

Housing Completions

U.S. Department of Commerce
Economics and Statistics Administration
BUREAU OF THE CENSUS

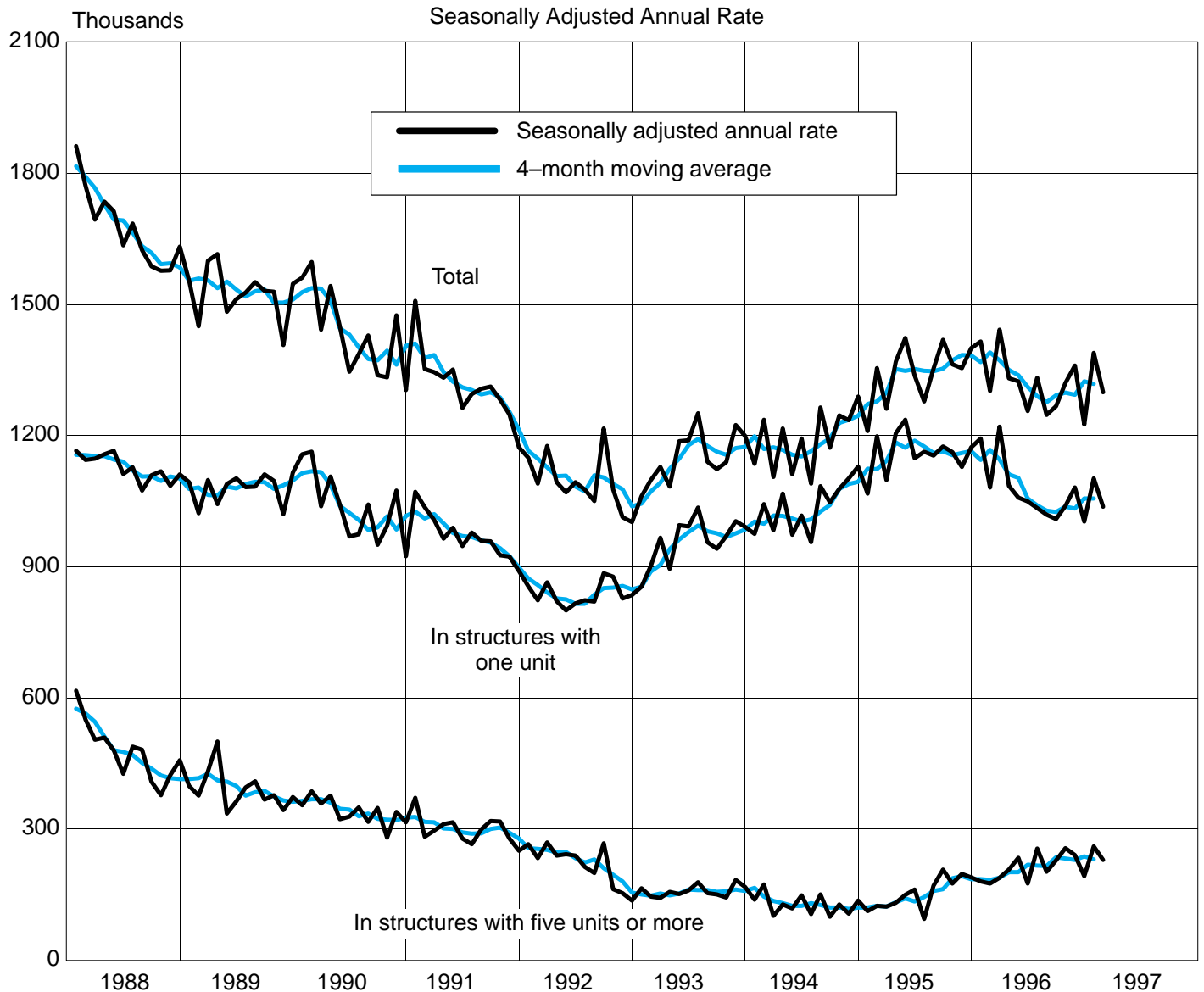
U.S. Department of Housing and
Urban Development

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This issue contains revised seasonally adjusted annual rates for 1994 through 1996 for new privately owned housing units completed (see table 1). Seasonally adjusted estimates of new privately owned housing units under construction are also contained in this issue (see table 3).

New Privately Owned Housing Units Completed



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

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

Questions regarding these data may be directed to **Margaret Bates**, Residential Construction Branch, Telephone 301-457-4703.

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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 1997 at a seasonally adjusted annual rate of 1,324,000. This is 10 (± 6) percent below the revised December rate of 1,469,000 and 7 (± 6) percent below the revised January 1996 rate of 1,427,000.

The January 1997 rate of single-family housing completions was 1,081,000; this is 7 (± 6) percent below the revised December rate of 1,167,000. The January rate for units in buildings with five units or more was 225,000. The January rate for units in buildings with two to four units was 18,000.

The seasonally adjusted estimate of housing units under construction at the end of January was 822,000; this is 1 (± 1) percent above the revised December figure of 817,000. Of the housing units under construction at the end of January, 577,000 were single-family structures, 216,000 were in buildings with five units or more, and 29,000 were in buildings with two to four units.

