

What Trends Exist in Regional Housing Market Data?

By Renee Courtois Haltom and Pierre-Daniel G. Sarte

While analysts have devoted much attention to housing market performance at the national, state, and even local level, far less attention has been paid to housing markets at the regional level. We investigate how regional vacancies, population, net migration, and other demographic variables have affected regional housing activity over several recent business cycles.

Considerable attention has been given to the performance of the national housing market since the recent boom and decline. In addition, even casual onlookers have become familiar with the housing market stories of several states: Many know that California, Florida, and Nevada had large housing booms, for example, and that largely industrial states like Michigan and Ohio joined them in the housing downturn.

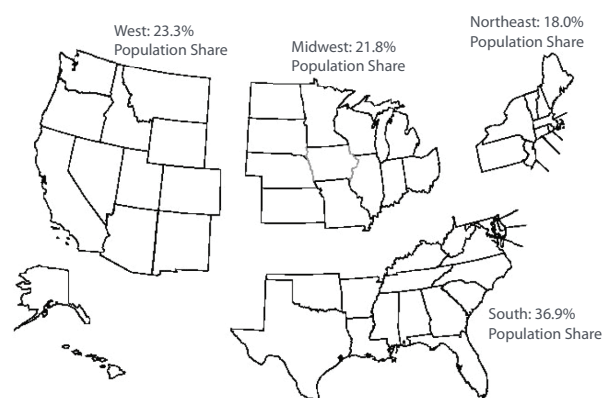
Less attention has been paid to housing market performance at the regional level, that is, the four regions of the nation as defined by the Census: the Northeast, Midwest, South, and West. This is potentially important. For example, some trends at the state level may be cancelled out when looking at region-level data. In addition, aggregate data could mask trends that exist at the regional level. We exploit this gap by analyzing housing data—in particular, new housing starts and related series—at the Census region level.

An additional benefit of the region-level approach is that these data are more abundant than heavily disaggregated data. Data for the nine Census divisions and for the 50 states extend only to 1996. But regional data on housing starts are available starting in the early 1970s, which allows for analysis over several recent business and housing cycles.

A Look at Regional Housing Data

Figure 1 shows a map of the four U.S. regions defined by the Census. According to this delineation, the Northeast, Midwest, and West regions have roughly comparable population shares. In contrast, the South represents a considerably larger share of the U.S. population at around 37 percent. All else equal, therefore, the South is likely to account for the largest fraction of, and the most variation in, the U.S. housing stock, while the densely populated Northeast may be expected to show less extreme variation.

Figure 1

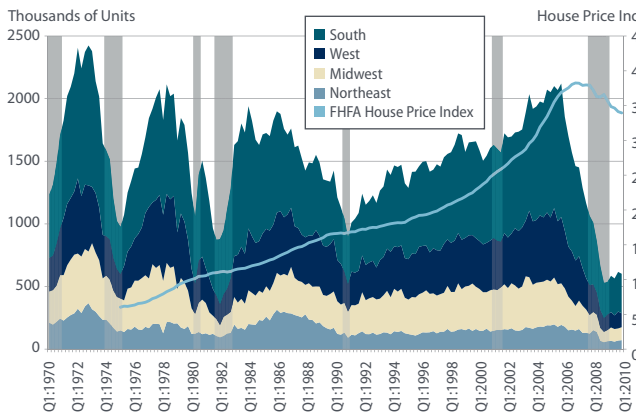


One common measure of housing market activity is housing starts, or the quantity of new homes on which construction “breaks ground” each month (measured in thousands of units, at a seasonally

adjusted annual rate or “SAAR”). Housing starts are a good gauge of homebuilders’ sentiment toward future housing demand and therefore are a forward-looking indicator of housing market activity. Starts also are a forward-looking indicator of economic activity more generally since factors that would cause home builders to expect coming demand for homes—such as favorable job and income prospects—are also likely to portend strengthening economic conditions overall.

