

# New and Existing Sales

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Monthly data on new home sales from the Census Bureau and data on existing home sales from the National Association of Realtors often provide conflicting signals about housing demand. To some extent the disparate movements of the two series reflect divergent trends in demand between newly built homes and existing homes, but to a large extent the differences reflect differences in the definition of sales, measurement problems, and the effect of changes in the geographic mix of demands.

The new homes sales data measure the number of sales contracts, many of which occur before construction begins. Thus the sale may not be closed for six months or more after the sales contract is written, although the lag is usually shorter than that. Sales contracts may fall through, but neither cancellations nor replacement sales (new sales contracts on homes where sales contracts had previously been cancelled) are measured.

Existing home sales data are based on a mixture of sales contracts and closings. The national and regional data are calculated from reports provided by local sources. About 40 percent of the reports are based on sales contracts and 60 percent are based on closings. For existing homes, the typical lag between sales contract and closing is two months. Largely because of the inclusion of data on closings, movements in the existing home data series tend to lag behind movements in new home sales.

The correlation table (Table 1) shows the tendency of new homes sales to lead existing home sales. The correlation coefficient between

changes in national existing home sales and changes in national new home sales two months earlier is as high as the correlation between changes in existing home sales and new home sales in the same month, while the correlation between existing home sales and new home sales in subsequent months is negative and statistically insignificant. Data in the table are based on the pattern over the period from 1975 through 1991. In recent years, the relationship between lagged new home sales and current existing home sales has shifted somewhat, with the maximum correlation occurring between current existing home sales and new home sales three

months earlier. That shift may be due to an increase in the share of the existing home sales that are reported at the time of closing, rather than at the time of sales contract.

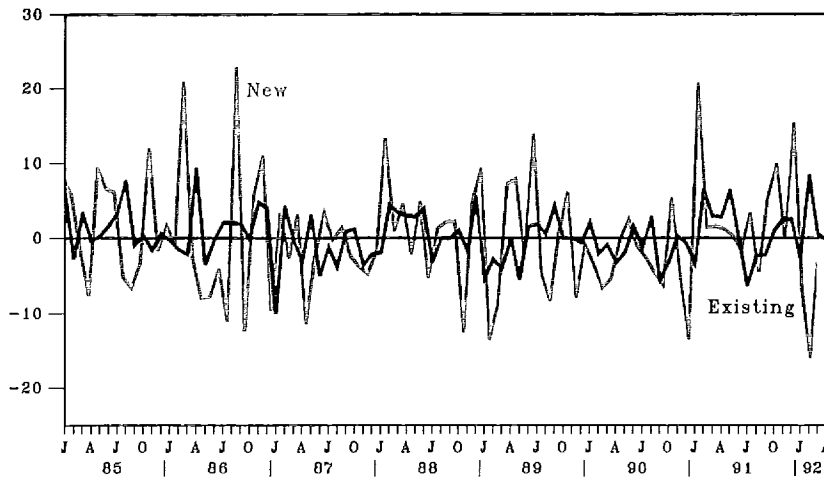
Although the correlation of percentage changes in existing home sales with current or lagged percentage changes in new home sales is statistically significant at the national level, none of the correlation coefficients is very high. That's because there is a lot of "noise" in both series, with more noise in the series on new home sales. Figure 1 shows the monthly percentage changes in each series over the past few years. The standard deviation of the monthly per-

**Table 1 Correlation of Current Changes in Existing Home Sales with Preceding and Subsequent Changes in New Home Sales 1975-1991**

	U.S. Total	North-east	Mid-west	South	West
<b>New Sales Lag:</b>					
-8	0.0505	0.1016	0.0728	0.0625	0.1002
-7	-0.0345	0.0312	-0.0553	-0.0344	-0.0341
-6	0.0849	-0.0233	0.0309	0.1094	-0.1211
-5	-0.0475	-0.0252	-0.0129	-0.0594	0.2085
-4	0.0552	-0.1232	-0.0298	0.1148	-0.1318
-3	0.1023	0.0849	-0.0930	-0.0787	0.1532
-2	0.3217	0.0262	0.0904	0.2202	0.2193
-1	0.2185	0.0656	0.0957	0.1462	0.0189
0	0.3252	0.0722	-0.0048	0.1042	0.2463
1	-0.0186	0.0967	0.0293	-0.0635	-0.0092
2	-0.0995	0.0074	0.0486	-0.0299	-0.0706
3	-0.0655	-0.0686	-0.0396	-0.1475	-0.0443
4	-0.0468	-0.0371	0.0313	0.0139	0.0253
5	0.1124	-0.0568	-0.0893	0.1512	-0.0228
6	0.0081	-0.1096	-0.0993	-0.0087	0.0622
7	0.0035	0.1748	-0.0503	-0.0722	-0.0242
8	0.1035	-0.0211	0.1121	0.0344	0.0268

Source: New Home Sales from Census Bureau (Series C25) Existing Home Sales from National Association of Realtors

**Figure 1 New and Existing Home Sales  
Percent Change, Month-to-Month**



Source: Bureau of the Census, NAR.

percentage changes in new home sales was 7.7 over the 1985 to 1991 period, while the standard deviation of percentage changes in existing home sales was 3.5. The more stable movements in the existing home series are partly due to the mixture of sales contracts and closings, which has the effect of creating a sort of moving average. At the regional level, the noise apparently overwhelms the signal, and the correlation between the two measures is much weaker.