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 3 months to establish an underlying trend for total completions.

The statistics in this release 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. The appendix to this report includes 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 only since 1968; however, housing starts are available from 1889 to the present date. Historical data on housing starts and residential permit authorizations are available from Residential Construction Branch, Manufacturing and Construction Division, Bureau of the Census, Washington, DC 20233. Telephone 301-457-4666.

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 MSA's ¹ | Outside MSA's ¹ | North-east | Midwest | South | West |
|---|---------|---------------------|---------|---------------|-----------------|---------------------------|----------------------------|------------|---------|-------|-------|
| | | 1 unit | 2 units | 3 and 4 units | 5 units or more | | | | | | |
| ANNUAL DATA | | | | | | | | | | | |
| 1987 | 1,668.8 | 1,122.8 | 29.0 | 42.4 | 474.6 | 1,420.4 | 248.4 | 257.4 | 302.3 | 660.4 | 448.7 |
| 1988 | 1,529.8 | 1,084.6 | 23.5 | 33.2 | 388.6 | 1,286.1 | 243.7 | 250.2 | 280.3 | 594.8 | 404.6 |
| 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 ^f | 1,412.1 | 1,128.0 | 13.5 | 19.6 | 251.0 | 1,162.8 | 249.3 | 125.3 | 304.3 | 636.3 | 346.1 |
| MONTHLY DATA | | | | | | | | | | | |
| Not Seasonally Adjusted | | | | | | | | | | | |
| 1996: January | 99.3 | 79.4 | 0.6 | 1.4 | 17.9 | 81.9 | 17.4 | 8.4 | 21.0 | 43.9 | 26.0 |
| February | 91.0 | 72.3 | 0.7 | 1.4 | 16.6 | 76.3 | 14.7 | 9.2 | 15.2 | 41.9 | 24.7 |
| March | 103.1 | 83.7 | 0.6 | 1.8 | 17.1 | 85.2 | 17.9 | 6.6 | 20.0 | 49.7 | 26.8 |
| April | 101.9 | 80.3 | 0.7 | 1.4 | 19.4 | 86.4 | 15.6 | 8.8 | 22.9 | 45.9 | 24.3 |
| May | 114.6 | 91.9 | 0.9 | 1.0 | 20.7 | 97.0 | 17.6 | 9.2 | 22.6 | 53.3 | 29.5 |
| June | 125.9 | 98.0 | 1.0 | 1.0 | 25.9 | 102.0 | 23.9 | 10.9 | 27.8 | 56.6 | 30.5 |
| July | 126.3 | 97.6 | 1.0 | 1.9 | 25.9 | 104.3 | 22.0 | 9.3 | 29.9 | 56.3 | 30.8 |
| August | 134.1 | 104.1 | 1.8 | 2.1 | 26.1 | 111.0 | 23.1 | 11.0 | 30.3 | 61.4 | 31.4 |
| September | 122.1 | 99.6 | 1.2 | 2.3 | 19.0 | 98.4 | 23.7 | 11.7 | 27.4 | 51.3 | 31.7 |
| October | 129.9 | 108.5 | 1.0 | 1.0 | 19.4 | 105.1 | 24.8 | 13.2 | 27.1 | 59.7 | 30.0 |
| November ^f | 122.7 | 99.2 | 2.5 | 2.0 | 19.1 | 98.3 | 24.4 | 13.5 | 30.0 | 52.3 | 27.0 |
| December ^f | 141.1 | 113.4 | 1.3 | 2.4 | 23.9 | 116.9 | 24.1 | 13.5 | 30.1 | 63.9 | 33.5 |
| 1997: January ^p | 91.9 | 75.8 | 0.4 | 0.9 | 14.8 | 76.1 | 15.8 | 8.3 | 19.9 | 40.2 | 23.4 |
| Seasonally Adjusted Annual Rate | | | | | | | | | | | |
| 1994: ^f January | 1,228 | 1,083 | 31 | | 114 | (NA) | (NA) | 106 | 273 | 536 | 313 |
| February | 1,353 | 1,198 | 31 | | 124 | (NA) | (NA) | 112 | 319 | 551 | 371 |
| March | 1,257 | 1,091 | 42 | | 124 | (NA) | (NA) | 106 | 299 | 534 | 318 |
