

Housing Completions

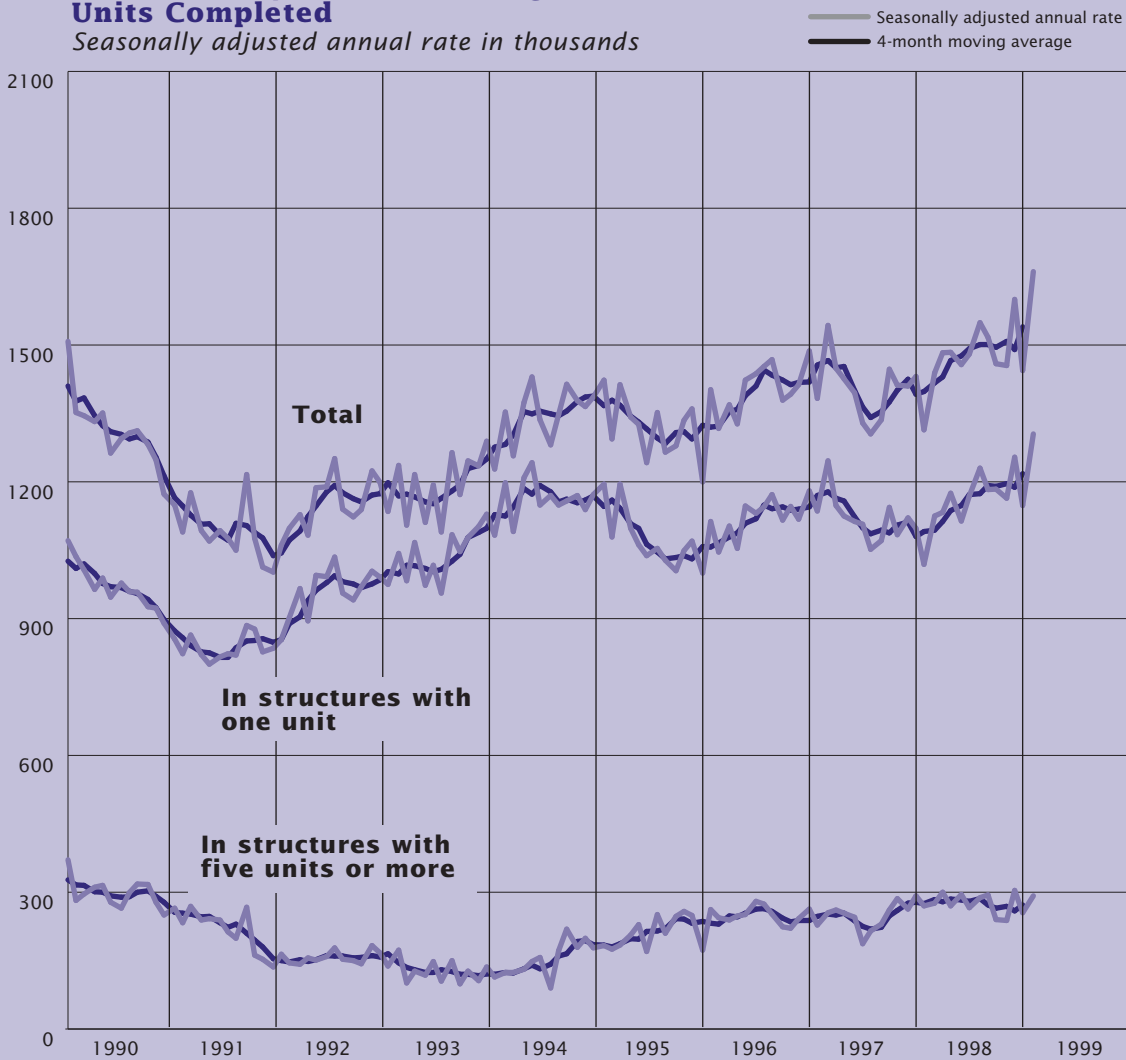
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Current Construction Reports

Seasonally adjusted data back to January 1996 have been revised. See the appendix for a description of seasonal adjustment and new seasonal factors.

New Privately Owned Housing Units Completed

Seasonally adjusted annual rate in thousands



Note: Total includes units started in structures with two to four units.

Source: U.S. Census Bureau, Housing Completions.

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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SUMMARY OF FINDINGS

This report provides monthly statistics on the number of new privately owned housing units completed and under construction. This report is released jointly by the Bureau of the Census and the U.S. Department of Housing and Urban Development.

Privately owned housing units were completed in January 1999 at a seasonally adjusted annual rate of 1,661,000. This is 15 (± 6) percent above the revised December 1998 rate of 1,444,000, and is 26 (± 7) percent above the revised January 1998 rate of 1,314,000.

The January 1999 rate of single-family housing completions was 1,305,000. This is 14 (± 6) percent above the revised December 1998 rate of 1,148,000. The rate for units in buildings with five units or more was 292,000, and the rate for units in buildings with two to four units was 64,000.

The seasonally adjusted estimate of housing units under construction at the end of January 1999 was 1,008,000. This is 1 (± 1) percent above the revised December 1998 estimate of 999,000. Of these, 695,000 were single-family structures, 286,000 were in buildings with five units or more, and 27,000 were in buildings with two to four units.

EXPLANATION

The statistics in this report are estimated from sample surveys and are subject to sampling variability as well as nonsampling error including bias and variance from response, nonreporting, and undercoverage. Estimated average relative standard errors of preliminary data are

shown in the tables. Whenever a statement such as “2 (± 3) percent above” appears in the text, this indicates the range (-1 to +5 percent) in which the actual percent change is likely to have occurred. All ranges given for percent changes are 90-percent confidence intervals and account only for sampling variability. If a range contains zero, it is unclear whether there was an increase or decrease; that is, the change is not statistically significant. For any comparison cited without a confidence interval, the change is statistically significant.

In interpreting changes in the seasonally adjusted rates of housing completions, note that month-to-month changes may reflect movements which may be irregular. It may take 4 months to establish an underlying trend for total completions.

The appendix in the January 1999 issue of this report will include explanations of confidence intervals and sampling variability. On average, the preliminary seasonally adjusted estimates of total housing completions are revised about ± 1 percent.

