

# New One-Family Houses Sold

C25/00-1

## Current Construction Reports

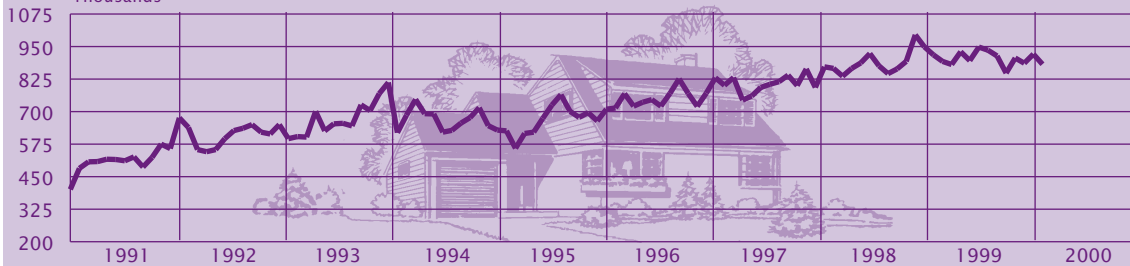
Seasonally adjusted data back to January 1997 have been revised. See Appendix A for a description of seasonal adjustment and the new seasonal factors.

### New One-Family Houses Sold and For Sale and Months' Supply at Current Sales Rate

Seasonally adjusted

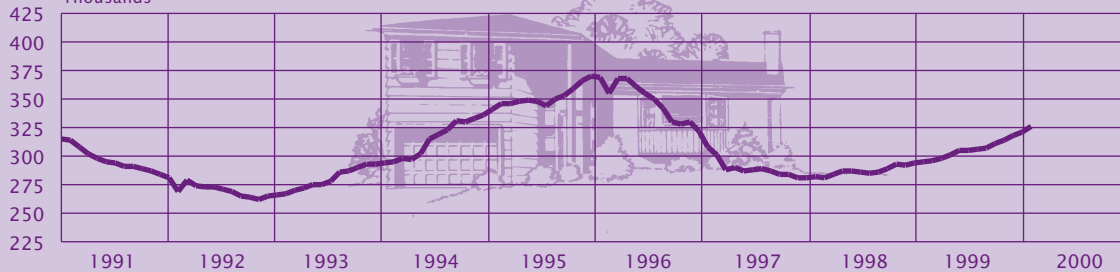
#### Houses Sold

Thousands



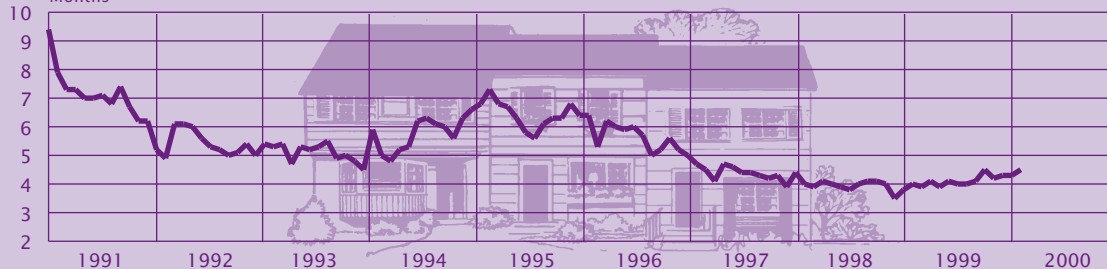
#### Houses For Sale

Thousands



#### Number of Months' Supply<sup>1</sup>

Months



<sup>1</sup>Ratio of houses for sale to houses sold at current sales rate.

Source: U.S. Census Bureau, New One-Family Houses Sold.

Questions regarding these data may be directed to **Dale R. Jacobson**, Residential Construction Branch, Manufacturing and Construction Division, telephone: 301-457-1321.

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## **NEW HOUSES SOLD AND FOR SALE IN JANUARY 2000**

This report provides statistics for new privately owned one-family houses sold and for sale. The U.S. Census Bureau and the U.S. Department of Housing and Urban Development jointly release this report.

Sales of new one-family houses in January 2000 were at a seasonally adjusted annual rate of 882,000 compared with the revised December 1999 rate of 921,000. The revised January 1999 sales rate was 918,000.

The median sales price of new houses sold in January 2000 was \$154,400; the mean sales price was \$194,800. Changes in median and average sales prices reflect changing proportions of houses with different locations, sizes, etc., as well as changes in the prices of houses with identical characteristics. For a measure of the change in the sales price of new houses sold which are the same with respect to important characteristics, refer to the price index found in Tables 6a through 8 of this report. Table 6 shows the Fisher Ideal chain-type annual-weighted index that does not hold any characteristics constant. See the March 1997 issue of this report for a description of these indexes.

The seasonally adjusted estimate of new houses for sale at the end of January was 326,000. This represents a supply of 4.5 months at the current sales rate.

### **EXPLANATORY NOTES**

The statistics in this report are estimated from sample surveys and are subject to sampling variability as well as errors of response and nonreporting. Estimated average relative standard errors for preliminary statistics for houses sold and for sale are shown in the tables. For monthly estimates they are based upon the latest 6-month period ending June or December (January-June or July-December). Quarterly estimates are based upon the more recent of the first 2 quarters or last 2 quarters of the most current year; annual estimates on the last 2 years.

For month-to-month comparisons of total houses sold, the range of the 90-percent confidence interval is  $\pm 9$  percentage points from the estimated change. For current year/month-to-prior year/month comparisons, the range is  $\pm 10$  percentage points. When the range of the confidence interval contains zero, it is uncertain whether there was an increase or decrease; that is, the change is not statistically significant.

In interpreting changes in the statistics in this report, note that month-to-month changes in seasonally adjusted statistics often show movements which may be irregular. It takes 4 months to establish an underlying trend for new houses sold. Preliminary new figures for new houses sold are subject to revision due to survey methodology and definitions used. The survey is primarily based on a sample of houses selected from building permits. Since a "sale" is defined as a deposit being accepted or a sales contract being signed, the sale can occur prior to the issuance of a building permit. An estimate for these prior sales is included in the sales figure. On average, the preliminary seasonally adjusted estimate of total sales is revised  $\pm 3$  percent. This does not include the revisions made when new seasonal factors are computed.

HUD-coded manufactured homes are not included in these statistics. Data for these homes can be found on the internet at:

[www.census.gov/const/www/index.html](http://www.census.gov/const/www/index.html)

Historical statistics on new one-family houses sold and for sale from 1963 to date are available from the Residential Construction Branch, Manufacturing and Construction Division, U.S. Census Bureau, Washington, DC 20233-6900. Telephone: 301-457-1321.

### **RELATED PUBLICATIONS**

Current Construction Reports, *Characteristics of New Housing: 1998, C25/98-A*, U.S. Census Bureau and U.S. Department of Housing and Urban Development, Washington, DC, 20233-6900.