| April | 1,374 | 1,209 | 34 | | 131 | (NA) | (NA) | 128 | 284 | 620 | 342 |
| May | 1,430 | 1,242 | 40 | | 148 | (NA) | (NA) | 147 | 323 | 585 | 375 |
| June | 1,336 | 1,149 | 30 | | 157 | (NA) | (NA) | 119 | 323 | 578 | 316 |
| July | 1,281 | 1,170 | 21 | | 90 | (NA) | (NA) | 126 | 278 | 537 | 340 |
| August | 1,348 | 1,149 | 27 | | 172 | (NA) | (NA) | 150 | 304 | 550 | 344 |
| September | 1,414 | 1,158 | 37 | | 219 | (NA) | (NA) | 129 | 326 | 630 | 329 |
| October | 1,378 | 1,170 | 29 | | 179 | (NA) | (NA) | 125 | 318 | 614 | 321 |
| November | 1,365 | 1,139 | 27 | | 199 | (NA) | (NA) | 115 | 299 | 619 | 332 |
| December | 1,386 | 1,172 | 36 | | 178 | (NA) | (NA) | 117 | 329 | 608 | 332 |
| 1995: ^f January | 1,434 | 1,206 | 45 | | 183 | (NA) | (NA) | 156 | 350 | 636 | 292 |
| February | 1,305 | 1,087 | 42 | | 176 | (NA) | (NA) | 129 | 320 | 560 | 296 |
| March | 1,408 | 1,183 | 33 | | 192 | (NA) | (NA) | 142 | 310 | 586 | 370 |
| April | 1,348 | 1,099 | 40 | | 209 | (NA) | (NA) | 100 | 340 | 596 | 312 |
| May | 1,334 | 1,068 | 34 | | 232 | (NA) | (NA) | 144 | 318 | 566 | 306 |
| June | 1,239 | 1,037 | 32 | | 170 | (NA) | (NA) | 117 | 270 | 545 | 307 |
| July | 1,338 | 1,049 | 44 | | 245 | (NA) | (NA) | 154 | 302 | 574 | 308 |
| August | 1,251 | 1,021 | 26 | | 204 | (NA) | (NA) | 101 | 268 | 574 | 308 |
| September | 1,279 | 1,009 | 27 | | 243 | (NA) | (NA) | 124 | 282 | 565 | 308 |
| October | 1,331 | 1,040 | 28 | | 263 | (NA) | (NA) | 128 | 264 | 605 | 334 |
| November | 1,361 | 1,082 | 38 | | 241 | (NA) | (NA) | 103 | 268 | 629 | 361 |
| December | 1,203 | 997 | 28 | | 178 | (NA) | (NA) | 135 | 220 | 549 | 299 |
| 1996: ^f January | 1,427 | 1,130 | 28 | | 269 | (NA) | (NA) | 114 | 332 | 622 | 359 |
| February | 1,329 | 1,050 | 31 | | 248 | (NA) | (NA) | 137 | 247 | 592 | 353 |
| March | 1,382 | 1,102 | 28 | | 252 | (NA) | (NA) | 97 | 303 | 627 | 355 |
| April | 1,351 | 1,074 | 26 | | 251 | (NA) | (NA) | 117 | 302 | 612 | 320 |
| May | 1,409 | 1,124 | 25 | | 260 | (NA) | (NA) | 118 | 283 | 645 | 363 |
| June | 1,426 | 1,137 | 24 | | 265 | (NA) | (NA) | 127 | 304 | 639 | 356 |
| July | 1,463 | 1,161 | 30 | | 272 | (NA) | (NA) | 105 | 351 | 656 | 351 |
| August | 1,449 | 1,153 | 43 | | 253 | (NA) | (NA) | 126 | 313 | 661 | 349 |
| September | 1,356 | 1,097 | 40 | | 219 | (NA) | (NA) | 132 | 285 | 586 | 353 |
| October | 1,375 | 1,129 | 26 | | 220 | (NA) | (NA) | 131 | 274 | 642 | 328 |
| November | 1,431 | 1,151 | 43 | | 237 | (NA) | (NA) | 144 | 328 | 639 | 320 |
| December | 1,469 | 1,167 | 44 | | 258 | (NA) | (NA) | 138 | 319 | 672 | 340 |
| 1997: January ^p | 1,324 | 1,081 | 18 | | 225 | (NA) | (NA) | 114 | 308 | 574 | 328 |
| AVERAGE RELATIVE STANDARD ERRORS² | | | | | | | | | | | |
| Annual (percent) | 1 | 1 | 11 | 7 | 2 | 1 | 3 | 3 | 2 | 2 | 1 |
| Monthly (percent) | 3 | 3 | 17 | 16 | 8 | 3 | 8 | 8 | 8 | 4 | 5 |