Housing completions and under construction statistics do not include mobile home units.

HISTORICAL DATA

Housing completions data have been collected since 1968. Housing starts are available from 1889 to the present date. Historical data for all these series are available from the Residential Construction Branch, Manufacturing and Construction Division, Bureau of the Census, Washington, DC 20233-6900. Telephone: 301-457-1321.

Table 1. New Privately Owned Housing Units Completed

[Thousands of units. Detail may not add to total because of rounding]

Period	Total	In structures with—				Inside MSAs ¹	Outside MSAs ¹	North-east	Midwest	South	West
		1 unit	2 units	3 and 4 units	5 units or more						
ANNUAL DATA											
1989	1,422.8	1,026.3	24.1	34.6	337.9	1,181.2	241.7	218.8	267.1	549.4	387.5
1990	1,308.0	966.0	16.5	28.2	297.3	1,060.2	247.7	157.7	263.3	510.7	376.3
1991	1,090.8	837.6	16.9	19.7	216.6	862.1	228.7	120.1	240.4	438.9	291.3
1992	1,157.5	963.6	15.1	20.8	158.0	909.5	248.0	136.4	268.4	462.4	290.3
1993	1,192.7	1,039.4	9.5	16.7	127.1	943.0	249.8	117.6	273.3	512.0	290.0
1994	1,346.9	1,160.3	12.1	19.5	154.9	1,086.3	260.6	123.4	307.1	580.9	335.5
1995	1,312.6	1,065.5	14.8	19.8	212.4	1,065.0	247.6	126.9	287.9	581.1	316.7
1996	1,412.9	1,128.5	13.6	19.5	251.3	1,163.4	249.4	125.1	304.5	637.1	346.2
1997	1,400.5	1,116.4	13.6	23.4	247.1	1,152.8	247.7	134.0	295.9	634.1	336.4
1998 ^r	1,474.4	1,159.6	16.2	24.4	274.3	1,228.9	245.5	137.3	305.2	671.5	360.4
MONTHLY DATA											
Not Seasonally Adjusted											
1998:											
January	91.5	71.3	0.8	1.0	18.4	77.4	14.1	9.5	17.9	40.7	23.3
February	97.7	76.8	1.2	1.9	17.9	81.5	16.2	8.3	20.0	45.7	23.8
March	111.2	85.5	1.1	3.0	21.6	91.5	19.7	8.0	23.9	50.6	28.7
April	115.3	90.8	1.3	2.1	21.1	96.8	18.4	9.2	25.4	56.6	24.0
May	118.9	89.9	1.4	2.5	25.0	100.6	18.3	11.4	25.5	54.5	27.5
June	127.7	100.5	1.5	1.8	23.9	106.1	21.6	12.0	26.9	59.0	29.9
July	133.6	103.1	0.9	1.8	27.7	113.0	20.6	10.9	30.2	60.0	32.4
August	138.6	104.6	1.8	2.0	30.2	116.6	22.0	12.8	28.2	64.5	33.1
September	130.9	107.6	1.8	1.4	20.1	108.0	22.8	14.4	25.0	59.2	32.3
October	133.3	108.1	1.8	2.5	21.0	109.3	24.0	12.6	27.5	58.5	34.7
November ^r	139.0	111.5	1.3	2.2	23.9	115.7	23.2	13.6	27.2	61.7	36.4
December ^r	136.8	109.9	1.3	2.3	23.3	112.4	24.4	14.6	27.4	60.5	34.3
1999:											
January ^p	115.9	91.3	0.7	3.9	20.1	98.9	17.0	9.2	20.6	57.5	28.6
Seasonally Adjusted Annual Rate											
1996: ^r											
January	1,402	1,113	27		262	(NA)	(NA)	116	330	596	360
February	1,317	1,046	27		244	(NA)	(NA)	129	236	600	352
March	1,369	1,103	27		239	(NA)	(NA)	104	295	624	346
April	1,327	1,054	25		248	(NA)	(NA)	118	308	575	326
May	1,423	1,147	25		251	(NA)	(NA)	109	288	664	362
June	1,437	1,131	26		280	(NA)	(NA)	131	300	652	354
July	1,453	1,145	34		274	(NA)	(NA)	110	345	652	346
August	1,468	1,172	44		252	(NA)	(NA)	126	317	675	350
September	1,379	1,116	39		224	(NA)	(NA)	129	282	604	364
October	1,392	1,146	25		221	(NA)	(NA)	135	276	653	328
November	1,413	1,118	53		242	(NA)	(NA)	143	337	625	308
December	1,487	1,180	44		263	(NA)	(NA)	130	327	679	351
1997: ^r											
January	1,383	1,136	19		228	(NA)	(NA)	122	330	587	344
February	1,543	1,246	42		255	(NA)	(NA)	150	334	702	357
March	1,449	1,148	40		261	(NA)	(NA)	212	274	638	325
April	1,426	1,125	47		254	(NA)	(NA)	121	301	653	351
May	1,395	1,113	37		245	(NA)	(NA)	149	286	610	350
June	1,329	1,107	35		187	(NA)	(NA)	127	276	593	333
July	1,305	1,052	38		215	(NA)	(NA)	136	268	587	314
August	1,336	1,071	35		230	(NA)	(NA)	119	304	583	330
September	1,447	1,144	42		261	(NA)	(NA)	135	298	703	311
October	1,412	1,084	42		286	(NA)	(NA)	119	309	646	338
November	1,410	1,121	26		263	(NA)	(NA)	125	294	653	338
December	1,431	1,098	41		292	(NA)	(NA)	121	300	657	353
1998: ^r											
January	1,314	1,019	25		270	(NA)	(NA)	136	273	575	330
February	1,439	1,125	38		276	(NA)	(NA)	119	326	650	344
March	1,483	1,133	50		300	(NA)	(NA)	120	349	642	372
April	1,484	1,175	39		270	(NA)	(NA)	135	322	699	328
May	1,457	1,114	48		295	(NA)	(NA)	133	319	678	327
June	1,480	1,169	45		266	(NA)	(NA)	134	310	686	350
July	1,549	1,230	31		288	(NA)	(NA)	133	337	711	368
August	1,517	1,183	40		294	(NA)	(NA)	151	296	702	368
September	1,459	1,184	35		240	(NA)	(NA)	150	255	685	369
October	1,455	1,164	53		238	(NA)	(NA)	131	288	661	375
November	1,600	1,254	42		304	(NA)	(NA)	147	303	734	416
December	1,444	1,148	41		255	(NA)	(NA)	148	295	632	369
1999:											
January ^p	1,661	1,305	64		292	(NA)	(NA)	133	316	811	401
AVERAGE RELATIVE STANDARD ERRORS²											
Annual (percent) . .	1	1	7	10	3	1	4	3	3	2	1
Monthly (percent) . .	2	3	20	22	7	2	7	7	7	4	3