**Table 1. Houses Sold and for Sale and Months' Supply at Current Sales Rate**

Period	Not seasonally adjusted			Seasonally adjusted		
	Number of houses (thousands)		Months' supply at current sales rate <sup>1</sup>	Number of houses (thousands)		Months' supply at current sales rate <sup>1</sup>
	Sold during period	For sale at end of period		Sold during period <sup>2</sup>	For sale at end of period	
<b>ANNUAL DATA</b>						
1989 .....	650	366	(X)	(X)	(X)	(X)
1990 .....	534	321	(X)	(X)	(X)	(X)
1991 .....	509	284	(X)	(X)	(X)	(X)
1992 .....	610	267	(X)	(X)	(X)	(X)
1993 .....	666	295	(X)	(X)	(X)	(X)
1994 .....	670	340	(X)	(X)	(X)	(X)
1995 .....	667	374	(X)	(X)	(X)	(X)
1996 .....	757	326	(X)	(X)	(X)	(X)
1997 .....	804	287	(X)	(X)	(X)	(X)
1998 .....	886	300	(X)	(X)	(X)	(X)
1999 <sup>r</sup> .....	907	327	(X)	(X)	(X)	(X)
<b>MONTHLY DATA</b>						
1997: January .....	61	309	5.1	830	308	4.7
February .....	69	296	4.3	801	301	4.5
March .....	81	284	3.5	831	288	4.1
April .....	70	289	4.1	744	290	4.7
May .....	71	286	4.0	760	287	4.6
June .....	71	288	4.0	793	288	4.4
July .....	69	289	4.2	805	289	4.4
August .....	72	284	4.0	815	287	4.3
September .....	67	285	4.3	840	284	4.2
October .....	62	287	4.6	800	284	4.3
November .....	61	281	4.6	864	281	3.9
December .....	51	287	5.7	793	281	4.4
1998: January .....	64	282	4.4	872	282	4.0
February .....	75	277	3.7	866	281	3.9
March .....	81	281	3.5	836	284	4.1
April .....	82	286	3.5	866	287	4.0
May .....	82	284	3.5	887	287	3.9
June .....	83	287	3.4	923	286	3.8
July .....	75	284	3.8	876	285	4.0
August .....	75	283	3.8	846	286	4.1
September .....	68	291	4.3	864	289	4.1
October .....	69	296	4.3	893	293	4.0
November .....	70	292	4.2	995	292	3.5
December .....	61	300	4.9	949	294	3.8
1999: January .....	67	294	4.4	918	295	4.0
February .....	78	291	3.7	893	296	3.9
March .....	86	296	3.4	881	298	4.1
April .....	88	299	3.4	930	301	3.9
May .....	83	302	3.6	896	305	4.1
June .....	86	307	3.6	948	305	4.0
July .....	80	305	3.8	936	306	4.0
August .....	81	305	3.8	914	307	4.1
September .....	67	313	4.7	848	311	4.5
October <sup>r</sup> .....	69	316	4.6	906	314	4.2
November <sup>r</sup> .....	63	320	5.1	886	318	4.3
December <sup>r</sup> .....	59	327	5.5	921	321	4.3
2000: January <sup>p</sup> .....	65	325	5.0	882	326	4.5
<b>AVERAGE RELATIVE STANDARD ERRORS</b>						
Annual .....	2	3	(X)	(X)	(X)	(X)
Monthly .....	4	3	5	4	3	5

<sup>p</sup>Preliminary. <sup>r</sup>Revised. X Not applicable.

<sup>1</sup>Ratio of houses for sale to houses sold.

<sup>2</sup>Annual rate.

**Table 2. Houses Sold and for Sale by Region**

[Thousand of houses. Components may not add to total because of rounding]

Period	Sold during period										For sale at end of period (not seasonally adjusted)				
	Not seasonally adjusted					Seasonally adjusted annual rate					United States	North-east	Mid-west	South	West
	United States	North-east	Mid-west	South	West	United States	North-east	Mid-west	South	West					
<b>ANNUAL DATA</b>															
1989	650	86	102	260	202	(X)	(X)	(X)	(X)	(X)	366	108	41	123	93
1990	534	71	89	225	149	(X)	(X)	(X)	(X)	(X)	321	77	42	105	97
1991	509	57	93	215	144	(X)	(X)	(X)	(X)	(X)	284	62	41	97	83
1992	610	65	116	259	170	(X)	(X)	(X)	(X)	(X)	267	48	41	104	74
1993	666	60	123	295	188	(X)	(X)	(X)	(X)	(X)	295	53	48	121	73
1994	670	61	123	295	191	(X)	(X)	(X)	(X)	(X)	340	55	63	140	82
1995	667	55	125	300	187	(X)	(X)	(X)	(X)	(X)	374	62	69	158	86
1996	757	74	137	337	209	(X)	(X)	(X)	(X)	(X)	326	38	67	146	74
1997	804	78	140	363	223	(X)	(X)	(X)	(X)	(X)	287	26	65	127	69
1998	886	81	164	398	243	(X)	(X)	(X)	(X)	(X)	300	28	63	142	68
1999 <sup>f</sup>	907	75	173	409	249	(X)	(X)	(X)	(X)	(X)	327	28	67	158	74
<b>MONTHLY DATA</b>															
1997: January	61	7	9	29	15	830	107	148	377	197	309	34	65	137	73
February	69	9	10	33	18	801	96	119	382	204	296	30	63	132	71
March	81	8	13	36	24	831	91	125	375	240	284	28	63	126	67
April	70	8	14	30	19	744	83	134	325	202	289	28	65	129	67
May	71	8	13	31	18	760	83	137	342	198	286	26	64	127	68
June	71	7	15	31	19	793	71	157	352	213	288	27	62	129	69
July	69	6	13	30	21	805	66	152	344	243	289	28	63	130	68
August	72	7	12	34	19	815	73	138	383	221	284	28	62	127	68
September	67	6	10	31	20	840	71	129	388	252	285	27	65	125	68
October	62	5	11	28	18	800	72	133	368	227	287	27	66	126	68
November	61	6	12	27	16	864	85	166	386	227	281	26	64	124	67
December	51	5	9	24	13	793	76	157	354	205	287	26	65	127	69
1998: January	64	5	10	32	17	872	73	166	413	220	282	27	62	126	67
February	75	8	15	30	22	866	90	187	348	241	277	25	61	128	63
March	81	8	18	34	21	836	87	178	354	217	281	24	59	132	67
April	82	8	16	37	22	866	87	151	401	226	286	24	61	133	68
May	82	9	14	34	25	887	95	147	374	270	284	23	61	134	65
June	83	8	17	39	21	923	82	173	433	235	287	23	63	134	68
July	75	6	13	35	20	876	72	160	408	237	284	23	61	130	70
August	75	7	13	34	21	846	77	149	378	243	283	23	60	131	69
September	68	7	13	30	18	864	78	175	382	228	291	24	61	137	69
October	69	6	13	31	20	893	77	159	399	258	296	25	64	138	69
November	70	7	12	31	20	995	95	161	447	292	292	25	62	137	67
December	61	5	11	29	15	949	76	186	434	252	300	28	63	142	68
1999: January	67	5	10	32	20	918	78	166	415	258	294	27	61	140	66
February	78	7	14	38	19	893	78	173	433	210	291	24	60	141	66
March	86	6	16	38	26	881	74	154	390	263	296	25	60	145	67
April	88	7	17	38	25	930	80	173	411	266	299	25	59	148	67
May	83	6	17	38	22	896	71	173	417	236	302	25	60	149	68
June	86	6	17	39	24	948	68	172	437	272	307	26	60	150	71
July	80	7	15	37	21	936	84	174	430	248	305	26	61	147	72
August	81	8	16	34	22	914	89	190	385	249	305	26	62	148	70
September	67	6	12	30	18	848	77	153	381	237	313	25	62	153	72
October <sup>f</sup>	69	5	15	29	20	906	71	198	385	253	316	26	64	155	70
November <sup>f</sup>	63	4	13	28	17	886	61	185	391	249	320	28	65	155	71
December <sup>f</sup>	59	6	9	28	16	921	88	150	427	256	327	28	67	158	74
2000: January <sup>p</sup>	65	6	8	32	19	882	93	137	415	238	325	27	69	158	72
<b>AVERAGE RELATIVE STANDARD ERRORS</b>															
Annual . . . . (percent) . .	2	6	7	3	4	(X)	(X)	(X)	(X)	(X)	3	10	6	4	6
Monthly . . . . (percent) . .	4	19	12	6	7	4	19	12	6	7	3	11	7	5	4

<sup>p</sup>Preliminary. <sup>f</sup>Revised. X Not applicable.