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 MSA's ¹ | | | Outside MSA's 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 |
| ANNUAL DATA | | | | | | | | | | | | | | | | | | | | | |
| 1977 | 1,657 | 1,258 | 304 | 1,162 | 838 | 254 | 495 | 421 | 50 | 177 | 135 | 33 | 400 | 300 | 78 | 636 | 512 | 102 | 444 | 311 | 92 |
| 1978 | 1,868 | 1,369 | 382 | 1,314 | 907 | 322 | 554 | 462 | 60 | 182 | 141 | 32 | 417 | 300 | 90 | 752 | 571 | 150 | 517 | 357 | 111 |
| 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 [†] | 1,412 | 1,128 | 251 | 1,163 | 913 | 226 | 249 | 215 | 25 | 125 | 108 | 14 | 304 | 244 | 48 | 636 | 507 | 120 | 346 | 269 | 69 |
| QUARTERLY DATA | | | | | | | | | | | | | | | | | | | | | |
| 1993: 1st quarter | 245 | 212 | 28 | 194 | 167 | 24 | 51 | 45 | 5 | 24 | 21 | 2 | 51 | 42 | 9 | 109 | 99 | 9 | 60 | 50 | 8 |
| 2nd quarter | 286 | 247 | 33 | 222 | 191 | 27 | 64 | 56 | 6 | 27 | 24 | 2 | 64 | 55 | 7 | 121 | 105 | 14 | 74 | 62 | 10 |
| 3rd quarter | 317 | 275 | 34 | 255 | 220 | 29 | 63 | 55 | 6 | 29 | 26 | 2 | 74 | 63 | 9 | 139 | 123 | 13 | 74 | 63 | 9 |
| 4th quarter | 345 | 305 | 32 | 273 | 240 | 27 | 73 | 66 | 5 | 37 | 34 | 3 | 83 | 73 | 8 | 143 | 128 | 13 | 82 | 71 | 8 |
| 1994: 1st quarter | 270 | 238 | 25 | 219 | 193 | 21 | 51 | 46 | 3 | 22 | 21 | 1 | 57 | 47 | 7 | 119 | 107 | 10 | 73 | 63 | 8 |
| 2nd quarter | 336 | 291 | 37 | 274 | 236 | 32 | 63 | 55 | 5 | 31 | 27 | 3 | 76 | 62 | 12 | 146 | 130 | 13 | 83 | 72 | 9 |
| 3rd quarter | 361 | 308 | 45 | 292 | 246 | 40 | 70 | 62 | 6 | 35 | 32 | 3 | 84 | 72 | 11 | 152 | 131 | 18 | 90 | 74 | 14 |
| 4th quarter | 379 | 323 | 48 | 302 | 254 | 42 | 77 | 69 | 6 | 35 | 33 | 1 | 90 | 75 | 13 | 164 | 139 | 23 | 90 | 77 | 11 |
| 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 | 321 | 62 | 320 | 256 | 57 | 73 | 65 | 6 | 40 | 34 | 5 | 87 | 76 | 8 | 176 | 141 | 32 | 90 | 71 | 17 |
| AVERAGE RELATIVE STANDARD ERRORS³ | | | | | | | | | | | | | | | | | | | | | |
| Annual (percent) . . | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 4 | 9 | 3 | 3 | 5 | 2 | 2 | 5 | 2 | 3 | 3 | 1 | 1 | 2 |
| Quarterly (percent) . . | 2 | 2 | 4 | 2 | 2 | 4 | 5 | 6 | 23 | 4 | 4 | 5 | 5 | 4 | 18 | 3 | 3 | 5 | 2 | 3 | 5 |