Figure 2 illustrates housing starts data, along with the Federal Housing Finance Agency national House Price Index. Several observations stand out. Not surprisingly, the recent absolute decline in starts was driven largely by the South, as was the run-up that started in the early 1990s. At their peak aggregate housing starts were still less than in the boom of the early 1970s, and near the rate of the late 1980s boom. We revisit this issue later.

Figure 2: Regional Housing Starts and National House Prices

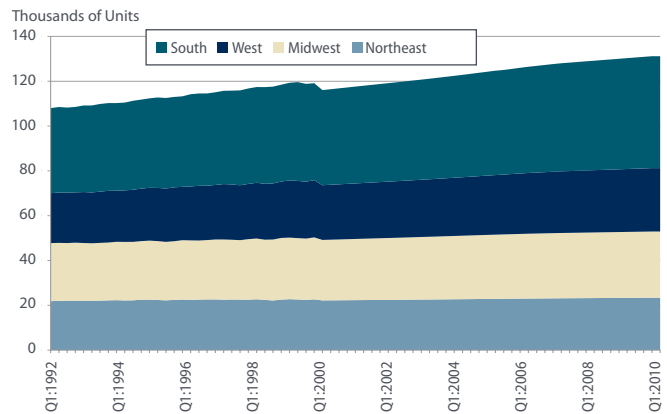


Sources: U.S. Census Bureau, Federal Housing Finance Agency
 Note: Housing stats are quarterly data seasonally adjusted at an annual rate, here and in all subsequent figures. House price index series starts in 1975. Gray bars denote recessions.

Finally, note that the recent housing cycle differs from the previous two: The run-up in starts was longer and more gradual, while the decline was steeper and deeper. It is also noticeable that the rise in housing starts that began in the early 1990s was steady in each region relative to national house price appreciation. The latter became increasingly more pronounced following the 2001 recession up until 2007.

The total housing stock is displayed in Figure 3. The total housing stock is a function of new housing starts and depreciation of existing homes. There are more than 131 million homes in the United States today. Interestingly, the recent housing boom did not greatly affect trend growth in the total housing stock; the boom is not even discernable in Figure 3. Nor was each region’s share of the total housing stock largely affected by the boom. The explanation for both phenomena is that housing starts are a relatively small component of the total housing stock. For example, in the region with the largest number of housing starts—the South, at 315,000 SAAR in the second quarter of 2010—that measure amounted to just one half of one percent of its housing stock. Still, arguments which contend an inefficient accumulation of capital in the late 1990s and early millennium, in the form of “too many” houses being built, are not visible in these data. Alternatively, an inefficient buildup could have manifested in larger, not more, homes

Figure 3: Regional Housing Stock



Sources: U.S. Census Bureau
 Note: Regional housing stock data available on a quarterly basis starting in 1992. The noticeable break in 2000 reflects a change in measurement methodology.

being built. However, a look at annual Census data on the average and median square footage of new homes also does not reveal an obvious deviation from trend in recent years (data not displayed here).

More broadly, the total U.S. housing stock has increased very steadily since 1970, with the South accounting for a large portion of this increase since at least 1992. By contrast, the Northeast housing stock

has remained remarkably constant. In other words, housing starts in that region historically just make up for the loss in housing stock through depreciation and other forces.

What Drives Regional Trends in Housing Activity?

We are interested in the behavior of factors that might affect new housing demand. Specifically, we continue our approach of analysis at the regional level to investigate whether there are regional trends that would be hidden in aggregate data of housing activity.

Home vacancies should be one determinant of housing starts, as they affect the extent to which overall housing demand can be absorbed by existing homes rather than new ones. Homeowner vacancy rates are defined by the Census as vacant year-round housing units for sale divided by the sum of owner-occupied housing units, vacant year-round housing units sold but awaiting occupancy, and vacant-year round housing units for sale.

Vacancy rates are as high as they have ever been. Even declines in the last two years yield levels that far exceed any previous values, except in the concentrated Northeast, where the elevation in vacancy rates is relatively muted. Regional vacancy rates move considerably up or down outside of recessions and, more generally, the link between vacancy rates and the business cycle is not immediately apparent.