**Table 3. Houses Sold and for Sale by Stage of Construction**

[Thousands of houses. Components may not add to total because of rounding]

Period	Sold during period				For sale at end of period			
	Total	Completed	Under construction	Not started	Total	Completed	Under construction	Not started
<b>ANNUAL DATA</b>								
1989.....	650	215	263	172	366	109	188	69
1990.....	534	193	199	142	321	119	145	57
1991.....	509	184	172	154	284	104	130	51
1992.....	610	196	211	202	267	86	135	46
1993.....	666	198	225	243	295	83	166	47
1994.....	670	220	230	220	340	108	189	42
1995.....	667	238	223	205	374	123	199	52
1996.....	757	275	254	228	326	101	185	40
1997.....	804	236	295	273	287	92	161	34
1998.....	886	228	334	324	300	72	185	43
1999 <sup>r</sup> .....	907	215	369	323	327	83	201	43
<b>MONTHLY DATA</b>								
1997: January.....	61	22	20	19	309	97	174	38
February.....	69	23	23	23	296	95	165	37
March.....	81	25	29	27	284	91	158	35
April.....	70	21	24	26	289	91	165	33
May.....	71	23	24	24	286	90	163	33
June.....	71	19	30	22	288	89	163	36
July.....	69	20	26	22	289	88	165	36
August.....	72	19	28	25	284	87	163	34
September.....	67	18	26	22	285	90	164	31
October.....	62	18	24	20	287	91	163	33
November.....	61	18	24	19	281	92	158	31
December.....	51	14	17	19	287	92	161	34
1998: January.....	64	18	22	25	282	86	161	35
February.....	75	19	26	30	277	85	157	35
March.....	81	20	30	31	281	81	164	36
April.....	82	20	31	31	286	80	168	38
May.....	82	17	34	31	284	81	166	37
June.....	83	21	31	31	287	77	173	37
July.....	75	21	30	24	284	75	171	39
August.....	75	19	32	25	283	74	172	37
September.....	68	18	26	25	291	75	177	39
October.....	69	19	27	23	296	76	181	39
November.....	70	20	26	23	292	73	185	34
December.....	61	17	23	21	300	72	185	43
1999: January.....	67	14	27	26	294	72	182	39
February.....	78	19	29	30	291	70	182	39
March.....	86	19	35	31	296	71	187	38
April.....	88	18	36	34	299	73	183	44
May.....	83	19	34	30	302	76	186	40
June.....	86	21	34	31	307	76	181	50
July.....	80	20	32	28	305	73	183	49
August.....	81	21	32	28	305	71	188	46
September.....	67	16	28	23	313	76	191	46
October <sup>r</sup> .....	69	18	31	20	316	76	197	43
November <sup>r</sup> .....	63	14	27	21	320	81	200	39
December <sup>r</sup> .....	59	16	25	18	327	83	201	43
2000: January <sup>p</sup> .....	65	18	28	19	325	85	196	45
<b>AVERAGE RELATIVE STANDARD ERRORS</b>								
Annual..... (percent) ..	2	4	3	5	3	4	3	6
Monthly..... (percent) ..	4	7	5	11	3	5	3	5

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

9 Table 4. **Houses Sold by Sales Price**

[Thousands of houses. Components may not add to total because of rounding. Percents computed from unrounded figures]

Period	Total	Number of houses <sup>1</sup>						Percent distribution <sup>2</sup>						Median sales price (dollars)	Average sales price (dollars)
		Under \$80,000	\$80,000 to \$99,999	\$100,000 to \$119,999	\$120,000 to \$149,999	\$150,000 to \$199,999	\$200,000 and over	Under \$80,000	\$80,000 to \$99,999	\$100,000 to \$119,999	\$120,000 to \$149,999	\$150,000 to \$199,999	\$200,000 and over		
<b>ANNUAL DATA</b>															
1995.....	667	58	101	99	144	127	138	9	15	15	22	19	21	133,900	158,700
1996.....	757	59	104	101	159	160	175	8	14	13	21	21	23	140,000	166,400
1997.....	804	51	93	103	173	177	207	6	12	13	21	22	26	146,000	176,200
1998.....	886	41	91	112	183	208	251	5	10	13	21	23	28	152,500	181,900
1999 <sup>r</sup> .....	907	33	73	100	190	214	297	4	8	11	21	24	33	160,000	194,900
<b>MONTHLY DATA</b>															
1998: January.....	64	3	8	9	13	14	17	4	12	14	21	22	27	148,000	178,600
February.....	75	3	8	11	13	18	23	4	10	15	17	23	31	156,000	181,600
March.....	81	3	8	10	17	20	22	4	10	12	21	25	27	152,700	178,500
April.....	82	4	9	11	19	18	22	5	11	13	23	22	26	148,000	176,700
May.....	82	4	9	11	15	20	23	5	11	13	19	24	28	153,200	183,500
June.....	83	5	10	10	18	19	21	6	12	12	22	22	26	148,000	175,900
July.....	75	5	8	10	15	16	21	6	10	14	20	21	28	149,900	179,800
August.....	75	4	7	9	16	17	23	5	10	12	21	22	30	154,900	186,500
September.....	68	2	7	8	14	18	18	3	10	12	21	27	26	155,000	182,700
October.....	69	3	7	9	13	16	21	5	11	13	18	23	30	154,500	182,800
November.....	70	3	6	9	16	17	19	4	9	12	23	24	27	151,000	178,600
December.....	61	3	5	7	14	15	17	6	8	11	23	24	28	152,500	183,300
1999: January.....	67	3	7	7	15	17	18	4	11	11	23	25	27	152,500	182,800
February.....	78	3	6	10	17	17	26	4	7	13	21	21	33	159,900	191,400
March.....	86	3	8	11	18	21	26	3	9	13	21	24	30	155,000	189,400
April.....	88	2	10	9	18	21	28	3	11	11	20	23	32	160,000	191,400
May.....	83	3	7	10	19	18	26	4	8	13	23	21	31	154,800	188,200
June.....	86	3	6	10	18	20	28	4	7	12	21	23	33	158,300	193,400
July.....	80	3	7	10	15	19	26	4	9	13	18	24	32	157,900	188,800
August.....	81	3	7	9	20	18	25	3	8	11	25	23	30	154,900	193,300
September.....	67	2	6	7	14	17	22	3	9	10	20	25	33	162,000	194,400
October <sup>r</sup> .....	69	2	5	6	16	17	22	4	8	8	24	25	32	160,000	200,300
November <sup>r</sup> .....	63	3	3	7	12	15	23	4	5	11	20	24	37	170,700	211,500
December <sup>r</sup> .....	59	3	4	6	11	16	20	5	6	10	19	27	34	164,000	203,800
2000: January <sup>p</sup> .....	65	4	6	6	15	15	20	6	9	9	24	22	31	154,400	194,800
<b>AVERAGE RELATIVE STANDARD ERRORS</b>															
Annual..... (percent) ..	2	7	5	6	5	5	5	7	5	6	5	5	5	2	2
Monthly..... (percent) ..	4	24	16	13	8	8	7	24	15	12	7	7	6	4	2

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Houses for which sales price was not reported have been distributed proportionally to those for which sales price was reported.

<sup>2</sup>Total equals 100 percent.

Note: The sales price includes the land.

Table 5. Median Number of Months on Sales Market

[Houses not started are excluded. Medians computed from unrounded figures]