[†]Revised.

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 MSA's ¹ | Outside MSA's ¹ | North-east | Midwest | South | West |
|---|-------|---------------------|---------|---------------|-----------------|---------------------------|----------------------------|------------|---------|-------|-------|
| | | 1 unit | 2 units | 3 and 4 units | 5 units or more | | | | | | |
| ANNUAL DATA | | | | | | | | | | | |
| 1987 | 987.3 | 590.6 | 17.3 | 22.5 | 356.9 | 820.6 | 166.7 | 221.7 | 158.7 | 342.5 | 264.4 |
| 1988 | 919.4 | 569.6 | 16.1 | 24.1 | 309.5 | 757.5 | 161.9 | 201.6 | 148.1 | 308.2 | 261.6 |
| 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 ^f | 795.0 | 552.3 | 9.0 | 18.6 | 215.1 | 632.5 | 162.5 | 84.9 | 178.2 | 339.6 | 192.2 |
| MONTHLY DATA | | | | | | | | | | | |
| Not Seasonally Adjusted | | | | | | | | | | | |
| 1996: | | | | | | | | | | | |
| January | 763.7 | 533.7 | 7.6 | 11.9 | 210.4 | 613.6 | 150.1 | 82.9 | 165.5 | 328.9 | 186.3 |
| February | 765.8 | 533.1 | 7.8 | 11.7 | 213.3 | 618.0 | 147.8 | 79.8 | 163.4 | 332.7 | 189.9 |
| March | 772.8 | 544.0 | 8.1 | 10.8 | 209.9 | 620.5 | 152.3 | 82.6 | 164.5 | 335.7 | 190.0 |
| April | 813.5 | 578.4 | 9.2 | 13.2 | 212.7 | 652.6 | 160.9 | 86.5 | 172.3 | 352.5 | 202.2 |
| May | 835.2 | 595.5 | 9.7 | 14.4 | 215.7 | 667.1 | 168.2 | 88.4 | 181.0 | 361.7 | 204.1 |
| June | 845.1 | 610.5 | 10.2 | 16.4 | 208.0 | 672.9 | 172.2 | 90.4 | 183.6 | 363.2 | 208.0 |
| July | 853.3 | 619.9 | 9.9 | 17.8 | 205.7 | 677.4 | 175.9 | 93.9 | 188.3 | 364.2 | 206.9 |
| August | 857.0 | 627.3 | 9.2 | 16.1 | 204.4 | 678.6 | 178.4 | 94.3 | 192.7 | 359.3 | 210.6 |
| September | 858.9 | 624.5 | 10.3 | 15.0 | 209.1 | 680.0 | 178.9 | 93.7 | 193.4 | 364.4 | 207.5 |
| October | 855.1 | 614.0 | 10.8 | 16.7 | 213.6 | 677.2 | 177.9 | 92.4 | 195.1 | 357.2 | 210.3 |
| November ^f | 843.3 | 596.7 | 9.3 | 19.2 | 218.2 | 671.7 | 171.7 | 88.8 | 191.1 | 356.5 | 207.0 |
| December ^f | 795.0 | 552.3 | 9.0 | 18.6 | 215.1 | 632.5 | 162.5 | 84.9 | 178.2 | 339.6 | 192.2 |
| 1997: | | | | | | | | | | | |
| January ^p | 783.2 | 542.8 | 9.2 | 18.5 | 212.7 | 626.7 | 156.5 | 84.9 | 168.8 | 337.8 | 191.8 |
| Seasonally Adjusted | | | | | | | | | | | |
| 1994: ^f | | | | | | | | | | | |
| January | 709 | 569 | 20 | | 120 | (NA) | (NA) | 91 | 159 | 280 | 179 |
| February | 716 | 573 | 19 | | 124 | (NA) | (NA) | 91 | 160 | 285 | 180 |
| March | 732 | 585 | 18 | | 129 | (NA) | (NA) | 91 | 162 | 297 | 182 |
| April | 740 | 584 | 19 | | 137 | (NA) | (NA) | 93 | 169 | 296 | 182 |
| May | 749 | 585 | 17 | | 147 | (NA) | (NA) | 92 | 171 | 305 | 181 |
| June | 757 | 590 | 18 | | 149 | (NA) | (NA) | 95 | 171 | 308 | 183 |
| July | 764 | 590 | 18 | | 156 | (NA) | (NA) | 94 | 174 | 311 | 185 |
| August | 773 | 590 | 20 | | 163 | (NA) | (NA) | 95 | 175 | 320 | 183 |
| September | 774 | 590 | 20 | | 164 | (NA) | (NA) | 93 | 175 | 321 | 185 |
| October | 775 | 583 | 20 | | 172 | (NA) | (NA) | 92 | 173 | 324 | 186 |
| November | 785 | 585 | 22 | | 178 | (NA) | (NA) | 96 | 178 | 323 | 188 |
| December | 784 | 579 | 21 | | 184 | (NA) | (NA) | 97 | 176 | 325 | 186 |
| 1995: ^f | | | | | | | | | | | |
| January | 782 | 570 | 22 | | 190 | (NA) | (NA) | 95 | 174 | 325 | 188 |
| February | 795 | 578 | 22 | | 195 | (NA) | (NA) | 96 | 177 | 326 | 196 |
| March | 771 | 554 | 22 | | 195 | (NA) | (NA) | 95 | 169 | 322 | 185 |
| April | 758 | 542 | 20 | | 196 | (NA) | (NA) | 94 | 163 | 318 | 183 |
| May | 756 | 539 | 21 | | 196 | (NA) | (NA) | 93 | 156 | 318 | 189 |
| June | 758 | 536 | 21 | | 201 | (NA) | (NA) | 93 | 159 | 318 | 188 |
| July | 760 | 538 | 20 | | 202 | (NA) | (NA) | 89 | 155 | 327 | 189 |
| August | 774 | 548 | 21 | | 205 | (NA) | (NA) | 91 | 161 | 330 | 192 |
| September | 782 | 555 | 21 | | 206 | (NA) | (NA) | 90 | 164 | 335 | 193 |
| October | 782 | 559 | 21 | | 202 | (NA) | (NA) | 90 | 165 | 333 | 194 |
| November | 786 | 560 | 20 | | 206 | (NA) | (NA) | 89 | 168 | 337 | 192 |
| December | 798 | 568 | 21 | | 209 | (NA) | (NA) | 87 | 174 | 344 | 193 |
| 1996: ^f | | | | | | | | | | | |
| January | 802 | 568 | 20 | | 214 | (NA) | (NA) | 87 | 176 | 345 | 194 |
| February | 798 | 566 | 19 | | 213 | (NA) | (NA) | 83 | 179 | 339 | 197 |
| March | 814 | 580 | 20 | | 214 | (NA) | (NA) | 88 | 180 | 347 | 199 |
| April | 825 | 590 | 23 | | 212 | (NA) | (NA) | 89 | 180 | 352 | 204 |
| May | 826 | 590 | 24 | | 212 | (NA) | (NA) | 90 | 180 | 353 | 203 |
| June | 826 | 594 | 25 | | 207 | (NA) | (NA) | 88 | 180 | 354 | 204 |
| July | 825 | 593 | 27 | | 205 | (NA) | (NA) | 91 | 180 | 352 | 202 |
| August | 820 | 593 | 24 | | 203 | (NA) | (NA) | 90 | 181 | 347 | 202 |
| September | 825 | 592 | 25 | | 208 | (NA) | (NA) | 90 | 183 | 354 | 198 |
| October | 825 | 588 | 26 | | 211 | (NA) | (NA) | 89 | 183 | 352 | 201 |
| November | 828 | 584 | 28 | | 216 | (NA) | (NA) | 86 | 182 | 355 | 205 |
| December | 817 | 573 | 27 | | 217 | (NA) | (NA) | 86 | 180 | 352 | 199 |
| 1997: | | | | | | | | | | | |
| January ^p | 822 | 577 | 29 | | 216 | (NA) | (NA) | 88 | 180 | 354 | 200 |
| AVERAGE RELATIVE STANDARD ERRORS² | | | | | | | | | | | |
| End of period (percent) | 1 | 2 | 8 | 9 | 3 | 1 | 5 | 4 | 4 | 2 | 2 |