NA Not available. ^pPreliminary. ^rRevised.¹Metropolitan statistical areas.²Average Relative Standard Errors (Avg. RSE): Annual—Avg. RSE for the last 2 years; Monthly—Avg. RSE for the latest 6-month period (January through June or July through December).

Table 2. New Privately Owned Housing Units Completed by Location and Type of Structure

[Thousands of units. Detail may not add to total because of rounding]

Period	United States			Inside MSAs ¹			Outside MSAs ¹			Northeast			Midwest			South			West			
	Total ²	In structures with—		Total ²	In structures with—		Total ²	In structures with—		Total ²	In structures with—		Total ²	In structures with—		Total ²	In structures with—		Total ²	In structures with—		
		1 unit	5 units or more		1 unit	5 units or more		1 unit	5 units or more		1 unit	5 units or more		1 unit	5 units or more		1 unit	5 units or more		1 unit	5 units or more	1 unit
ANNUAL DATA																						
1979	1,871	1,301	445	1,332	858	382	539	443	63	188	135	43	415	294	95	762	535	187	506	337	120	
1980	1,502	957	426	1,079	633	359	423	324	67	146	100	38	274	170	80	696	455	196	386	233	113	
1981	1,266	819	336	888	530	278	377	289	57	127	87	31	218	140	57	626	408	165	294	183	82	
1982	1,006	632	293	708	409	241	297	223	52	120	79	35	143	92	38	539	340	156	203	121	64	
1983	1,390	924	374	1,074	674	326	316	249	49	139	106	25	201	142	46	746	476	220	305	200	83	
1984	1,652	1,025	515	1,317	771	460	336	255	55	168	129	30	221	156	50	867	508	298	396	233	137	
1985	1,703	1,072	534	1,422	853	491	281	220	43	214	168	33	230	151	65	812	514	254	447	239	182	
1986	1,756	1,120	550	1,502	918	513	254	202	37	254	193	47	270	170	84	764	505	226	469	253	193	
1987	1,669	1,123	475	1,420	917	444	248	206	30	257	196	47	302	201	86	660	467	171	449	259	170	
1988	1,530	1,085	389	1,286	876	365	244	208	24	250	188	50	280	191	76	595	457	121	405	248	142	
1989	1,423	1,026	338	1,181	823	312	242	203	25	219	159	48	267	191	62	549	420	112	387	257	115	
1990	1,308	966	297	1,060	759	267	248	207	30	158	127	23	263	195	57	511	389	109	376	255	108	
1991	1,091	838	217	862	642	194	229	196	22	120	100	14	240	185	45	439	348	81	291	205	76	
1992	1,158	964	158	910	752	133	248	212	25	136	114	18	268	218	40	462	400	52	290	232	49	
1993	1,193	1,039	127	943	818	106	250	222	21	118	105	10	273	232	33	512	456	49	290	247	35	
1994	1,347	1,160	155	1,086	929	135	261	232	20	123	113	7	307	255	42	581	507	64	336	285	42	
1995	1,313	1,066	212	1,065	848	191	248	217	21	127	108	16	288	232	44	581	472	99	317	253	54	
1996	1,413	1,129	251	1,163	913	226	249	215	25	125	108	14	304	245	48	637	507	120	346	269	69	
1997	1,400	1,116	247	1,153	904	221	248	212	26	134	115	14	296	236	47	634	506	118	336	259	68	
1998 [*]	1,474	1,160	274	1,229	951	248	245	208	26	137	116	16	305	244	47	671	517	142	360	283	69	
QUARTERLY DATA																						
1995:	1st quarter	291	246	37	233	194	33	59	52	4	30	26	3	62	51	8	130	110	18	69	58	9
	2nd quarter	318	258	51	258	207	45	60	52	6	29	25	3	75	59	14	140	114	22	74	60	12
	3rd quarter	346	272	65	284	219	59	62	53	6	33	27	6	79	61	15	152	121	28	82	64	16
	4th quarter	357	289	59	289	229	54	67	60	5	35	30	4	72	62	7	159	126	30	90	71	17
1996:	1st quarter	293	235	52	243	192	47	50	44	5	24	21	3	56	45	9	136	108	26	77	61	15
	2nd quarter	342	270	66	285	222	59	57	48	7	29	25	3	73	55	16	156	124	30	84	66	17
	3rd quarter	382	301	71	314	243	64	69	59	7	32	28	3	88	68	16	169	134	32	94	71	20
	4th quarter	394	322	63	321	257	57	74	65	6	40	34	5	87	76	8	177	141	32	91	71	17
1997:	1st quarter	310	251	51	255	204	45	55	47	5	32	27	5	61	48	10	143	120	20	74	56	16
	2nd quarter	338	271	57	279	221	51	59	51	6	32	28	3	70	57	10	152	121	28	83	65	16
	3rd quarter	363	287	66	302	235	59	61	52	7	35	30	(S)	81	63	15	163	128	32	84	66	16
	4th quarter	389	307	73	316	244	65	72	63	7	35	31	(S)	83	68	12	176	136	38	94	72	20
1998:	1st quarter	300	234	58	250	193	52	50	40	6	26	22	3	62	47	10	137	104	31	76	60	15
	2nd quarter	362	281	70	304	233	63	58	49	7	33	27	4	78	61	13	170	128	39	81	65	14
	3rd quarter	403	315	78	338	260	71	65	56	8	38	33	4	83	65	16	184	142	39	98	76	20
	4th quarter [*]	409	329	68	337	266	63	72	63	6	41	34	5	82	70	8	181	144	33	105	81	22
AVERAGE RELATIVE STANDARD ERRORS³																						
Annual	(percent)	1	1	3	1	1	3	4	4	13	3	2	14	3	3	10	2	2	4	1	1	3
Quarterly	(percent)	2	2	5	2	2	5	5	5	19	4	3	13	4	4	17	2	3	6	2	2	7

^{*}Revised. S Withheld because estimate did not meet publication standards on the basis of response rate, associated standard error, or a consistency review.