Period	Houses sold, measured from month of start		Houses for sale			Period	Houses sold, measured from month of start		Houses for sale		
	Not seasonally adjusted	Seasonally adjusted	Measured from month of start		Measured from month of completion (not seasonally adjusted)		Not seasonally adjusted	Seasonally adjusted	Measured from month of start		Measured from month of completion (not seasonally adjusted)
			Not seasonally adjusted	Seasonally adjusted					Not seasonally adjusted	Seasonally adjusted	
<b>ANNUAL DATA</b>											
1989	4.3	(X)	6.5	(X)	5.5	April	3.9	3.8	4.5	4.3	5.9
1990	4.5	(X)	7.8	(X)	5.7	May	2.7	2.8	4.2	4.1	5.5
1991	4.4	(X)	6.8	(X)	6.9	June	3.2	3.5	3.8	4.1	5.3
1992	3.5	(X)	5.2	(X)	6.3	July	3.5	3.7	3.9	4.3	5.1
1993	3.6	(X)	4.4	(X)	4.6	August	3.1	3.4	4.0	4.4	5.2
1994	3.8	(X)	4.9	(X)	4.1	September	3.5	3.8	3.9	4.2	5.2
1995	4.3	(X)	5.3	(X)	5.5	October	3.1	3.3	4.0	4.2	4.8
1996	4.2	(X)	4.8	(X)	4.6	November	3.4	3.4	3.9	4.0	5.0
1997	3.7	(X)	4.9	(X)	4.3	December	3.8	3.5	4.0	4.0	5.0
1998	3.5	(X)	4.0	(X)	5.0	<b>1999</b>					
1999 <sup>r</sup>	3.3	(X)	4.2	(X)	4.6	January	3.3	2.8	4.3	4.0	5.1
						February	4.0	3.6	4.4	4.0	5.1
<b>MONTHLY DATA</b>						March	3.1	3.1	4.4	3.9	5.0
<b>1997</b>						April	3.6	3.5	4.2	4.0	4.8
January	4.8	4.2	5.1	4.8	4.9	May	2.9	3.1	3.8	3.8	4.2
February	4.5	4.0	5.3	4.8	4.8	June	3.1	3.4	3.8	4.1	3.9
March	3.9	3.9	5.4	4.9	4.8	July	3.2	3.4	3.9	4.2	4.2
April	4.1	4.0	5.2	4.8	4.6	August	3.2	3.6	3.7	4.1	4.4
May	3.8	4.0	4.7	4.7	4.7	September	3.0	3.2	3.9	4.2	4.2
June	2.7	3.0	4.4	4.7	4.6	October <sup>r</sup>	3.4	3.6	3.8	4.0	4.4
July	3.4	3.6	4.3	4.7	4.6	November <sup>r</sup>	3.1	3.0	3.9	4.1	4.5
August	3.1	3.4	4.4	4.8	4.2	December <sup>r</sup>	3.7	3.3	4.2	4.1	4.6
September	3.2	3.5	4.4	4.7	4.2	<b>2000</b>					
October	3.4	3.6	4.4	4.7	4.0	January <sup>p</sup>	3.7	3.2	4.4	4.1	4.8
November	3.8	3.7	4.6	4.8	3.9	<b>AVERAGE RELATIVE STANDARD ERRORS</b>					
December	3.8	3.5	4.9	4.8	4.3	Annual . . . (percent) . .	3	(X)	5	(X)	7
<b>1998</b>						Monthly . . . (percent) . .	11	11	6	6	13
January	4.3	3.7	5.1	4.8	4.9						
February	4.2	3.7	5.3	4.8	5.3						
March	3.6	3.5	5.1	4.6	5.8						

<sup>p</sup>Preliminary. <sup>r</sup>Revised. X Not applicable.

**Table 6. Chain-Type Annual-Weighted Price Index (Fisher Ideal) of New One-Family Houses Sold Including Value of Lot**

[1992=100.0. Index based on kinds of houses sold in 1992]

Year	Annual	First quarter	Second quarter	Third quarter	Fourth quarter	Northeast	Midwest	South	West
1979	59.5	56.2	59.2	60.1	62.6	47.1	64.4	63.6	59.6
1980	65.4	63.8	64.8	66.4	66.5	51.2	67.6	70.7	66.1
1981	70.3	69.3	70.2	70.3	71.3	56.0	72.3	76.3	70.1
1982	73.2	73.4	73.5	73.2	72.8	58.4	75.5	80.3	71.5
1983	75.3	74.6	74.8	76.0	75.8	61.7	75.0	82.6	73.8
1984	78.1	76.2	77.8	78.7	79.7	67.1	79.2	84.7	76.2
1985	80.1	79.9	79.8	79.6	81.2	73.6	78.5	86.6	77.2
1986	83.8	81.8	83.8	85.2	84.5	84.8	83.0	88.9	78.7
1987	88.7	86.8	88.3	89.8	90.1	96.8	88.6	91.8	82.6
1988	92.1	91.3	91.7	92.7	92.7	99.8	92.7	94.0	87.2
1989	95.8	94.5	96.4	96.3	95.9	102.1	94.8	97.0	92.9
1990	97.4	97.8	96.7	98.0	96.9	98.1	95.4	97.3	98.3
1991	98.6	97.2	99.3	100.0	97.8	96.2	97.8	98.9	99.2
1992	100.0	98.9	99.7	100.1	101.3	100.0	100.0	100.0	100.0
1993	104.5	101.9	105.3	105.9	104.8	98.0	107.0	104.7	103.8
1994	109.6	108.1	109.7	110.0	110.5	100.0	112.8	108.4	111.1
1995	112.5	111.2	112.4	112.8	113.7	103.0	116.5	111.7	113.2
1996	114.9	115.3	114.5	115.6	115.1	104.7	119.3	113.0	117.2
1997	118.2	117.1	119.3	118.9	119.4	107.5	123.3	115.8	120.8
1998	121.0	121.0	121.0	122.3	123.4	110.9	125.4	118.7	123.6
1999	<sup>r</sup> 127.1	127.2	127.0	129.3	<sup>r</sup> 128.9	<sup>r</sup> 115.4	<sup>r</sup> 131.2	<sup>r</sup> 124.4	<sup>r</sup> 130.9

<sup>r</sup>Revised.

**Table 6a. Fixed-Weighted Price Index (Laspeyres) of New One-Family Houses Sold Including Value of Improved Lot**

[1992=100.0. Index based on kinds of houses sold in 1992]

Year	Annual	First quarter	Second quarter	Third quarter	Fourth quarter	Northeast	Midwest	South	West
1979	61.8	58.8	62.1	63.1	65.5	46.3	64.0	62.9	61.1
1980	68.1	66.7	67.7	69.4	69.8	50.5	67.1	70.2	68.2
1981	73.5	73.0	74.0	74.0	74.7	55.3	73.9	76.7	72.9
1982	75.2	76.4	76.0	75.3	74.7	56.7	75.1	79.5	73.5
1983	76.8	76.5	76.7	77.9	77.9	60.3	75.2	81.4	75.2
1984	79.9	78.6	80.3	81.1	81.9	66.0	80.2	84.6	77.3
1985	80.9	81.6	81.1	80.7	82.1	74.5	78.4	86.6	78.0
1986	84.1	82.7	84.7	86.0	85.2	84.5	82.5	89.4	80.9
1987	88.6	87.4	88.8	90.2	90.4	97.6	88.8	92.3	84.8
1988	91.9	91.7	92.1	93.1	93.0	100.5	92.8	94.3	87.6
1989	95.6	94.8	96.6	96.6	96.2	102.1	94.9	97.2	92.2
1990	97.4	98.2	97.2	98.6	97.5	99.3	95.5	97.4	98.1
1991	98.7	97.8	99.9	100.6	98.3	96.4	97.7	98.9	99.1
1992	100.0	99.3	100.1	100.3	101.0	100.0	100.0	100.0	100.0
1993	104.3	101.8	105.1	105.6	104.6	97.1	106.7	104.7	103.6
1994	109.3	108.0	109.6	109.9	110.2	98.4	112.0	108.5	110.9
1995	112.4	110.8	111.9	112.2	113.0	100.7	116.3	111.9	112.7
1996	114.5	114.7	113.8	115.0	114.6	104.1	118.6	112.6	116.8
1997	118.4	116.4	118.6	118.2	118.7	106.6	122.9	116.5	120.5
1998	121.4	120.3	120.3	121.6	122.7	110.7	124.7	120.4	122.9
1999	<sup>r</sup> 127.7	126.5	126.3	128.5	<sup>r</sup> 128.1	<sup>r</sup> 114.9	<sup>r</sup> 129.7	<sup>r</sup> 125.5	<sup>r</sup> 131.9

<sup>r</sup>Revised.