### New Home Methodology

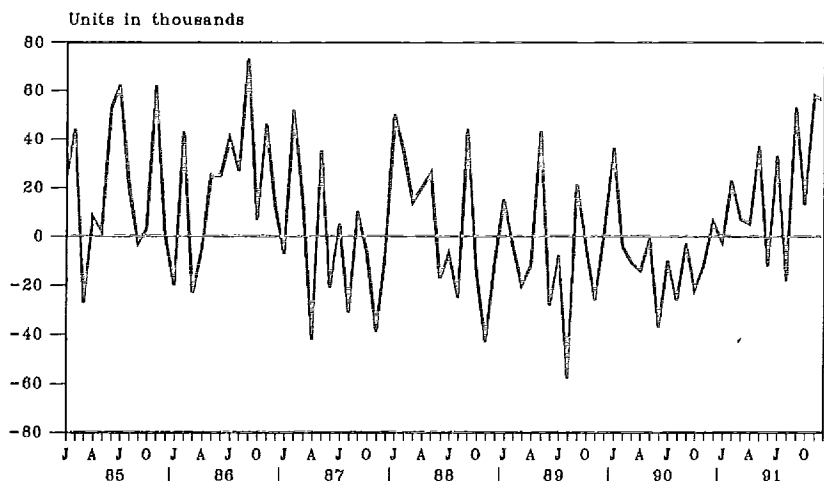
The monthly estimates of new home sales, like the estimates of housing starts and completions, are based on a sample of permits issued for the construction of new homes.<sup>1</sup> Each month the Census Bureau queries the permit holder as to whether the home is intended for sale, and if so, whether a sales contract has been signed. If the home is intended for sale, but is not yet sold, the interviewer will return each month and continue to inquire about the sale until the unit is sold. Because only about 2.5 percent of all

permits are included in the sample, the sales estimate is subject to random sampling error. The standard error on the monthly estimates of sales is about 6 percent, meaning that one-third of the monthly estimates will differ from the actual number of sales by more than 6 percent simply due to sampling error. The standard error of the *change*

in sales is a bit larger than the error on the level of sales. In addition, the sales estimates may be subject to certain biases or nonsampling errors that would occur even if all permits were tracked. Those errors are greatest in the preliminary monthly estimates.

The primary problem with the preliminary new home sales estimate involves sales that take place prior to the issuance of a permit. Since the survey sample is based on permits, there is no way for the Census Bureau to measure such sales as they occur, although those sales are subsequently discovered when the permit is issued and the permit holder informs the interviewer that the unit was presold. Each preliminary monthly sales estimate includes an assumed number of presales, based on the historical relationship between sales of permitted units and presales. Periodically, the methods used to adjust for presales and late reports have been updated. The most recent change in the factors used to convert survey results into preliminary sales estimates occurred in August 1989. Lately, the historical relationship has not been a reliable

**Figure 2 New Single Family Home Sales  
Final Less Preliminary**



Source: Bureau of the Census

**Table 2 Relationships Among Housing Data Series By Region**

	1987	1988	1989	1990	1991
<b>New Home Sales</b>					
Northeast	117	101	86	71	57
Midwest	97	97	102	89	93
South	271	276	260	225	215
West	186	202	202	149	144
U.S.	671	676	650	534	509
<b>Existing Home Sales</b>					
Northeast	618	606	531	469	479
Midwest	892	865	855	831	840
South	1,163	1,224	1,185	1,202	1,199
West	763	817	775	709	702
U.S.	3,436	3,512	3,346	3,211	3,220
<b>New S.F. Home Completions</b>					
Northeast	196	188	159	127	100
Midwest	201	191	191	195	185
South	467	457	420	389	348
West	259	248	257	255	205
U.S.	1,123	1,084	1,027	966	838
<b>Existing Sales/New Sales</b>					
Northeast	5.28	6.00	6.17	6.61	8.40
Midwest	9.20	8.92	8.38	9.34	9.03
South	4.29	4.43	4.56	5.34	5.58
West	4.10	4.04	3.84	4.76	4.88
U.S.	5.12	5.20	5.15	6.01	6.33
<b>New Sales/Completions</b>					
Northeast	59.7%	53.7%	54.1%	55.9%	57.0%
Midwest	48.3%	50.8%	53.4%	45.6%	50.3%
South	58.0%	60.4%	61.9%	57.8%	61.8%
West	71.8%	81.5%	78.6%	58.4%	70.2%
U.S.	59.8%	62.4%	63.3%	55.3%	60.7%
<b>Existing Sales/ 1990 Stock</b>					
Northeast	5.2%	5.1%	4.5%	3.9%	4.0%
Midwest	5.3%	5.1%	5.0%	4.9%	4.9%
South	4.9%	5.2%	5.0%	5.1%	5.1%
West	5.8%	6.2%	5.9%	5.4%	5.3%
U.S.	5.2%	5.3%	5.1%	4.9%	4.9%
<b>New Sales/ 1990 Stock</b>					
Northeast	0.98%	0.85%	0.72%	0.60%	0.48%
Midwest	0.57%	0.57%	0.60%	0.52%	0.55%
South	1.14%	1.16%	1.10%	0.95%	0.91%
West	1.41%	1.54%	1.54%	1.13%	1.10%
U.S.	1.02%	1.03%	0.99%	0.81%	0.77%