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

Table 4. New Privately Owned Housing Units Under Construction by Location and Type of Structure

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

| Period | United States | | | Inside MSA's ¹ | | | Outside MSA's 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 |
| QUARTERLY DATA | | | | | | | | | | | | | | | | | | | | | | |
| 1988: | 1st quarter | 948.5 | 577.7 | 332.3 | 793.8 | 449.8 | 312.3 | 154.7 | 127.9 | 20.0 | 221.2 | 152.2 | 60.7 | 140.3 | 83.1 | 49.2 | 326.0 | 217.2 | 96.6 | 261.0 | 125.3 | 125.7 |
| | 2nd quarter | 1,009.6 | 635.3 | 335.2 | 836.8 | 490.2 | 315.0 | 172.7 | 145.1 | 20.2 | 226.6 | 159.4 | 58.9 | 162.5 | 102.7 | 51.0 | 346.2 | 235.1 | 99.2 | 274.3 | 138.2 | 126.0 |
| | 3rd quarter | 994.6 | 629.7 | 324.5 | 818.3 | 483.1 | 302.7 | 176.4 | 146.5 | 21.8 | 226.2 | 158.9 | 58.4 | 161.0 | 103.0 | 48.7 | 332.3 | 224.8 | 95.7 | 275.2 | 142.9 | 121.7 |
| | 4th quarter | 919.4 | 569.6 | 309.5 | 757.5 | 438.2 | 287.9 | 161.9 | 131.4 | 21.6 | 201.6 | 140.4 | 52.8 | 148.1 | 90.4 | 47.7 | 308.2 | 201.7 | 94.9 | 261.6 | 137.1 | 114.2 |
| 1989: | 1st quarter | 894.2 | 548.1 | 303.5 | 739.2 | 425.0 | 281.0 | 155.0 | 123.1 | 22.5 | 182.3 | 123.7 | 50.0 | 139.5 | 80.4 | 48.8 | 310.9 | 204.8 | 93.5 | 261.5 | 139.2 | 111.2 |
| | 2nd quarter | 942.9 | 597.0 | 303.5 | 765.8 | 453.0 | 280.0 | 177.0 | 144.0 | 23.5 | 180.8 | 128.5 | 44.2 | 157.8 | 95.7 | 52.0 | 323.0 | 215.1 | 95.2 | 281.3 | 157.7 | 112.1 |
| | 3rd quarter | 925.2 | 593.6 | 289.6 | 747.8 | 449.3 | 266.2 | 177.3 | 144.2 | 23.4 | 176.2 | 124.9 | 43.5 | 157.9 | 102.1 | 45.0 | 309.4 | 205.5 | 91.7 | 281.7 | 161.0 | 109.4 |
| | 4th quarter | 850.3 | 535.1 | 278.1 | 686.7 | 405.6 | 254.2 | 163.6 | 129.6 | 24.0 | 158.8 | 109.8 | 42.9 | 145.5 | 89.6 | 46.8 | 282.1 | 184.6 | 85.6 | 263.9 | 151.1 | 102.8 |
| 1990: | 1st quarter | 841.5 | 528.7 | 278.6 | 683.1 | 402.0 | 254.8 | 158.4 | 126.6 | 23.8 | 147.9 | 100.9 | 41.3 | 141.9 | 87.2 | 45.8 | 285.5 | 189.0 | 87.3 | 266.1 | 151.5 | 104.3 |
| | 2nd quarter | 873.3 | 560.8 | 278.2 | 698.7 | 418.6 | 253.4 | 174.6 | 142.2 | 24.8 | 143.2 | 98.4 | 39.0 | 161.3 | 103.6 | 48.8 | 301.3 | 202.2 | 90.2 | 267.5 | 156.6 | 100.1 |
| | 3rd quarter | 818.8 | 529.6 | 258.8 | 648.0 | 389.6 | 234.8 | 170.7 | 140.0 | 24.0 | 137.2 | 93.8 | 38.1 | 155.5 | 104.2 | 43.2 | 273.4 | 185.2 | 80.5 | 252.7 | 146.4 | 97.0 |
| | 4th quarter | 711.4 | 449.1 | 236.3 | 553.9 | 321.2 | 212.8 | 157.5 | 127.9 | 23.5 | 121.6 | 80.1 | 37.3 | 133.4 | 86.8 | 39.3 | 242.3 | 160.3 | 75.4 | 214.1 | 121.9 | 84.4 |
| 1991: | 1st quarter | 644.8 | 412.6 | 207.8 | 497.4 | 293.8 | 185.6 | 147.5 | 118.8 | 22.3 | 105.1 | 68.1 | 33.3 | 119.9 | 77.6 | 35.2 | 229.8 | 153.0 | 70.5 | 190.1 | 114.0 | 68.9 |
| | 2nd quarter | 675.1 | 465.3 | 185.0 | 518.4 | 336.5 | 163.9 | 156.6 | 128.7 | 21.1 | 112.2 | 77.0 | 31.6 | 136.1 | 97.3 | 31.4 | 231.2 | 165.8 | 58.8 | 195.5 | 125.2 | 63.1 |
| | 3rd quarter | 657.1 | 476.7 | 157.3 | 502.6 | 347.7 | 138.3 | 154.5 | 129.0 | 19.0 | 110.3 | 78.4 | 28.9 | 135.1 | 102.5 | 25.2 | 222.5 | 172.4 | 44.2 | 189.3 | 123.4 | 59.0 |
| | 4th quarter | 606.3 | 433.5 | 149.2 | 458.4 | 314.3 | 127.1 | 147.9 | 119.2 | 22.1 | 103.9 | 72.6 | 28.4 | 122.4 | 90.5 | 25.1 | 208.5 | 158.3 | 42.7 | 171.6 | 112.1 | 53.0 |
| 1992: | 1st quarter | 622.9 | 451.8 | 148.7 | 471.6 | 330.2 | 125.5 | 151.3 | 121.6 | 23.2 | 96.8 | 66.6 | 27.2 | 127.3 | 95.2 | 25.6 | 226.0 | 173.7 | 45.4 | 172.8 | 116.4 | 50.4 |