¹Metropolitan statistical areas.

²Includes units completed in structures with two to four units.

³Average Relative Standard Errors (Avg. RSE): Annual—Avg. RSE for the last 2 years; Quarterly—Avg. RSE for the latest 2-quarter period (quarter 1 through quarter 2 or quarter 3 through quarter 4).

Table 3. New Privately Owned Housing Units Under Construction

[Thousands of units. Detail may not add to total because of rounding]

Period	Total	In structures with—				Inside MSAs ¹	Outside MSAs ¹	North-east	Midwest	South	West
		1 unit	2 units	3 and 4 units	5 units or more						
ANNUAL DATA											
1989	850.3	535.1	11.9	25.1	278.1	686.7	163.6	158.8	145.5	282.1	263.9
1990	711.4	449.1	10.9	15.1	236.3	553.9	157.5	121.6	133.4	242.3	214.1
1991	606.3	433.5	9.1	14.5	149.2	458.4	147.9	103.9	122.4	208.5	171.6
1992	612.4	472.7	5.6	11.3	122.8	453.1	159.4	81.4	137.8	228.4	164.8
1993	680.1	543.0	6.5	12.4	118.2	521.0	159.1	89.3	154.4	265.4	170.9
1994	762.2	557.8	9.1	12.9	182.5	597.6	164.5	96.3	173.5	312.1	180.3
1995	775.9	547.2	8.4	12.7	207.7	620.1	155.8	86.3	172.0	331.4	186.3
1996	792.3	550.0	9.0	19.1	214.3	629.9	162.4	85.2	178.0	337.6	191.4
1997	846.7	554.6	11.2	20.7	260.2	683.5	163.2	87.1	181.9	364.8	213.0
1998 ^f	970.7	658.9	8.4	20.8	282.6	794.8	175.8	98.7	200.7	429.0	242.2
MONTHLY DATA											
Not Seasonally Adjusted											
1998:											
January	846.0	556.0	11.1	20.8	258.1	683.9	162.1	85.8	178.6	366.9	214.7
February	847.5	557.6	10.7	21.1	258.1	688.8	158.7	86.9	175.9	371.2	213.5
March	867.6	578.6	10.9	19.8	258.4	710.2	157.5	89.7	174.9	383.4	219.7
April	895.5	604.5	10.9	19.9	260.3	731.3	164.2	92.6	181.6	390.7	230.6
May	918.1	628.4	11.3	19.9	258.5	747.9	170.3	95.0	184.9	400.8	237.5
June	948.7	656.4	11.3	21.0	260.0	770.0	178.7	96.8	191.0	412.4	248.3
July	970.1	674.3	11.6	20.9	263.3	786.6	183.5	101.7	191.3	423.1	254.1
August	976.8	682.9	11.2	21.9	260.8	791.2	185.6	101.5	193.8	425.1	256.4
September	984.7	686.8	10.0	21.3	266.7	798.0	186.7	100.1	197.9	427.1	259.7
October	1,003.9	689.0	9.4	21.7	283.9	818.5	185.4	103.6	207.4	437.6	255.3
November ^f	988.0	678.4	9.0	22.2	278.4	805.5	182.5	102.1	203.2	436.0	246.6
December ^f	970.7	658.9	8.4	20.8	282.6	794.8	175.8	98.7	200.7	429.0	242.2
1999:											
January ^p	961.0	650.2	8.3	19.0	283.6	789.9	171.1	97.8	193.2	427.0	242.9
Seasonally Adjusted											
1996: ^f											
January	803	570	20		213	(NA)	(NA)	87	176	345	195
February	793	563	19		211	(NA)	(NA)	82	175	338	198
March	814	581	20		213	(NA)	(NA)	88	179	349	198
April	827	592	22		213	(NA)	(NA)	88	180	354	205
May	832	592	26		214	(NA)	(NA)	90	182	357	203
June	826	593	26		207	(NA)	(NA)	89	180	354	203
July	824	591	28		205	(NA)	(NA)	90	181	352	201
August	820	591	24		205	(NA)	(NA)	89	182	347	202
September	824	590	24		210	(NA)	(NA)	90	183	353	198
October	821	585	26		210	(NA)	(NA)	89	182	349	201
November	829	586	28		215	(NA)	(NA)	86	183	355	205
December	814	572	28		214	(NA)	(NA)	86	179	350	199
1997: ^f											
January	818	574	29		215	(NA)	(NA)	89	177	352	200
February	817	573	27		217	(NA)	(NA)	85	180	351	201
March	811	565	27		219	(NA)	(NA)	82	178	349	202
April	815	565	27		223	(NA)	(NA)	84	178	351	202
May	817	564	26		227	(NA)	(NA)	82	180	352	203
June	827	563	26		238	(NA)	(NA)	81	183	359	204
July	836	569	25		242	(NA)	(NA)	82	184	363	207
August	837	567	27		243	(NA)	(NA)	83	181	367	206
September	842	571	25		246	(NA)	(NA)	83	181	369	209
October	853	575	28		250	(NA)	(NA)	83	183	375	212
November	863	578	29		256	(NA)	(NA)	87	182	376	218
December	869	578	31		260	(NA)	(NA)	88	183	377	221
1998: ^f											
January	887	595	32		260	(NA)	(NA)	90	188	384	225
February	906	610	33		263	(NA)	(NA)	92	195	391	228
March	911	617	32		262	(NA)	(NA)	95	189	398	229
April	911	618	32		261	(NA)	(NA)	94	190	394	233
May	916	626	32		258	(NA)	(NA)	96	187	396	237
June	930	639	32		259	(NA)	(NA)	97	188	403	242
July	938	642	33		263	(NA)	(NA)	97	185	410	246
August	939	644	32		263	(NA)	(NA)	97	184	411	247
September	946	648	31		267	(NA)	(NA)	97	187	414	248
October	968	659	30		279	(NA)	(NA)	100	193	428	247
November	971	667	30		274	(NA)	(NA)	98	195	434	244
December	999	688	29		282	(NA)	(NA)	101	202	444	252
1999:											
January ^p	1,008	695	27		286	(NA)	(NA)	102	204	447	255
AVERAGE RELATIVE STANDARD ERRORS²											
End of period (percent) . .	1	2	8	15	3	1	4	5	4	2	2

