

The Impact of Weather on Housing Starts in the First Quarter of 1984

The wide swings in the published figures on residential construction activity during early 1984 once again reminded us how dramatically weather can influence economic data. Housing starts figures seasonally adjusted in the usual way showed a surge in January and February but a sharp drop in March, reflecting in part unusual changes in weather conditions.* Our analysis suggests that after allowing for the extreme weather changes, housing starts were strong in the first

*The official seasonal adjustment process eliminates variations in the unadjusted data caused by such factors as normal changes in weather and differing lengths of months. This adjustment is based on the experience of the previous five years, and does not take account of abnormal weather conditions in a particular month.

IN BRIEF—ECONOMIC CAPSULES

Housing Starts and Weather in the First Quarter of 1984
In Percent

Region	December	Degree days* (deviation from normal)			Published Housing Starts (seasonally adjusted change)			Weather-adjusted Housing Starts† (change)			
		January	February	March	January	February	March	January a b	February a b	March a b	
Northeast	-7	-8	18	-21‡	32	59	-45	33 32	21 31	-19 -13	
North Central ...	-30	-5	21‡	-20	49	10	-34	20 15	-17 -2	0 -11	
South	-31	-14	13	-10‡	-3	22	-28	-16 -16	-7 -7	-8 0	
West§	0	9	6	15	43	-12	-10	30 43	-10 -12	-18 -23	
United States§	-19	-6	16	-10	17	14	-27	1 3	-6 -4	-11 -9	

*Positive numbers indicate warmer than normal temperatures; regions are weighted by population.

†Housing starts were adjusted for the weather in two alternative ways. The first method (a) adjusts starts data from their reported levels by the same percent as degree-days vary from their normals, thereby increasing the measure when temperatures were below normal, and vice versa. Recognizing that small fluctuations of temperatures may not significantly alter housing starts, a second adjusted series (b) ignores degree-day deviations of less than ten percentage points. In addition, since severe storms certainly interfere with starts, this series increases starts by ten percent in a region that experienced severe storms—approximately the difference between the Northeast and North Central regions in March.

‡Indicates severe storm(s) in region during month.

§Excluding Alaska and Hawaii.

Source: Bureau of the Census, and Assessment and Information Services Center, *Climate Impact Assessment*.

quarter as a whole, but that the peak this winter occurred in January rather than February as published.

Weather conditions help to explain the recent regional and national fluctuations in monthly data on housing starts (table). Housing starts are especially sensitive to temperature extremes in winter, since frozen ground makes the starting of new projects nearly impossible. January's warming from December coincided with a jump in housing starts, especially in the North Central region. Moreover, in February increasingly warm weather was accompanied by large increases in starts except where severe storms occurred. In contrast, March brought very cold weather or severe storms in every region except the West, and housing starts fell sharply in these affected regions. The West, unlike the other regions, did not experience large fluctuations in weather patterns this winter. Even though the weather appeared to be favorable, this region registered declines in housing starts in February and March.

To quantify the effect of weather on starts, the levels of regional housing starts were adjusted in two admit-

tedly crude ways. These methods raised starts in cold months and lowered them in warm months; the second method also adjusted for severe storms. Although other reasonable techniques may yield different outcomes, the results of these two adjustments are quite similar. The first quarter weather-adjusted average of the annual rate of housing starts stood between 1.92 million and 1.98 million units, bracketing the reported average. In both cases, housing starts rose slightly in January from a weather-adjusted December level and *declined* in February and March, ending between 1.74 million and 1.84 million units. This pattern resembles that of the West (where weather was more nearly normal), lending some support to our results.

These weather-adjusted figures suggest that housing starts peaked during the quarter in January rather than February. They also indicate that, while the published figure for March probably did not fully reflect the underlying strength of residential construction, there may have been some modest slowdown in starts during the course of the first quarter.

Robert B. Stoddard