Nationally, the vacancy rates bear a reasonably strong, negative correlation with housing starts (the correlation coefficient is -0.38), as expected. Intuitively, this reflects that high vacancies are likely to exert downward pressure on existing home prices, and that may transfer some demand for new homes into demand for existing homes.

But must this inverse relationship always hold? In principle, there is no reason aggregate vacancy rates can't be high at the same time that aggregate housing starts are on the rise. Migration between regions is one reason. Suppose there are two regions of the nation: One with poor economic prospects—low employment and high vacancy rates, for example—

and a second with better economic prospects, like high employment and low vacancy rates. Residents of the first region may relocate to the second region in search of employment opportunities, but, since the latter's vacancy rate is low, will need new homes there. This could contribute to an increase in housing starts in the second region. But suppose the first region is much larger than the second, such that its (high) vacancy rate provides greater weight to the aggregate vacancy rate for the nation. In this situation, housing starts could rise at the same time as vacancy rates.

Vacancy rates are often cited as a forward-looking indicator of housing market activity. However, this simple example shows that it is possible for aggregate data to mask shifts across regions, as well as disparities between regions in housing market health. Therefore, vacancies could, at times, be an imperfect indicator of future housing activity.

Demographic Shifts and Regional Housing Demand

The previous point makes population flows between regions a variable of interest. A pickup in the rate at which people move to a region could exacerbate demand for both existing homes (the supply of which includes, but is not limited to, vacancies) and the demand for new homes (represented by housing starts).

Unfortunately, there are no data on population flows between regions at a high enough frequency to be useful for our purposes. The Census measures state-to-state migration each decade, and produces associated estimates each year, and the Internal Revenue Service measures migration annually, but only dating back to 1989. Thus, we use some imperfect assumptions to construct a higher-frequency measure of migration between regions.

We assume changes in regional employment reflect either common shocks that affect all regions, or net migration between regions. Put differently, we assume that employment changes in a given region that are unrelated to net migration reflect an aggregate shock. We further assume that the effect on that region is proportional to its size in terms of its share of total employment.

Using these assumptions and some simple arithmetic, it follows that we can compute net migration into a given region as equal to the change in regional employment, minus the change in total employment scaled by that region's share of total employment.