NA Not available. ^pPreliminary. ^fRevised.¹Metropolitan statistical areas.²Average Relative Standard Errors: Average for the latest 6-month period (January through June or July through December).

Appendix

DEFINITIONS

One-unit structures are defined as completed when all finish flooring has been installed (or carpeting, if used in place of finish flooring). If the building is occupied before all construction is finished, it is classified as completed at the time of occupancy. In buildings with two or more housing units, all the units in the building are counted as completed when 50 percent or more of the units are occupied or available for occupancy. All units in a residential building are counted as started when excavation is started for the footings or foundations of the building. Beginning with statistics for September 1992, estimates of housing starts include units in residential structures being totally rebuilt on an existing foundation. Housing units are counted as under construction between start and completion, as defined above.

A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. Separate living quarters are those in which the occupants do not live and eat with any other persons in the structure and which have direct access from the outside of the building or through a common hall which is used or intended to be used by the occupants of another unit or by the general public.

A housekeeping residential building is one consisting primarily of housing units. New housing units exclude group quarters (such as dormitories and rooming houses), transient accommodations (such as transient hotels, motels, and tourist courts), mobile homes (trailers), moved or relocated buildings, and housing units created in an existing residential or nonresidential structure. However, in a building combining substantial residential and nonresidential floor areas, every effort is made to include the residential units in these statistics, even though the primary function of the entire building is for nonresidential purposes.

Housing units, as distinguished from mobile homes, include conventional “stick-built” units, prefabricated, panelized, componentized, sectional, and modular units.

Housing completions exclude dormitories and rooming houses, and transient accommodations such as transient hotels, motels, and tourist courts. Mobile homes (trailers) are also excluded.

The standard Census geographic regions are used in the tables of this report. States contained in each region are as follows: **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.

The distribution of housing completions between units inside and outside metropolitan statistical areas (MSAs) is based on definitions published by the Office of Management and Budget in *Metropolitan Statistical Areas*. Data for the period beginning January 1994 are based on the 1992 definitions, as amended June 1993; data for the period January-December 1993 are based on the 1992 definitions; data for January 1984-December 1992 are based on the 1974 definitions, as amended June 1983; data for January 1976-December 1983 are based on the 1974 definitions, as amended August 1975; data for January 1975-December 1975 are based on the 1967 definitions, as amended April 1974; data for January 1974-December 1974 are based on the 1967 definitions, as amended November 1973; data for April 1973-December 1973 are based on the 1967 definitions, as amended February 1973; data for April 1968-March 1973 are based on the 1967 definitions.

SAMPLE DESIGN AND SELECTION

The sample design for the Survey of Construction (SOC) is a stratified multistage cluster design derived from the Current Population Survey (CPS), 1980 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 CPS according to metropolitan status and the 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 in areas which do not issue permits. One of the CPS selected areas was chosen 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 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 sample. Approximately 840 permit-issuing places were selected, about 820 remain in the sample.

Monthly, census field representatives sample permits from these permit-issuing places. They select permits for one-to-four-unit buildings with probability proportional to the number of units at an overall rate of 1 in 40. All permits for buildings with five units or more are selected.

Within each of the 169 areas, the land not covered by building permit 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 areas and 1 out of 600 was selected from the strata with the smaller areas. Monthly, census field representatives intensively canvassed about 130 selected land areas looking for all housing units 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.

HOUSING COMPLETIONS AND UNDER CONSTRUCTION COMPILATION

The housing completions and under construction series is a product of the housing starts survey and the compilation is basically the same as that used for housing starts.

1. An estimate is made monthly of the number of housing units for which building permits have been issued in all 19,000 permit-issuing places. The estimate of building permit authorizations is based on a sample of 8,300 of these 19,000 jurisdictions.
2. For each permit sampled in the selected permit-issuing places, inquiries are made of the owners or builders of units that are under construction to determine if these units have been completed. For those units not completed, inquiries are made in successive months to determine when they are completed. Ratios

are then calculated (by type of structure) of the number of units completed and under construction to the number of units covered by permits. Separate ratios are calculated for units authorized from permits of that month and each preceding month. These ratios are then applied to the appropriate estimate of the number of units authorized by permits in the corresponding months to provide estimates of the total number of units completed and under construction for each month of authorization.

3. Having produced estimates of the number of units completed and under construction with permit authorization, an upward adjustment of 3.3 percent is made to the number of one-unit structures (single-family houses) to account for those units built within permit-issuing areas but without permit authorization. (A study spanning a four-year period indicated that permits were obtained for all buildings with two housing units or more.) For housing completions, upward imputations are also made to account for late reports.
4. The total estimates of housing completions and under construction include estimates of the number of units completed and under construction in areas where building permit systems do not exist. All buildings within the sampled nonpermit areas are followed up for completion information provided by the owners, builders, or site inspection and weighted appropriately.

HOUSING COMPLETIONS AND UNDER CONSTRUCTION, BY TYPE OF STRUCTURE

A total of 14 different sets of rates that change from month to month are utilized to calculate the number of housing units completed and under construction (by type of structure) in permit places. Eight sets of rates are used for one-unit structures: separate sets of rates for metropolitan and nonmetropolitan areas within each of the four regions. For structures with five units or more, separate sets of rates are used for each of the four regions. Single sets of rates are used for all regions for structures with two units and for structures with three and four units.