**Table 7. Average Sales Price of Kinds of One-Family Houses Sold in 1992 Compared With That of Houses Actually Sold Based on the Laspeyres Price Index**

[In dollars]

Period	Average sales price of kinds of houses sold in 1992 (estimated from price index)		Average sales price of houses actually sold		Period	Average sales price of kinds of houses sold in 1992 (estimated from price index)		Average sales price of houses actually sold	
	Price	Period-to-period percent change <sup>1</sup>	Price	Period-to-period percent change		Price	Period-to-period percent change <sup>1</sup>	Price	Period-to-period percent change
<b>ANNUAL DATA</b>					1988: First quarter . . . . .	132,100	1.4	137,900	3.3
1982 . . . . .	108,400	2.4	83,900	1.1	Second quarter . . . . .	132,700	0.5	134,800	-2.2
1983 . . . . .	110,700	2.1	89,800	7.0	Third quarter . . . . .	134,100	1.0	141,500	5.0
1984 . . . . .	115,100	4.1	97,600	8.7	Fourth quarter . . . . .	134,000	-0.1	140,400	-0.8
1985 . . . . .	116,600	1.2	100,800	3.3	1989: First quarter . . . . .	136,700	2.0	144,300	2.8
1986 . . . . .	121,200	3.9	111,900	11.0	Second quarter . . . . .	139,100	1.8	146,800	1.7
1987 . . . . .	127,700	5.3	127,200	13.7	Third quarter . . . . .	139,200	0.0	150,200	2.3
1988 . . . . .	132,400	3.8	138,300	8.7	Fourth quarter . . . . .	138,600	-0.4	151,200	0.7
1989 . . . . .	137,800	4.0	148,800	7.6	1990: First quarter . . . . .	141,500	2.1	149,500	-1.1
1990 . . . . .	140,400	1.9	149,800	0.7	Second quarter . . . . .	140,100	-1.0	151,200	1.1
1991 . . . . .	142,200	1.3	147,200	-1.7	Third quarter . . . . .	142,200	1.5	145,500	-3.8
1992 . . . . .	144,100	1.4	144,100	-2.1	Fourth quarter . . . . .	140,500	-1.1	150,100	3.2
1993 . . . . .	150,300	4.3	147,700	2.5	1991: First quarter . . . . .	140,900	0.2	151,100	0.7
1994 . . . . .	157,500	4.7	154,500	4.6	Second quarter . . . . .	144,000	2.2	148,200	-1.9
1995 . . . . .	161,900	2.8	158,700	2.7	Third quarter . . . . .	145,000	0.7	145,400	-1.9
1996 . . . . .	165,100	2.0	166,400	4.9	Fourth quarter . . . . .	141,700	-2.3	144,400	-0.7
1997 . . . . .	170,600	3.4	176,200	5.9	1992: First quarter . . . . .	143,100	1.0	144,500	0.1
1998 . . . . .	175,000	2.6	181,900	3.2	Second quarter . . . . .	144,200	0.8	145,300	0.6
1999 <sup>r</sup> . . . . .	184,000	5.2	194,900	7.1	Third quarter . . . . .	144,500	0.2	141,700	-2.5
					Fourth quarter . . . . .	145,600	0.8	147,200	3.9
<b>QUARTERLY DATA</b>					1993: First quarter . . . . .	146,800	0.8	144,700	-1.7
1982: First quarter . . . . .	110,000	2.2	81,200	-3.0	Second quarter . . . . .	151,400	3.2	148,900	2.9
Second quarter . . . . .	109,500	-0.4	85,700	5.5	Third quarter . . . . .	152,100	0.5	148,000	-0.6
Third quarter . . . . .	108,600	-0.9	83,900	-2.1	Fourth quarter . . . . .	150,800	-0.9	148,300	0.2
Fourth quarter . . . . .	107,700	-0.8	84,600	0.8	1994: First quarter . . . . .	155,700	3.3	153,600	3.6
1983: First quarter . . . . .	110,200	2.3	86,700	2.5	Second quarter . . . . .	158,000	1.5	154,200	0.4
Second quarter . . . . .	110,600	0.4	89,100	1.8	Third quarter . . . . .	158,300	0.2	152,800	-0.9
Third quarter . . . . .	112,300	1.6	92,500	3.8	Fourth quarter . . . . .	158,800	0.3	156,100	2.2
Fourth quarter . . . . .	112,200	-0.1	90,800	-1.8	1995: First quarter . . . . .	159,600	0.5	153,500	-1.7
1984: First quarter . . . . .	113,200	0.9	94,700	4.3	Second quarter . . . . .	161,300	1.1	158,900	3.5
Second quarter . . . . .	115,700	2.2	99,200	4.8	Third quarter . . . . .	161,600	0.2	157,700	-0.8
Third quarter . . . . .	116,900	1.0	98,500	-0.7	Fourth quarter . . . . .	162,800	0.7	160,900	2.0
Fourth quarter . . . . .	118,000	0.9	97,800	-0.7	1996: First quarter . . . . .	165,200	1.5	161,100	0.1
1985: First quarter . . . . .	117,600	-0.4	98,500	0.7	Second quarter . . . . .	164,000	-0.7	166,000	3.0
Second quarter . . . . .	116,900	-0.6	100,500	2.0	Third quarter . . . . .	166,400	1.4	164,000	-1.2
Third quarter . . . . .	116,300	-0.5	100,500	0.0	Fourth quarter . . . . .	165,100	-0.4	171,000	4.3
Fourth quarter . . . . .	118,300	1.7	103,800	3.3	1997: First quarter . . . . .	167,800	1.6	172,200	0.7
1986: First quarter . . . . .	119,100	0.7	106,300	2.3	Second quarter . . . . .	170,800	1.8	177,200	2.9
Second quarter . . . . .	122,100	2.5	112,300	5.4	Third quarter . . . . .	170,300	-0.3	174,700	-1.4
Third quarter . . . . .	123,900	1.4	114,400	2.1	Fourth quarter . . . . .	171,000	0.5	175,400	0.4
Fourth quarter . . . . .	122,700	-0.9	115,600	1.0	1998: First quarter . . . . .	173,400	1.3	180,000	2.6
1987: First quarter . . . . .	125,900	2.6	120,800	4.5	Second quarter . . . . .	173,400	0.0	178,800	-0.7
Second quarter . . . . .	128,000	1.6	126,100	4.4	Third quarter . . . . .	175,200	1.1	184,300	3.1
Third quarter . . . . .	129,900	1.5	129,900	3.0	Fourth quarter . . . . .	176,800	0.9	181,500	-1.5
Fourth quarter . . . . .	130,300	0.3	133,500	2.8	1999: First quarter . . . . .	182,300	3.1	189,100	4.2
					Second quarter . . . . .	182,000	-0.2	191,700	1.4
					Third quarter . . . . .	185,200	1.8	192,900	0.6
					Fourth quarter . . . . .	<sup>r</sup> 184,600	<sup>r</sup> -0.3	203,900	5.7

<sup>r</sup>Revised.

<sup>1</sup>Derived from unrounded figures.

**Table 8. Average Sales Price of Kinds of New One-Family Houses Sold in 1992 Compared With That of Houses Actually Sold by Region Based on the Laspeyres Price Index**

[In dollars]

