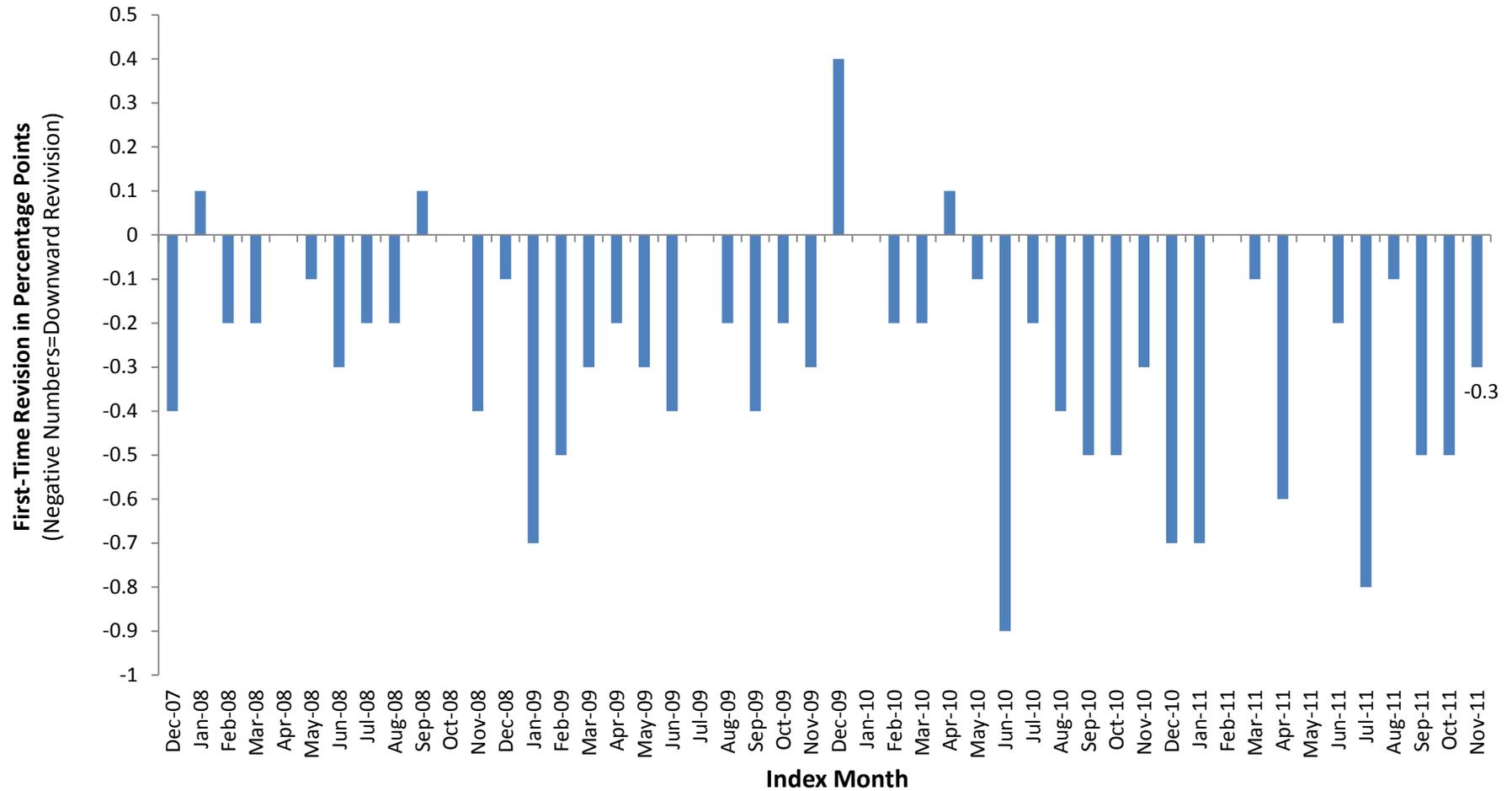
A very large share of Enterprise-financed purchases of distressed properties likely involve bank REOs and short sales—i.e., situations where distress cannot be clearly identified. Accordingly, the results shown in Figure 2 should be viewed as being merely suggestive. A more extensive analysis might find that, once all distressed sales are accounted for, the relative distress-intensity of new data is not significantly different than in the initial data samples. If such is the case, the cause of the negative revisions would, of course, remain unexplained.

Why EFER sales tend to enter the Enterprises' data systems with a slightly greater delay than other mortgages is a subject for further review.