Housing completions and under construction estimates (by type of structure) in nonpermit areas are calculated directly in the estimating procedure described above.

RELIABILITY OF DATA

The various estimates of privately owned housing units completed and under construction 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 this survey is one of a large 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 average 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, suppose Table 1 of this report showed that an estimated 110,000 units in one-unit structures were completed in a particular month. Further, suppose that the average relative standard error of this estimate is 3 percent. Multiplying 110,000 by 0.03, we obtain 3,300 as the standard error. This means that we are confident, with 2 chances out of 3 of being correct, that the average estimate from all possible samples of one-unit structures completed during the particular month is between 113,300 and 106,700 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 3,300 by 1.6 yielding limits of 115,280 and 104,720 (110,000 units plus or minus 5,280 units). The average estimate of one-unit structures completed during the specified month 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 text. When the range of the confidence interval contains zero, it is unclear 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 cases, (3) response errors, possibly due to definitional difficulties or mis-reporting, (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.

As described in the section, "Housing Completions and Under Construction Compilation," a potential source of bias is the upward adjustment of 3.3 percent made to account for one-unit structures completed and under construction in permit-issuing areas without permit authorization. Another source is the imputation for late-reported completions. The final estimates of housing units completed are imputed about 1 percent.

SEASONAL ADJUSTMENT

For analyzing general trends in the economy, seasonally adjusted data are usually preferred since seasonal adjustment eliminates the effects of changes that normally occur at about the same time and in about the same magnitude every year. For example, suppose that the normal month-to-month change in an unadjusted series between February and March was an increase of 20 percent. Then an increase in the unadjusted series of less than 20 percent would be viewed as a decrease in the seasonally adjusted series; an increase of exactly 20 percent would be viewed as no change in the adjusted series; and an increase of more than 20 percent would be viewed as an increase in the adjusted series.

The recurring changes in a series that are removed by seasonal adjustment result from such factors as normal changes in weather and differing lengths of months. It should be emphasized that seasonal adjustment does not account for abnormal weather conditions or for year-to-year changes in weather.

The seasonally adjusted housing completions series in this report is shown as a seasonally adjusted annual rate (SAAR). A SAAR is the seasonally adjusted monthly rate multiplied by 12. The seasonal adjustment indexes shown in this publication have been developed using the X-11-ARIMA, a modification of the X-11 Census Method II seasonal adjustment program. The computation of the monthly seasonal indexes uses trading-day adjustment factors to account for different patterns of activity among days of the week and the variation in the number of times each day of the week occurs in each particular month.

The X-11-ARIMA program also gives summary statistics which are used in determining the adequacy of the seasonal adjustment. These statistics are summarized in Table A-3. A brief definition of each statistic is given below the table. A description of the X-11-ARIMA version appears in "The X-11-ARIMA Seasonal Adjustment Method," by Estela Bee Dagum, Statistics Canada. This publication is available from Statistics Canada, 25-A Coats Building, Ottawa, Ontario, K1A 0T6. A description of the test for the impact of trading days is found in Bureau of the Census Technical Paper No. 12, "Estimating Trading-Day Variation in Monthly Economic Time Series" (1967). This paper is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

An assumption underlying the seasonal adjustment process is that the original series can be separated into a seasonal component, a trading-day component, a trend-cycle component, and an irregular component. The seasonally adjusted series consists of the trend-cycle and irregular components taken together. The trend-cycle component includes the long-term trend and the business cycle. The irregular component is made up of residual variations, such as the sudden impact of political events and the effects of strikes, unusual weather conditions, reporting and sampling errors, etc.

Seasonal indexes are developed concurrently each month for total private housing completions and under construction, by region and by type of structure. With the concurrent seasonal adjustment procedure, each series is run through the X-11-ARIMA program each month as new data become available. The seasonally adjusted U.S. total

is the sum of six seasonally adjusted components: single family structures in each of the four regions, U.S. total for two-to-four-unit structures, and U.S. total for structures with five units or more. Also, the unadjusted data for the four regions are seasonally adjusted and subsequently modified so that the seasonally adjusted U.S. total derived from the regions equals the seasonally adjusted U.S. total derived from the structures. The seasonal indexes for private housing completions shown in Table A-1 and for housing under construction in Table A-2 include trading-day adjustment factors which were estimated internally by the regression routine.

CENSUS BUREAU CONSTRUCTION REPORTS AND RELATED PUBLICATIONS

Current Construction Reports, Series C20: *Housing Starts* (monthly).

Current Construction Reports, Series C21: *New Residential Construction in Selected Metropolitan Statistical Areas* (quarterly).

Current Construction Reports, Series C25: *New One-Family Houses Sold and For Sale* (monthly).

Current Construction Reports, Series C30: *Value of New Construction Put in Place* (monthly).

Current Construction Reports, Series C50: *Expenditures for Residential Improvements and Repairs* (quarterly).