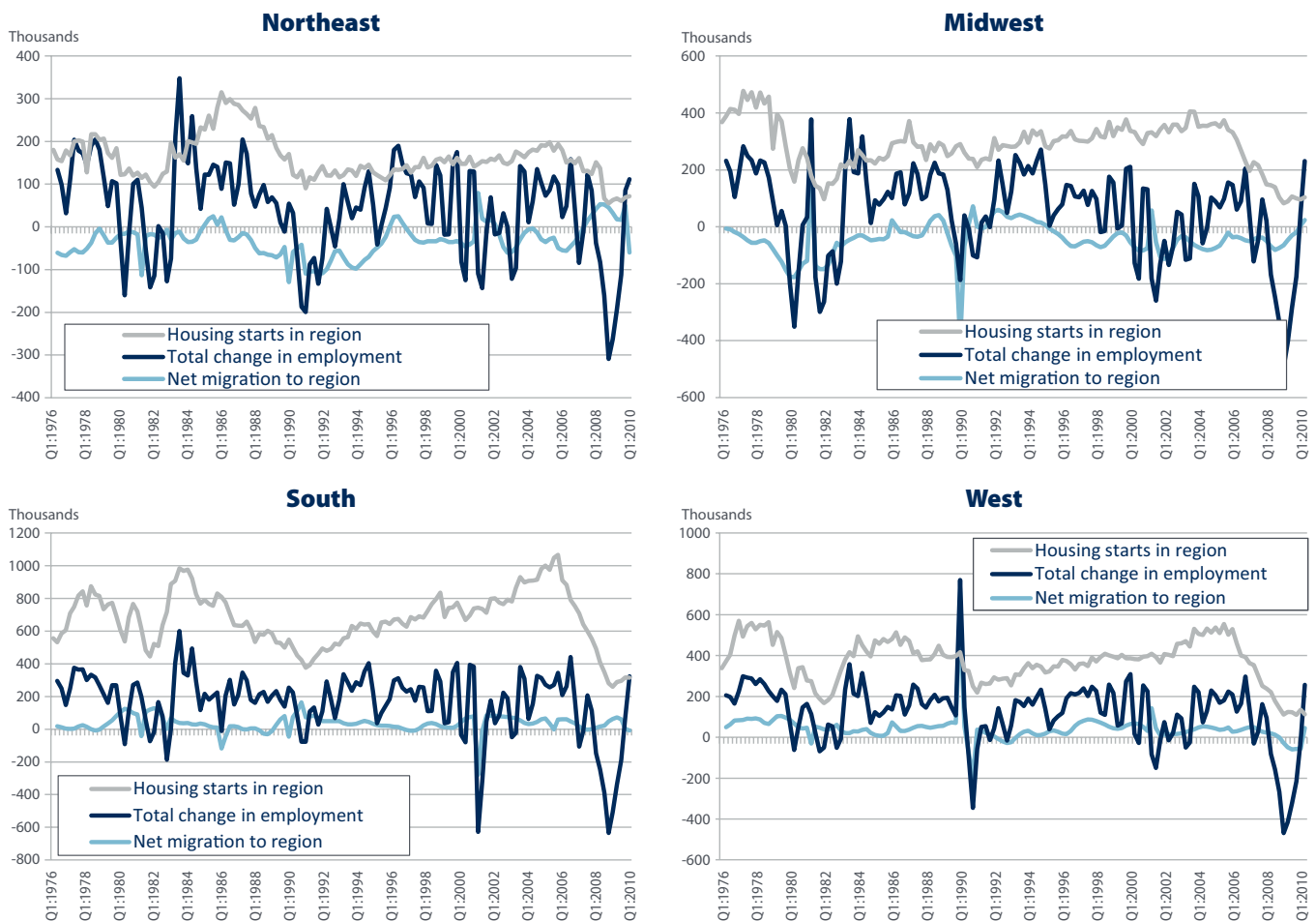
This provides a measure of the extent to which a region was gaining population from other regions in a given period. While this may not be a perfect measure of these flows, we hope they provide a reasonable proxy of a trend for which we otherwise have no data. Figure 4 presents the results from these calculations, along with the total change in employment and housing starts for each region.

Some interesting observations stand out. First, net regional migration generally is a small fraction

of changes in regional employment. This suggests that there are generally not enough people moving between regions on net to generate large increases in new housing starts. Second, even if the volume of net migration were large, historically one does not observe a strong correlation between housing starts and net migration. The correlation is stronger in the West (at 0.33) in the sense that periods of relatively large net migration changes generally are associated with a corresponding change in housing starts. But the correlation is small in the other regions—virtually nonexistent in the Northeast and Midwest, and actually negative in the South.

Above we posited a story in which there are large population shifts across regions that cause regional spikes in housing starts. For this story to be true, we

Figure 4: Breakdown of Employment Changes—Net migration, employment flows and housing starts by region



Note: Net migration calculated by authors as described in text using data from the Bureau of Labor Statistics. Employment data from the Bureau of Labor Statistics. Housing starts data from U.S. Census Bureau.

would have to observe both net regional migration that is sizeable enough to produce new housing starts, and a reasonably strong correlation between migration and housing starts. Neither seem to be borne out in the data used here.

Separately, the calculations suggest that over a long horizon the South and West have generally benefited from positive net migration, historically from the Northeast and Midwest. This is consistent with conventional wisdom, supported by annual Census data. That our data seem to corroborate those trends provides some indication that our constructed measure is a reasonable proxy of regional net migration. Finally, it is noteworthy that net migration into the West region began to reverse in 2007 by our measure, only to pick up again in recent quarters.

Finally, to the extent that housing demand is driven by a growing population, this trend could provide a long-term source of demand for the housing market. To what extent was this true in recent years at the regional level? In Figure 5 we interpolate annual population data for each region and then normalize regional housing starts by the measure.