Period	Average sales price of kinds of houses sold in 1992 (estimated from price index)		Average sales price of houses actually sold		Period	Average sales price of kinds of houses sold in 1992 (estimated from price index)		Average sales price of houses actually sold	
	Price	Period-to-period percent change <sup>1</sup>	Price	Period-to-period percent change		Price	Period-to-period percent change <sup>1</sup>	Price	Period-to-period percent change
<b>NORTHEAST</b>					<b>SOUTH</b>				
1977	70,800	(X)	54,800	(X)	1977	63,200	(X)	48,100	(X)
1978	77,600	9.5	63,000	15.0	1978	70,300	11.3	55,600	15.6
1979	88,700	14.4	71,500	13.5	1979	80,900	15.0	63,800	14.7
1980	97,500	10.0	80,300	12.3	1980	90,300	11.7	69,100	8.3
1981	105,700	8.4	88,500	10.2	1981	98,200	8.7	75,600	9.4
1982	109,400	3.5	88,600	0.1	1982	101,300	3.2	78,300	3.6
1983	116,300	6.3	96,200	8.6	1983	104,100	2.8	83,000	6.0
1984	126,200	8.5	107,400	11.6	1984	107,400	3.2	86,000	3.6
1985	138,900	10.1	121,900	13.5	1985	109,700	2.1	88,900	3.4
1986	159,400	14.8	151,300	24.1	1986	113,000	3.1	95,300	7.2
1987	181,100	13.6	170,900	13.0	1987	117,000	3.5	106,600	11.9
1988	185,500	2.4	179,300	4.9	1988	119,700	2.3	114,800	7.7
1989	191,000	3.0	188,600	5.2	1989	123,000	2.8	123,100	7.2
1990	187,100	-2.1	190,500	1.0	1990	123,300	0.2	123,500	0.3
1991	181,000	-3.3	188,800	-0.9	1991	125,600	1.9	123,000	-0.4
1992	194,900	7.7	194,900	3.2	1992	126,900	1.0	126,900	3.2
1993	189,300	-2.9	183,600	-5.8	1993	132,900	4.7	133,600	5.3
1994	191,800	1.3	200,500	9.2	1994	137,700	3.6	136,800	2.4
1995	196,300	2.4	216,600	8.0	1995	142,000	3.2	142,000	3.8
1996	202,900	3.3	226,100	4.4	1996	142,800	0.6	144,200	1.5
1997	207,800	2.4	234,100	3.5	1997	147,800	3.5	151,400	5.0
1998	215,700	3.8	240,100	2.6	1998	152,700	3.3	159,700	5.5
1999	224,000	3.8	246,500	2.7	1999	159,300	4.3	171,300	7.3
<b>MIDWEST</b>					<b>WEST</b>				
1977	68,500	(X)	55,200	(X)	1977	68,900	(X)	60,700	(X)
1978	78,500	14.6	64,200	16.3	1978	82,400	19.6	70,100	15.5
1979	87,900	12.0	73,000	13.7	1979	96,100	16.6	82,000	17.0
1980	91,900	4.5	74,400	1.9	1980	107,500	11.9	89,400	9.0
1981	100,500	9.3	82,500	10.9	1981	114,300	6.3	95,800	7.2
1982	103,300	2.9	87,700	6.3	1982	115,600	1.1	92,600	-3.3
1983	103,200	-0.2	97,600	11.3	1983	117,900	2.0	97,200	5.0
1984	109,200	5.9	107,800	10.5	1984	122,100	3.6	109,400	12.6
1985	107,400	-1.6	95,400	-11.5	1985	123,000	0.7	111,800	2.2
1986	113,600	5.7	102,600	7.5	1986	126,100	2.5	116,100	3.8
1987	121,100	6.7	115,500	12.6	1987	132,700	5.3	134,600	15.9
1988	126,500	4.4	123,700	7.1	1988	139,800	5.4	155,700	15.7
1989	129,400	2.3	130,600	5.6	1989	148,700	6.3	173,900	11.7
1990	130,500	1.1	133,000	1.8	1990	155,900	4.8	180,600	3.9
1991	133,900	2.6	134,500	1.1	1991	156,900	0.7	176,400	-2.3
1992	136,400	1.9	136,400	1.4	1992	157,800	0.6	157,800	-10.5
1993	145,500	6.7	143,100	4.9	1993	163,500	3.6	161,900	2.6
1994	152,700	4.9	152,700	6.7	1994	174,900	7.0	168,900	4.3
1995	158,600	3.9	157,200	2.9	1995	177,900	1.7	169,800	0.5
1996	161,800	2.0	158,900	1.1	1996	184,300	3.6	186,200	9.7
1997	167,600	3.6	173,000	8.9	1997	190,100	3.2	198,200	6.4
1998	170,200	1.5	179,200	3.6	1998	193,900	2.0	200,500	1.2
1999	176,900	4.0	184,400	2.9	1999	208,200	7.4	222,100	10.8

<sup>1</sup>Revised. X Not applicable.

<sup>1</sup>Derived from unrounded figures.

# Appendix A.

## Description of Monthly Housing Sales Survey

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### INTRODUCTION

The U.S. Census Bureau conducts the Housing Sales Survey under contract with the U.S. Department of Housing and Urban Development. Statistics are estimates derived from a survey of new one-family houses sold or for sale for which building permits have been issued in permit-issuing places, or which have been started in nonpermit areas. The information is obtained by monthly interviews with the builders or owners of the new houses in the sample. These monthly interviews continue until the house is sold or withdrawn from the sales market.

### SAMPLE DESIGN AND SELECTION

The housing sales sample is a subset of the Survey of Construction (SOC) sample. The sample design for the SOC sample is a stratified multistaged cluster design. Each State was divided into areas made up of counties (towns in New England) and independent cities. These areas were grouped within each State to form strata for the Current Population Survey (CPS) according to metropolitan status and 1980 labor force, race/ethnic origin, population change, and family and housing characteristics.

One area from each of the strata was selected with probability proportional to the number of persons 16 years of age and older. The CPS strata were further stratified into 169 strata, according to census region, metropolitan status, building-permit activity in 1982, population, and the percent of the population living in areas which do not issue building permits. One of the CPS-selected areas was selected from each of these 169 strata with probability proportional to the number of persons 16 and older. Within each of these 169 areas the sample was selected from two different sample frames: permit-issuing places and land areas not covered by building-permit systems.

Each of the 17,000 permit-issuing places was assigned to one of six size classes based on a weighted average of 1978, 1981, and 1982 permit activity. The permit places in each of the 169 areas were grouped into these six size classes and a systematic sample of places was selected from each one of them. Places were selected at different sampling rates in each of the classes so that larger proportions of the places were selected from the larger size classes. For example, all places in the largest size classes fell into the sample if they were in the 169 areas, whereas only an expected 1 in 40 of the places in the smallest size class fell into the sample. Approximately 840 permit-issuing places were selected. Monthly, census interviewers

now are sampling permits from about 820 of these originally selected permit-issuing places. They select permits for one-family houses at an overall rate of 1 in 40.

Within each of the 169 areas, the land not covered by building permit-issuing systems, called nonpermit areas, was identified. Small land areas (1980 Census enumeration districts) in these nonpermit areas were grouped into two strata according to the 1980 population. Overall, 1 out of every 120 land areas was selected from the strata with the larger land areas, and 1 out of 600 was selected from the strata with the smaller areas. Monthly, census interviewers intensively canvassed about 130 selected land areas looking for one-family houses started.

In January 1995, the area covered by building permit systems was expanded to 19,000 permit-issuing places. Canvassing was stopped in those selected land areas now represented by permit-issuing places. Census field representatives continue to canvass monthly about 70 land areas still not covered by building permit systems.

The monthly housing sales sample consists of those one-family houses which the interviewer found to be either sold or for sale. Those few cases for which interviewers cannot obtain information about intention are also included in this monthly survey. Approximately 60 to 65 percent of these cases are found to be for sale. The remainder are removed from the survey.

During 1999, the Housing Sales Survey's average monthly sample size was about 7,500 sample cases. Of these, an average of 1,250 were new cases entering the sample. The remaining cases were carried over from the previous month.

The monthly sample excludes—

1. Contractor-built houses
2. Owner-built houses
3. Houses built to be rented
4. Out-of-scope types (such as nonresidential buildings)
5. HUD-coded manufactured houses (trailers).

### LIMITATIONS OF THE DATA

The following limitations of the data presented should be noted:

- a. Estimates of new houses sold include adjustments covering late reports for new houses sold prior to issuance of building permits in permit places and new houses sold prior to start in nonpermit areas. Estimates of new

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houses for sale do not include such adjustments. This is because new houses are never considered for sale prior to issuance of a building permit in permit places or prior to start in nonpermit areas. An adjustment is made to cover late reports for new houses sold after either the issuance of a building permit in permit places or the time of start in nonpermit areas. Failure to contact the respondent in the month of sale is responsible for most of these late reports.

Adjustments are made to account for the number of houses sold and reported in any month after the month of sale. These adjustments are used simultaneously to increase the number of new houses sold for the appropriate month and to decrease the number of new houses for sale at the end of the same month. As late reports are received for houses sold, the preliminary monthly reports which reflect adjustments are revised to show the estimates of houses sold and for sale based on more complete data.