Table A-1. Seasonal Indexes Used to Adjust Housing Units Completed

Period	United States implicit index ¹	In structures with—						All units			
		1 unit				2 to 4 units	5 units or more	North-east	Midwest	South	West
		North-east	Midwest	South	West						
1996^f											
January	85.0	87.4	81.6	85.9	88.1	86.4	81.8	87.0	76.1	88.5	86.4
February	82.9	87.0	74.8	84.3	84.9	91.4	81.8	87.0	78.6	85.2	85.8
March	90.4	76.9	79.8	98.7	91.8	107.7	85.8	75.3	80.0	93.9	91.4
April	92.2	84.2	90.5	93.1	92.9	105.2	93.9	91.3	90.7	97.0	90.6
May	96.7	90.9	93.8	96.8	98.8	97.8	98.8	100.8	95.0	97.1	98.6
June	105.1	103.2	104.9	104.5	102.7	91.6	111.2	96.9	108.8	101.8	101.1
July	104.3	101.4	101.9	103.3	100.8	104.4	113.3	100.0	101.8	101.4	104.5
August	109.6	105.2	108.3	106.1	106.2	108.4	124.1	104.7	115.2	109.5	108.1
September	106.2	112.2	114.5	102.1	107.3	106.5	101.8	109.4	117.3	103.0	105.3
October	112.0	118.8	121.0	110.8	110.0	95.1	105.4	118.1	118.6	110.6	110.4
November	104.2	115.4	114.8	101.1	104.5	99.7	94.5	112.9	106.2	100.0	104.7
December	114.5	124.0	115.2	115.1	113.9	104.4	110.3	123.6	110.9	114.6	115.2
1997^f											
January	83.0	82.7	82.2	81.6	88.1	86.5	81.6	84.8	78.0	86.6	86.3
February	81.5	83.5	72.5	84.7	82.4	92.7	78.6	83.9	73.9	83.9	83.2
March	90.8	79.0	80.2	99.5	92.0	110.6	85.6	74.2	81.4	95.4	91.4
April	93.2	80.1	91.0	96.2	92.6	106.2	93.6	86.5	92.9	98.0	90.3
May	97.7	95.4	93.8	98.1	99.1	98.2	100.3	102.6	96.0	96.1	99.3
June	102.8	105.0	104.5	100.3	102.6	88.5	109.4	100.3	105.5	101.0	100.8
July	103.8	100.2	101.9	102.6	100.8	100.7	114.4	99.5	108.1	101.2	104.5
August	108.9	102.9	107.6	105.4	106.1	109.1	123.8	103.3	113.2	108.0	108.1
September	107.3	118.0	114.0	105.2	106.4	106.3	101.4	116.5	114.6	103.5	104.6
October	109.5	113.4	120.3	107.0	109.6	95.2	105.7	114.9	113.9	107.1	110.2
November	105.0	113.8	115.2	103.6	105.6	98.7	94.4	109.4	111.8	101.4	105.8
December	114.5	121.3	115.2	116.5	113.8	105.9	110.0	120.9	108.4	117.9	114.9
1998^f											
January	83.6	86.9	83.2	81.3	88.1	86.7	81.8	85.4	79.3	86.4	86.0
February	81.5	83.6	72.4	86.0	82.6	94.6	78.0	84.1	74.0	84.9	83.5
March	90.0	80.2	80.7	96.8	92.5	110.5	86.2	79.3	81.2	93.9	91.9
April	93.2	78.4	91.5	96.2	92.2	106.3	93.7	82.6	96.7	99.0	89.6
May	97.9	93.6	93.7	98.2	99.1	96.5	101.9	101.6	94.7	94.9	99.4
June	103.5	110.2	104.0	101.4	102.7	87.2	107.7	105.4	102.3	101.6	100.9
July	103.5	96.3	102.2	100.9	100.6	100.4	115.6	97.4	106.4	100.2	104.6
August	109.7	106.3	107.0	105.7	106.3	111.0	123.4	101.1	114.4	110.1	107.9
September	107.6	113.3	113.5	107.7	106.2	106.2	100.6	114.2	116.5	102.8	104.1
October	110.0	117.7	120.0	107.5	109.1	96.1	105.5	114.8	113.7	105.3	110.0
November	104.2	114.0	115.7	101.6	106.5	98.0	94.6	112.9	109.0	102.5	106.8
December	113.7	119.2	115.2	114.6	113.3	105.9	109.8	121.4	114.2	117.9	114.4
1999											
January ^p	83.8	85.1	83.8	81.7	88.1	86.6	82.5	83.4	78.6	85.8	86.1

^pPreliminary. ^fRevised.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units completed in the United States to the seasonally adjusted national total of housing units completed. It provides an indication of the overall seasonality for the particular month.

Note: These seasonal indexes include trading-day adjustment factors.

Table A-2. Seasonal Indexes Used to Adjust Housing Units Under Construction

Period	United States implicit index ¹	In structures with—						All units			
		1 unit				2 to 4 units	5 units or more	North-east	Midwest	South	West
		North-east	Midwest	South	West						
1996^f											
January	95.1	95.1	92.3	93.7	93.9	97.6	98.9	95.1	94.1	95.3	95.3
February	96.6	94.2	90.0	97.1	94.7	100.2	101.2	96.7	93.3	98.5	96.4
March	94.9	92.1	90.5	95.4	95.0	96.6	98.4	93.7	92.2	96.2	95.8
April	98.4	96.0	94.6	99.2	98.6	97.4	100.0	97.5	95.6	99.5	98.9
May	100.4	98.8	99.3	101.8	100.3	98.1	100.6	98.8	99.5	101.7	100.6
June	102.3	101.2	103.0	103.0	102.7	102.0	100.5	101.4	101.9	102.6	102.6
July	103.6	105.6	106.4	104.1	104.6	99.5	100.2	104.1	104.3	103.7	103.0
August	104.5	106.5	108.4	104.6	106.0	102.2	99.8	104.9	105.4	103.4	104.0
September	104.2	105.5	108.9	104.4	105.8	101.5	99.8	104.1	105.4	103.0	104.9
October	104.2	104.5	108.3	102.8	104.8	102.4	101.8	103.6	106.8	102.0	104.2
November	101.7	104.0	103.8	100.8	100.8	103.6	101.3	103.7	104.5	100.4	100.8
December	97.3	98.5	96.5	95.6	95.0	101.5	100.1	98.4	99.1	96.3	95.8
1997^f											
January	95.0	94.8	92.4	93.8	93.9	97.9	99.0	95.1	94.6	95.4	95.1
February	93.5	90.9	87.3	93.6	91.6	96.9	98.0	93.8	90.3	95.2	93.4
March	95.3	92.5	90.6	95.4	95.0	96.5	98.5	94.0	92.4	96.2	95.6
April	98.1	96.5	94.6	99.0	98.6	97.1	100.0	97.9	95.5	99.3	98.9
May	100.4	99.1	99.0	101.7	100.1	98.0	100.4	98.9	99.2	101.3	100.7
June	102.2	101.0	103.0	103.1	102.8	102.0	100.4	100.7	101.8	102.5	102.8
July	103.5	105.8	106.6	104.1	104.7	99.4	100.2	104.4	103.9	103.7	103.3
August	103.9	106.9	108.3	104.6	106.0	102.0	99.4	104.7	105.1	103.4	103.9
September	104.2	105.3	109.2	104.5	105.8	101.1	99.8	103.8	105.3	103.1	104.8
October	103.9	104.2	108.4	103.0	104.9	102.4	101.7	103.6	107.2	102.2	103.8
November	101.7	103.7	103.4	100.8	100.7	104.2	101.4	103.6	104.4	100.5	100.8
December	97.4	98.2	96.0	95.6	95.0	102.0	100.2	98.2	99.2	96.4	95.9
1998^f											
January	95.4	94.7	92.4	93.8	93.8	98.2	99.1	95.2	94.9	95.5	95.1
February	93.5	90.9	87.5	93.6	91.7	97.0	98.0	94.0	90.4	95.2	93.5
March	95.2	92.7	90.6	95.3	94.9	96.3	98.6	94.2	92.6	96.2	95.6
April	98.3	96.8	94.7	99.0	98.7	96.8	99.9	98.1	95.5	99.2	98.8
May	100.2	99.2	99.0	101.6	100.1	97.9	100.2	98.9	99.1	101.1	100.6
June	102.0	101.0	103.1	103.1	102.9	102.0	100.4	100.4	101.8	102.5	103.0
July	103.4	105.9	106.8	104.1	104.8	99.4	100.2	104.5	103.7	103.7	103.6
August	104.0	107.0	108.3	104.6	106.0	101.9	99.2	104.7	104.9	103.4	103.8
September	104.1	105.1	109.2	104.6	105.7	100.8	99.9	103.6	105.3	103.1	104.8
October	103.7	104.0	108.3	103.0	105.0	102.4	101.6	103.8	107.4	102.3	103.5
November	101.8	103.4	103.3	100.9	100.6	104.4	101.5	103.5	104.4	100.6	100.8
December	97.2	98.2	95.8	95.6	95.0	102.3	100.3	98.2	99.2	96.4	96.0
1999											
January ^p	95.3	94.7	92.4	93.9	93.7	98.4	99.2	95.3	95.0	95.5	95.2