| | 2nd quarter | 667.6 | 504.8 | 140.5 | 501.9 | 366.7 | 119.2 | 165.7 | 138.1 | 21.3 | 95.4 | 72.0 | 20.7 | 150.1 | 113.5 | 29.9 | 242.6 | 193.4 | 42.4 | 179.5 | 125.9 | 47.4 |
| | 3rd quarter | 664.0 | 511.5 | 132.2 | 491.6 | 364.5 | 112.3 | 172.5 | 147.0 | 19.9 | 91.7 | 70.2 | 19.1 | 155.5 | 116.9 | 32.5 | 239.1 | 196.0 | 37.6 | 177.8 | 128.5 | 43.0 |
| | 4th quarter | 612.4 | 472.7 | 122.8 | 453.1 | 336.8 | 104.2 | 159.4 | 135.8 | 18.7 | 81.4 | 62.7 | 16.8 | 137.8 | 104.2 | 28.4 | 228.4 | 186.1 | 38.0 | 164.8 | 119.7 | 39.6 |
| 1993: | 1st quarter | 600.9 | 471.1 | 111.7 | 451.6 | 344.0 | 94.7 | 149.3 | 127.1 | 17.0 | 76.9 | 58.9 | 16.0 | 130.4 | 101.9 | 22.9 | 234.8 | 192.6 | 37.5 | 158.8 | 117.7 | 35.4 |
| | 2nd quarter | 675.3 | 542.5 | 112.7 | 513.1 | 401.8 | 96.9 | 162.2 | 140.7 | 15.8 | 86.0 | 68.1 | 16.0 | 153.0 | 120.2 | 26.4 | 265.7 | 223.8 | 36.5 | 170.6 | 130.5 | 33.9 |
| | 3rd quarter | 707.6 | 572.4 | 114.4 | 538.5 | 423.7 | 100.0 | 169.1 | 148.7 | 14.4 | 94.3 | 76.1 | 16.2 | 161.9 | 129.6 | 25.6 | 271.1 | 228.0 | 37.1 | 180.3 | 138.7 | 35.5 |
| | 4th quarter | 680.1 | 543.0 | 118.2 | 521.0 | 404.7 | 102.9 | 159.1 | 138.3 | 15.3 | 89.3 | 72.5 | 14.8 | 154.4 | 119.0 | 29.2 | 265.4 | 219.1 | 40.9 | 170.9 | 132.4 | 33.3 |
| 1994: | 1st quarter | 695.6 | 551.1 | 126.8 | 542.5 | 418.6 | 111.5 | 153.0 | 132.5 | 15.3 | 84.9 | 65.9 | 17.0 | 148.5 | 116.1 | 27.1 | 286.5 | 231.5 | 49.4 | 175.6 | 137.7 | 33.3 |
| | 2nd quarter | 776.8 | 608.9 | 150.5 | 605.0 | 459.4 | 132.8 | 171.7 | 149.4 | 17.7 | 96.8 | 77.5 | 17.4 | 176.3 | 139.4 | 31.5 | 316.9 | 245.9 | 65.7 | 186.7 | 146.0 | 36.0 |
| | 3rd quarter | 806.0 | 621.2 | 164.7 | 625.5 | 464.3 | 146.7 | 180.5 | 156.8 | 17.9 | 96.6 | 77.8 | 16.7 | 185.0 | 144.0 | 34.5 | 330.3 | 250.6 | 74.0 | 194.1 | 148.7 | 39.4 |
| | 4th quarter | 762.2 | 557.8 | 182.5 | 597.6 | 417.9 | 163.9 | 164.5 | 139.9 | 18.5 | 96.3 | 77.0 | 17.2 | 173.5 | 128.1 | 38.2 | 312.1 | 223.4 | 82.8 | 180.3 | 129.2 | 44.3 |
| 1995: | 1st quarter | 732.3 | 520.5 | 190.9 | 584.5 | 396.7 | 172.5 | 147.8 | 123.7 | 18.4 | 88.7 | 69.9 | 16.7 | 155.3 | 111.4 | 37.6 | 310.6 | 216.3 | 87.9 | 177.7 | 122.9 | 48.7 |
| | 2nd quarter | 775.7 | 551.4 | 202.4 | 617.6 | 417.2 | 184.3 | 158.0 | 134.2 | 18.2 | 94.7 | 73.2 | 19.4 | 162.0 | 121.4 | 33.8 | 327.2 | 226.3 | 94.3 | 191.7 | 130.5 | 54.9 |
| | 3rd quarter | 813.4 | 584.7 | 206.8 | 645.3 | 441.8 | 187.3 | 168.1 | 143.0 | 19.5 | 94.4 | 76.4 | 16.1 | 172.8 | 131.4 | 34.2 | 343.1 | 237.9 | 98.8 | 203.0 | 139.0 | 57.7 |
| | 4th quarter | 775.9 | 547.2 | 207.7 | 620.1 | 417.0 | 187.4 | 155.8 | 130.2 | 20.3 | 86.3 | 70.1 | 14.3 | 172.0 | 125.0 | 40.2 | 331.4 | 226.7 | 98.5 | 186.3 | 125.3 | 54.8 |
| 1996: | 1st quarter | 772.8 | 544.0 | 209.9 | 620.5 | 417.2 | 189.2 | 152.3 | 126.8 | 20.7 | 82.6 | 66.8 | 13.8 | 164.5 | 121.0 | 37.3 | 335.7 | 231.4 | 98.5 | 190.0 | 124.8 | 60.2 |
| | 2nd quarter | 845.1 | 610.5 | 208.0 | 672.9 | 465.2 | 188.1 | 172.2 | 145.3 | 19.8 | 90.4 | 74.2 | 13.5 | 183.6 | 141.5 | 32.9 | 363.2 | 257.9 | 97.6 | 208.0 | 136.9 | 64.1 |
| | 3rd quarter | 858.9 | 624.5 | 209.1 | 680.0 | 473.2 | 188.3 | 178.9 | 151.3 | 20.9 | 93.7 | 76.7 | 14.3 | 193.4 | 150.3 | 34.1 | 364.4 | 259.2 | 98.2 | 207.5 | 138.3 | 62.5 |
| | 4th quarter | 795.0 | 552.3 | 215.1 | 632.5 | 419.4 | 192.3 | 162.5 | 132.9 | 22.8 | 84.9 | 67.9 | 13.9 | 178.2 | 128.8 | 39.6 | 339.6 | 232.1 | 99.9 | 192.2 | 123.5 | 61.6 |
| AVERAGE RELATIVE STANDARD ERRORS³ | | | | | | | | | | | | | | | | | | | | | | |
| End of period . (percent) . | | 1 | 2 | 3 | 1 | 2 | 3 | 5 | 5 | 19 | 3 | 4 | 7 | 4 | 4 | 14 | 2 | 2 | 5 | 2 | 3 | 2 |