- b. The number of houses for sale includes some houses which are not actively being marketed. The following houses are in this category:
  - 1. Model or sample houses and houses being used as temporary offices by builders;
  - 2. Houses involved in business bankruptcy and liquidation procedures as well as estate settlements.
- c. In general, houses are removed from the market by being sold. However, a small, but not negligible, number of houses are removed from the sales market for other reasons and are classified as out of scope. These removals include—
  - 1. Transfers from the sales market;
  - 2. Decisions by the builder-owner to move into the house;
  - 3. Abandonment of plans to build;
  - 4. Cancellation or expiration of permits.

## RELIABILITY OF DATA

The various estimates of new housing sales which are shown in this publication are based on sample surveys and may differ from statistics which would have been obtained from a complete census using the same schedules and procedures. An estimate based on a sample survey is subject to both sampling error and nonsampling error. The accuracy of a survey result is determined by the joint effects of these errors.

### Measures of Sampling Errors

Sampling error reflects the fact that only a particular sample was surveyed rather than the entire population. Each sample selected for the Housing Sales Survey is one

of a larger number of similar probability samples that, by chance, might have been selected under the same specifications. Estimates derived from the different samples would differ from each other. The standard error, or sampling error, of a survey estimate is a measure of the variation among the estimates from all possible samples and, thus, is a measure of the precision with which an estimate from a particular sample approximates the average from all possible samples.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. They are presented in the tables in the form of relative standard errors. The relative standard error equals the standard error divided by the estimated value to which it refers.

The sample estimate and an estimate of its standard error allow us to construct interval estimates with prescribed confidence that the interval includes the average result of all possible samples with the same size and design. For example, table 1 of this report shows an estimate of 907,000 houses sold in 1999. This estimate has a relative standard error of 2 percent. The standard error is 18,140 (907,000 multiplied by 0.02). This means that we are confident, with 2 chances out of 3 of being correct, that the average estimate from all possible samples of new housing sales during 1999 is between 888,860 and 925,140 units. To increase the probability to about 9 chances out of 10 that the interval contains the average value over all possible samples (this is called a 90-percent confidence interval), multiply 18,140 by 1.6, yielding limits of 877,976 and 936,024 (907,000 units plus or minus 29,024 units). The average estimate of new housing sales during 1999 may or may not be contained in any one of these computed intervals; but for a particular sample, one can say that the average estimate from all possible samples is included in the constructed interval with a specified confidence of 90 percent.

Ranges of 90-percent confidence intervals for estimated percent changes are shown in the monthly texts. When a range contains zero, it is uncertain whether there was an increase or decrease; that is, the change is not statistically significant.

### Nonsampling Errors

As calculated for this report, the coefficient of variation estimates sampling variation but does not measure all nonsampling error in the data. Nonsampling error consists of both a variance component and a bias component. Bias is the difference, averaged over all possible samples of the same size and design, between the estimate and the true value being estimated. Nonsampling errors are usually attributed to many possible sources: (1) coverage error—failure to accurately represent all population units in the sample, (2) inability to obtain information about all sample

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cases, (3) response errors, possibly due to definitional difficulties or misreporting, (4) mistakes in recording or coding the data obtained, and (5) other errors of coverage, collection and nonresponse, response, processing, or imputing for missing or inconsistent data. These nonsampling errors also occur in complete censuses. Although no direct measures of these errors have been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data to minimize their influence.

A potential source of bias is the upward adjustment of 3.3 percent made to account for houses that were sold in permit-issuing areas without permit authorization. Another source is the adjustment for houses sold prior to authorization and for late sales. The preliminary estimates of new housing sales are adjusted about 40 percent; the final estimates about 5 percent.

## SEASONAL ADJUSTMENT

Seasonal adjustment is the process of estimating and removing seasonal effects from a time series to better reveal certain non-seasonal features such as underlying trends and business cycles. Seasonal adjustment procedures estimate effects that occur in the same calendar month with similar magnitude and direction from year to year. In series whose seasonal effects come primarily from weather the seasonal factors are estimates of average weather effects for each month. It does not account for abnormal weather conditions or for year-to-year changes in weather. Seasonal factors are estimates based on present and past experience. Future data may show a different pattern.

The mechanics of seasonal adjustment involve breaking down a time series into trend-cycle, seasonal and irregular components.

**Trend-cycle.** The long-term tendencies of a series to grow or decline.

**Seasonal effects.** Effects that are reasonably stable in terms of timing, direction and magnitude. Possible causes include natural factors (the weather), administrative measures and social/cultural/religious traditions.

**Irregular component.** Anything not included in the trend-cycle or the seasonal effects (including trading-day or holiday effects). Its values are unpredictable as regards timing, impact, and duration. It can arise from sampling error, nonsampling error, unseasonable weather, natural disasters, strikes, etc.

Monthly time series that are totals of daily activities can be influenced by each calendar month's weekday composition. This influence is revealed when monthly values consistently depend on which days of the week occur five times in the month. For example, building permit offices are usually closed on Saturday and Sunday. Thus, the number of building permits issued in a given month is likely to be higher if the month contains a surplus of weekdays and lower if the month contains a surplus of weekend days. Recurring effects associated with individual days of the week are called trading-day effects.

Trading-day effects can make it difficult to compare time series values or to compare movements in one series with movements in another. For this reason, when estimates of trading-day effects are statistically significant, we adjust them out of the series. The removal of such estimates is referred to as trading-day adjustment.

Most of the seasonally adjusted series in this report are shown as seasonally adjusted annual rates (SAAR). The seasonally adjusted annual rate is the seasonally adjusted monthly value multiplied by 12. The benefit of the annual rate is that not only can we compare one monthly estimate with another, we can also compare monthly data to an annual total.

The seasonal adjustment indexes shown in this publication were developed using X-12-ARIMA. The X-12-ARIMA is a seasonal adjustment program developed at the U.S. Census Bureau. The program is based on the Bureau's earlier X-11 program and the X-11-ARIMA/88 program developed at Statistics Canada. For more information on X-12-ARIMA please see the X-12 website ([www.census.gov/pub/ts](http://www.census.gov/pub/ts)). Every month, each series is run through the X-12-ARIMA program. This procedure, known as concurrent seasonal adjustment, uses the current month estimate along with the past series to calculate that month's seasonal adjustment factor. Thus, as the unadjusted data are revised, so are the seasonal factors. Note the seasonal factors for private housing sales and for sale are the product of trading-day and seasonal factors. The total series for houses sold is the sum of the four component regional series. For simplicity we refer to these combined factors as the seasonal factors.