^pPreliminary. ^fRevised.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units under construction in the United States to the seasonally adjusted national total of housing units under construction. It provides an indication of the overall seasonality for the particular month.

Note: These seasonal indexes include trading-day adjustment factors.

Table A-3. Average Percent Changes and Related Measures for Monthly Private Housing Units Completed and Under Construction

Series	Average percentage change				Ratio of irregular component to cyclical component (I/C)	Number of months for cyclical dominance (MCD)
	Original series (O)	Seasonally adjusted series (CI)	Irregular component (I)	Cyclical component (C)		
PRIVATE HOUSING COMPLETIONS						
U.S. total	9.03	5.09	4.82	1.05	4.58	4
Northeast	17.59	14.77	14.63	1.58	9.27	9
Midwest	13.29	9.15	9.02	1.11	8.13	9
South	10.44	5.64	5.45	1.15	4.75	5
West	11.41	8.46	8.28	1.17	7.03	7
1 unit						
Northeast	15.67	11.48	11.38	1.42	8.00	9
Midwest	12.98	8.57	8.47	1.19	7.09	8
South	10.04	5.11	5.07	0.78	6.51	7
West	11.08	8.38	8.23	1.16	7.08	7
2 to 4 units	24.05	19.69	19.67	2.09	9.39	12
5 units or more	16.40	12.41	12.19	1.77	6.89	8
UNITS UNDER CONSTRUCTION						
U.S. total	1.98	0.97	0.52	0.75	0.70	1
Northeast	2.64	1.74	1.09	1.33	0.82	1
Midwest	3.39	1.50	1.08	0.92	1.17	2
South	1.97	1.29	0.85	0.97	0.87	1
West	2.04	1.27	0.86	0.80	1.06	2
1 unit						
Northeast	3.01	1.83	1.08	1.36	0.80	1
Midwest	4.25	1.46	1.00	0.91	1.10	2
South	2.37	1.30	0.89	0.89	1.00	2
West	2.59	1.45	1.03	0.88	1.17	2
2 to 4 units	3.31	3.02	2.42	1.58	1.53	2
5 units or more	2.00	1.85	1.06	1.51	0.70	1

Definitions of Summary Measures

The following are brief definitions of the measures shown here. More complete explanations appear in *Electronic Computers and Business Indicators* by Julius Shiskin, issued as Occasional Paper 57 by the National Bureau of Economic Research, 1957 (reprinted from the *Journal of Business*, October 1957).

O is the average month-to-month percentage change, without regard to sign, in the original series.

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

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

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

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movement in a monthly series. In deriving MCD, the average (without regard to sign) percentage changes in the irregular and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus, it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. MCD is small for smooth series and large for erratic series.

Monthly Revisions to Estimates

Each month the Census Bureau publishes preliminary estimates of Housing Completions. The Census Bureau releases these estimates to provide government and private data users with early measures of new privately owned residential construction activity. A necessary part of the process of issuing these early data involves the issuance of subsequent revisions. The revisions to monthly housing completions are primarily the result of the replacement of imputed data with data which are reported in subsequent months.

For total housing completions, the range of the difference between the last 12 preliminary and first revision estimates for the same months was from -1.96 percent to 1.11 percent, with a median of 0.26 percent. The range of the difference between preliminary and final estimates was from -1.37 percent to 2.02 percent, with a median of 0.23 percent.

Analysis of Revisions to Monthly Seasonally Adjusted Estimates of Housing Completions

Series	Percent changes between estimates— last 12 months					
	First revision versus preliminary			Final versus preliminary		
	Range		Median	Range		Median
	From	To		From	To	
HOUSING COMPLETIONS						
U.S. total	-1.96	1.11	0.26	-1.37	2.02	0.23
In structures with-						
1 unit	-1.90	1.03	0.17	-1.16	1.66	0.17
2 to 4 units	-6.52	5.00	0.00	-5.71	5.41	0.96
5 units or more	-3.20	2.67	-0.03	-3.20	6.49	0.01
Northeast	-4.84	6.57	1.05	-4.03	7.30	1.51
Midwest	-3.69	10.41	-0.96	-3.58	10.04	-0.70
South	-3.23	1.94	-0.16	-3.36	2.29	-0.07
West	-2.65	3.65	0.68	-3.17	6.07	0.71