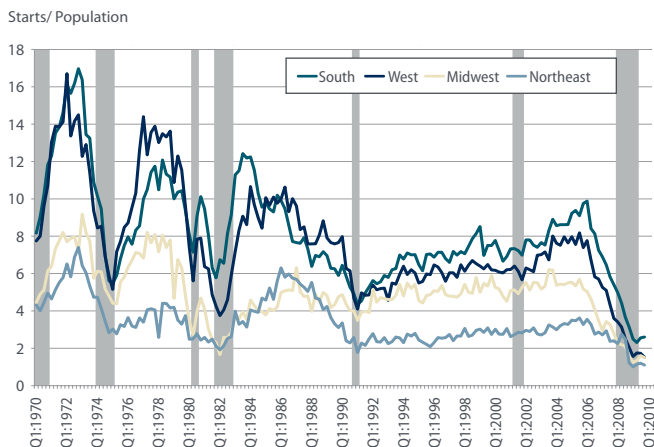
After this adjustment the recent boom and bust in starts doesn't look as severe. Indeed, the previous two housing run-ups here look much larger. In other

words, some of the recent run-up in housing starts seems to have been driven by population growth. On the whole, however, because regional population is a slow-moving variable, the broad patterns seen in Figure 2 are still present.

It also matters how the population is distributed across households. The smaller the average household size in terms of members, the more homes a given population would require. Indeed, households began to shrink rapidly in the late 1960s and early 1970s as baby boomers started to reach adulthood and live independently. Thus, it is reasonable to expect that this trend explains at least part of the housing boom in the 1970s. The average household has continued to shrink since then, though at a slower rate. Thus, even if the population stayed constant, and there were no depreciation of existing homes, housing demand would continue to grow over time.

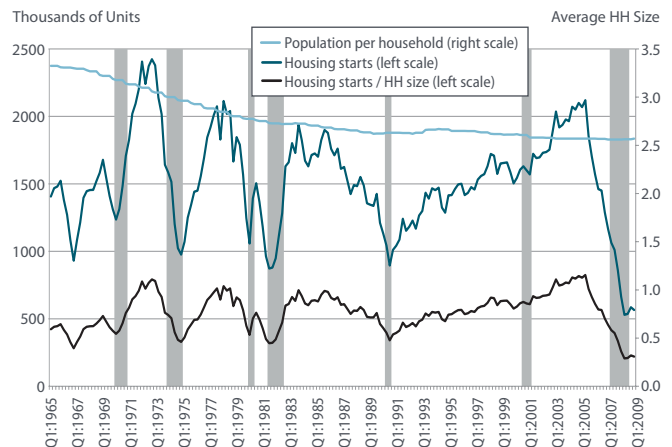
To account for differences in household size across time, Figure 6 normalizes aggregate housing starts by the average household size, and also shows the absolute number of housing starts and average household size. By the normalized starts measure (the black line), the recent boom in housing starts exceeds that of the 1970s, although it remains relatively similar in magnitude to earlier booms.

Figure 5: Regional Housing Starts Normalized by Regional Population



Source: Authors' calculations using U.S. Census Bureau data

Figure 6: Housing Starts Normalized by Average Household (HH) Size



Source: Authors' calculations using U.S. Census Bureau data

Conclusion

There are a wide variety of factors that are believed to affect the demand for new houses, and that have been discussed at length by many observers of the recent housing boom and decline. Among them are financial variables (interest rates, the availability of mortgages), business cycles (including changes in employment), and demographic variables (including shifts in population or household size). In this *Economic Brief* we focus on those variables that can be delineated by Census region and explore how they might affect housing starts at the regional level.

Several insights emerge. At a moderate level of disaggregation—more granular than at the national level, but less granular than at the state level—there are differences in housing market activity across regions. Vacancy rates have historically been strongly and negatively correlated with housing starts at the national level, but in theory this need not be true if there are large population shifts between regions. Still, using recent experience as a guide, net migration flows are unlikely to play a large role in housing starts at the regional and, therefore, national level, because migration flows seem both relatively small and uncorrelated with housing starts. Finally, normalizing housing starts by demographic variables makes the recent boom appear not as stark, implying that at least some of the recent boom was driven by demographic shifts. ■

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