Table A-1. **Seasonal Indexes Used to Adjust Sales Series**

Period	Houses sold					New houses for sale	Months' supply at current sales rate	Median number of months on sales market <sup>2</sup>	
	Implicit seasonal index, total <sup>1</sup>	Northeast	Midwest	South	West			Houses sold	Houses for sale
<b>1997<sup>r</sup></b>									
January	88.2	76.4	75.4	93.4	93.1	100.4	108.7	115.8	106.5
February	103.4	107.0	97.1	103.4	107.6	98.4	95.6	112.5	110.0
March	117.0	102.3	124.5	116.4	118.2	98.6	84.7	101.4	110.8
April	112.9	109.1	123.3	110.2	114.4	99.6	87.0	102.2	106.8
May	112.1	110.7	117.5	108.9	112.0	99.4	88.1	94.4	100.4
June	107.4	110.7	113.5	106.8	105.8	99.9	90.8	90.5	93.9
July	102.9	101.0	104.4	103.0	101.4	100.1	95.8	94.0	91.8
August	106.0	114.4	101.2	106.4	105.3	99.2	92.6	91.0	92.6
September	95.7	106.5	91.4	95.4	93.3	100.5	102.9	91.6	93.5
October	93.0	90.2	95.5	92.4	92.6	101.2	107.4	94.2	94.5
November	84.7	85.3	87.3	84.0	82.9	100.1	118.3	102.2	96.8
December	77.2	82.9	69.7	79.9	73.6	102.0	128.6	110.4	101.1
<b>1998<sup>r</sup></b>									
January	88.1	77.3	75.6	93.4	93.0	100.2	109.2	115.3	106.9
February	103.9	110.9	97.9	103.8	107.4	98.4	94.6	112.2	110.3
March	116.3	102.9	120.8	115.4	118.3	98.8	84.9	102.0	110.6
April	113.6	110.1	126.4	110.4	114.4	99.6	86.9	102.6	106.2
May	110.9	110.4	113.7	108.7	111.7	98.9	88.0	94.2	100.8
June	107.9	109.4	114.2	106.8	106.4	100.4	90.6	90.3	93.7
July	102.7	101.4	100.8	103.6	101.2	99.9	95.5	93.8	92.5
August	106.4	114.5	106.2	106.6	105.0	99.2	92.6	90.7	91.9
September	94.4	103.2	92.0	94.9	93.2	100.5	103.1	91.9	93.3
October	92.7	87.5	96.4	91.9	92.7	101.1	107.3	94.4	94.6
November	84.4	86.3	85.9	84.3	83.1	100.1	118.1	102.0	96.7
December	77.1	84.8	71.3	79.9	73.4	102.0	129.0	110.9	100.6
<b>1999<sup>r</sup></b>									
January	87.6	78.6	71.8	93.4	93.3	99.7	110.1	115.2	107.7
February	104.8	112.0	99.4	104.4	107.6	98.4	94.5	112.2	110.4
March	117.1	102.8	122.5	115.2	118.2	99.3	84.4	102.3	110.8
April	113.5	110.5	118.9	110.3	114.4	99.6	86.8	102.5	107.0
May	111.2	109.8	119.2	108.5	110.8	99.0	87.9	93.6	100.1
June	108.9	108.8	115.5	106.9	106.7	100.5	90.4	90.4	93.5
July	102.6	101.9	102.6	104.1	101.5	99.8	95.4	93.5	92.5
August	106.3	114.1	102.9	106.6	104.7	99.4	92.7	90.5	91.7
September	94.8	101.7	95.0	94.5	93.3	100.5	103.2	92.4	92.8
October	91.4	86.6	93.7	91.3	93.0	100.6	107.3	94.4	95.1
November	85.3	87.5	86.0	84.6	83.2	100.6	117.8	101.7	96.6
December	76.9	85.4	68.9	79.8	73.7	101.8	129.1	111.6	101.6
<b>2000</b>									
January <sup>p</sup>	88.4	79.2	74.0	93.5	93.3	99.7	110.8	114.8	107.2

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>The implicit seasonal index is derived. It is the ratio of the unadjusted number of houses sold to the aggregate seasonally adjusted total; i.e., the sum of the seasonally adjusted figures for the four regions.

<sup>2</sup>Measured from month of start.

Table A-2. **Average Percentage Changes of Related Measures of Variability for New One-Family Houses Sold and For Sale**

Series	Average month-to-month percentage change					M7	Q	F
	O	CI	I	C	I/C			
New one-family houses sold.....	9.40	5.72	5.23	1.70	3.07	0.21	0.46	108.42
Northeast .....	19.61	15.45	15.20	1.98	7.69	0.72	1.25	9.21
Midwest.....	15.94	9.66	8.94	2.36	3.79	0.22	0.61	96.53
South.....	10.00	7.20	6.78	1.58	4.29	0.29	0.55	60.82
West .....	12.63	9.21	8.61	2.32	3.71	0.32	0.66	45.99
New one-family houses for sale.....	1.23	0.98	0.55	0.79	0.70	0.57	0.41	18.28
Months' supply at current sales rate....	9.51	6.06	5.51	1.86	2.96	0.21	0.41	103.97
Median number of months on sales market: .....								
New houses sold.....	10.31	8.52	8.09	1.94	4.17	0.40	0.65	33.32
New houses for sale.....	3.97	2.40	1.52	1.53	0.99	0.18	0.20	215.45

**Definitions of Summary Measures**

Summary measures of the seasonal, cyclical, and irregular components of the new one-family houses sold and for sale series provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. The following are brief descriptions of the measures shown in Table A-2:

**O** is the average month-to-month percentage change without regard to sign in the original not seasonally adjusted series.

**CI** is the average month-to-month percentage change without regard to sign in the seasonally adjusted figures.

**I** is the average month-to-month percentage change without regard to sign for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.

**C** is the average month-to-month percentage change without regard to sign for the cyclical component, which is a smooth, flexible moving average of the seasonally adjusted series.

**I/C** is the average relative month-to-month percentage change without regard to sign of the irregular component divided by the average relative month-to-month percentage change without regard to sign of the cyclical component. This serves as an indication of the series' relative smoothness (small values) or irregularity (large values).

**M7** is a function of the F-test assessing the significance of stable seasonality and the F-test assessing the significance of moving seasonality. It is 1 of the 11 quality monitoring statistics that X-12 ARIMA produces. M7 may range from 0 to 3 with an acceptance range from 0 to 1.

**Q** is a weighted average of M1-M11 (quality monitoring statistics from X-12-ARIMA). It is an indicator of the overall quality of the adjustment with an acceptance range of 0 to 1. Values from 1.0 to 1.2 may be accepted if other diagnostics indicate suitable adjustment quality.

**F** is an F-test value measuring the presence of stable seasonality. It is the quotient of two variances: (1) the between months variance and (2) the residual variance, which is mainly due to the irregular component. Higher F values may indicate the presence of stable seasonality. Lower values may indicate a lack of stable seasonality.

## Appendix B. Definitions

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**Type of financing.** The type of financing tabulated in this survey is the type reported at the time the original sales agreement was signed or deposit accepted. However, changes in the type of financing do occur between the original contract signing and final settlement. These changes are not reflected in the tables. Data covering FHA and VA types of financing tend to differ somewhat from that published directly by those agencies. For the actual number of FHA-insured and VA-guaranteed loans made for new houses at the time of final settlement, refer to the publications of the respective agencies. The data differ because of differences in time periods between signing of the original sales contract, the start of construction, and the insurance or guarantee of the mortgage, as well as sampling variability in this survey.

**Geographic regions.** The states in each standard census geographic region are — **Northeast**—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania; **Midwest** — Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; **South** — Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas; **West** — Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii.

**Median number of months on the sales market.** Houses sold prior to the month of start are excluded from the concept of “median number of months on the sales market.” The number of months on the sales market is the number of months from the month of start to the month of sale. The median number of months is calculated by assuming that all houses sold in a specific month were sold in the middle of the month but that starts reported each month were uniformly spread throughout the month. The median number of months is the difference in time between the mid-month of sale and the day the 50th percentile was started with the assumed uniform spread.

Houses for sale but not started are excluded from the concept of “median number of months on the sales market.” The number of months on the sales market is the number of months from the month of start or completion to the end of the latest month shown for sale. It is assumed that starts for houses for sale each month were

uniformly spread throughout the month. The median number of months is the difference in time between the end of the month for which the number of houses for sale is shown and the day that the 50th percentile of starts was started. The same assumptions are made regarding completions.

**New privately owned one-family houses for sale.** A house is considered for sale when (1) a permit to build has been issued in permit-issuing places or work has begun on the footings or foundation in nonpermit areas, (2) a sales contract has not been signed nor a deposit accepted, and (3) the sales price includes both the house and the land. If the owner of the land is having a house built for his own use, the house is categorized as either contractor-built or owner-built, depending on whether he hires a general contractor or acts as his own contractor.

**New privately owned one-family houses sold.** A house is considered sold when either a sales contract has been signed or a deposit accepted, regardless of the stage of construction of the house. This survey does not follow through to the completion of the sales transaction, so even if the transaction is not finalized, the house is still considered sold.

**Sales price.** The sales price used in this survey is the price agreed upon between the purchaser and the seller at the time the first sales contract is signed or deposit made. It includes the price of the improved lot. The sales price does not reflect any subsequent price changes resulting from change orders or from any other factors affecting the price of the house. Furthermore, the sales price does not include the cost of any extras or options paid for in cash by the purchaser or otherwise not included in the original sales price reported. The median sales price is the sales price of the house which falls on the middle point of the total number of houses sold. Half of the houses sold have a sales price less than the median; half have a greater price.

Changes in the median sales price reflect the changing proportion of houses of different size, locations, etc., as well as any changes in the sales price of houses of identical characteristics.