Figure 1: First-Time Revisions in Estimated U.S. Monthly Price Change (Seasonally Adjusted)

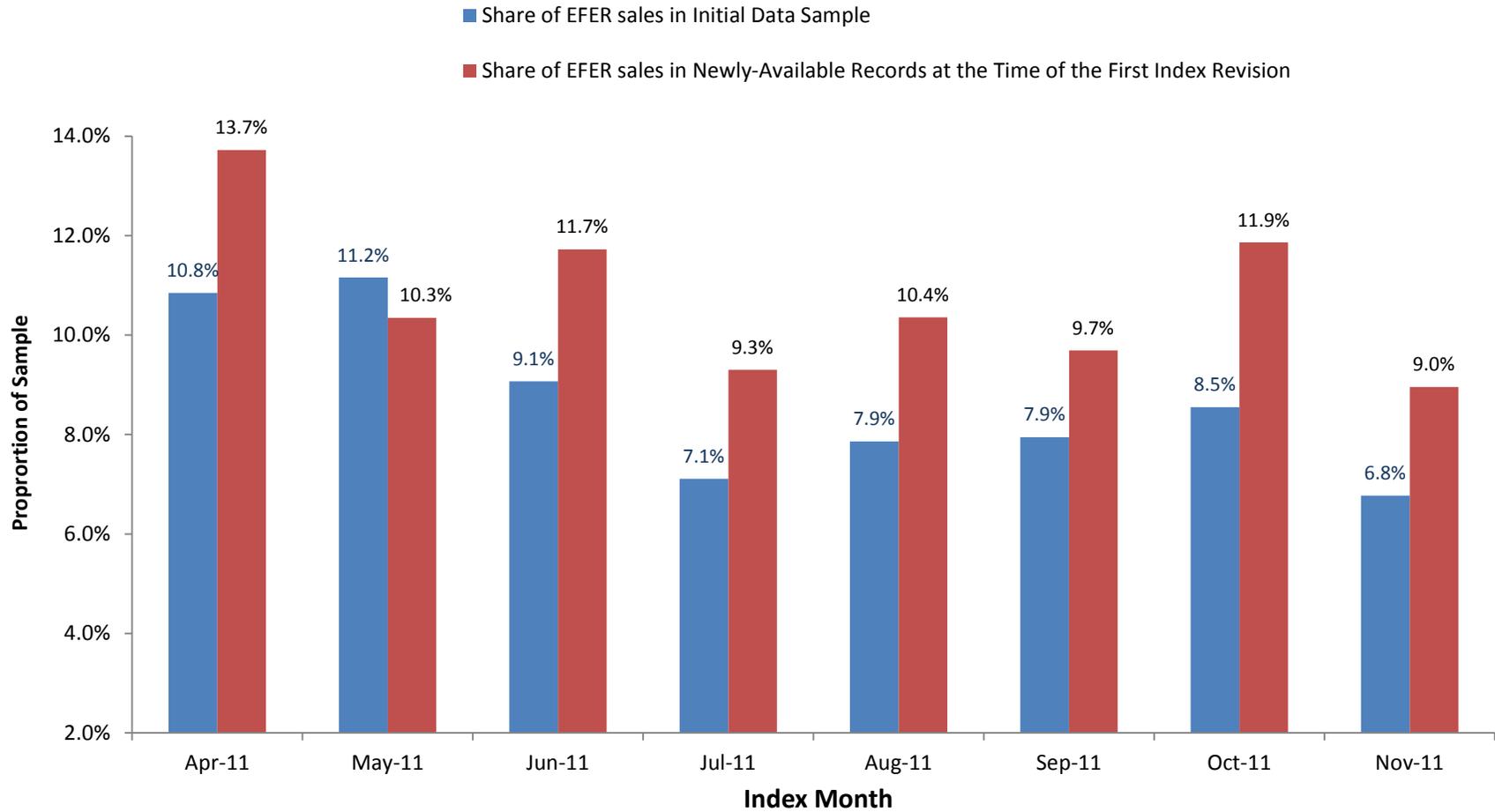
Revisions Since the Introduction of the Monthly Index in Early 2008

Average First-Time Revision in Monthly Appreciation Rate = - 0.3 Percentage Points



Source: OFHEO/FHFA HPI Releases and Enterprise HPI Data Submissions.

Figure 2: Enterprise Distressed Sales as a Share of HPI Estimation Sample
 Enterprise-Financed Enterprise REO (EFER) Sales as a Share of HPI Data Sample*



Note: As discussed in the text, other types of distressed sales are in the HPI data sample, but are not readily identifiable as "distressed."

Source: Enterprise HPI Data Submissions and Enterprise Property-Level REO Disposition Data.