measure of presale activity, because changes in the credit markets have favored presales.

Preliminary new homes sales are revised in each of the succeeding three months as actual data replace the estimates of presales and late reports. Figure 2 shows the changes between the preliminary and final new home sales estimates for the past five years. In the past, the size of the revisions averaged about 3 percent. The shift in 1991 and 1992 toward an increased share for presales, however, has meant that 11 of the last 14 preliminary estimates have been revised upward, and several of the upward revisions were greater than 10 percent of the preliminary estimate. In 1990, when builders were trying to cut inventories and lenders were not giving as much preference to presold homes, most of the revisions were downward.

The typical ratio of existing home sales to new home sales is slightly over 5, but in the last few years the ratio has been about 6, as new home sales fell while existing home sales remained relatively stable. The ratio of existing sales to new sales varies among regions, however, so that a shift in the regional distribution of housing activity can create differential movements in the national totals for new and existing home sales. In 1991, the ratio of existing to new sales ranged from 4.9 in the West to 9.0 in the Midwest. Those regional differences are due in part to differences in the number of new homes that are sold rather than custom-built on land owned by the prospective occupant. Also, new construction as a share of the housing stock is substantially more limited in older, slow-growing areas such as the Midwest, while the rate of turnover in the existing stock is relatively uniform among the regions. Table 2 compares the regions in terms

of several key ratios. Geographic swings affect the relationship of new and existing home sales over the business cycle and over the long term, but the month-to-month fluctuations in the national sales totals are probably not affected much.

## Existing Home Methodology

The data on existing home sales are based on reports from about 600 local realtor organizations and multiple listing services. Over the course of a year, those reports cover more than a million sales, representing more than 25 percent of total sales. Because virtually all of the sales in the covered localities that are handled by real estate agents are included, there is virtually no random sampling error of the sort found in the new home data. On the other hand, the set of localities that are included is not a scientifically selected sample but a reflection of the willingness of local groups to participate, and the 15 percent to 18 percent of home sales that are not handled by

brokers are excluded. Thus, the existing home sales estimates may be consistently biased, but they are less noisy.

To convert the total reported by local organizations into regional totals, the existing home sales data are benchmarked by the National Association of Realtors to the 1980 census, which measured the number of single-family homes in which the owner had moved in the preceding 15 months. It is assumed that this turnover rate for owner-occupied properties also applied to single-family investment properties. Multifamily condos are not included in the single-family existing home sales data, but they are reported separately.

## Conclusions

As a timely indicator of housing market trends, as well as a measure specifically applicable to new construction, the data on new home sales are a better measure than existing home sales. The new home sales data, however, are subject to much greater

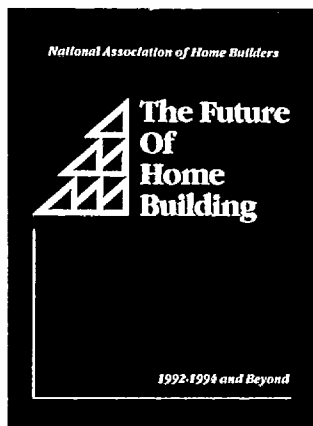
sampling error, and the preliminary estimates are subject to substantial bias. Thus, month-to-month movements should not be accorded a lot of weight, and the bias associated with estimated presales should be taken into account.

The Census Bureau is in the process of reviewing the procedures involved in estimating presales and late reports, and the problems with the preliminary estimates may be mitigated, but it will still be necessary to look at more than one or two months' statistics in order to determine trends.

It is tempting to interpret existing home sales as an indication of trade-up demand for new homes, but recent experience shows the fallacy of that approach. New homes sales faltered, due largely to weakness in trade-up demand, at the same time that existing home sales were outperforming new home sales.

<sup>1</sup> The procedures in areas where permits are not required or are not reported is slightly different. Such areas account for less than 5 percent of new home sales.

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