¹Revised.

²Metropolitan statistical areas.

³Includes units under construction in structures with two to four units.

³Average Relative Standard Errors: Average for the latest 2-quarter period (quarter 1 through quarter 2 or quarter 3 through quarter 4).

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 (MSA's) 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.

Monthly, census field representatives sample permits from these 840 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 selected in the 840 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 4-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 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.

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, K1A0T6. 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).

Construction Review: A quarterly publication of the International Trade Administration, U.S. Department of Commerce.

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 | | | | | | |
| 1994^f | | | | | | | | | | | |
| January | 84.5 | 88.3 | 79.2 | 85.3 | 87.9 | 82.7 | 81.8 | 86.3 | 78.2 | 84.6 | 88.1 |
| February | 79.5 | 81.4 | 70.0 | 83.3 | 81.4 | 75.2 | 77.8 | 75.7 | 69.0 | 81.5 | 81.2 |
| March | 89.9 | 81.7 | 78.4 | 97.8 | 91.7 | 95.7 | 84.6 | 85.3 | 81.1 | 96.4 | 91.0 |
| April | 90.5 | 91.2 | 88.7 | 88.6 | 92.6 | 97.1 | 94.6 | 88.5 | 90.4 | 90.2 | 92.3 |
| May | 97.0 | 90.4 | 95.0 | 99.4 | 98.2 | 94.9 | 94.5 | 94.0 | 95.2 | 100.2 | 97.8 |
| June | 105.2 | 103.0 | 104.8 | 104.5 | 101.7 | 101.6 | 116.1 | 103.9 | 109.3 | 105.8 | 100.4 |
| July | 102.0 | 95.2 | 100.8 | 102.6 | 101.0 | 113.9 | 111.8 | 102.9 | 103.3 | 101.6 | 105.3 |
| August | 110.4 | 103.2 | 111.4 | 109.3 | 106.3 | 112.1 | 123.6 | 104.7 | 113.9 | 113.0 | 108.2 |
| September | 109.1 | 106.9 | 116.7 | 106.6 | 110.7 | 102.6 | 105.7 | 110.0 | 118.4 | 106.3 | 107.1 |
| October | 113.6 | 123.2 | 122.0 | 111.8 | 112.9 | 98.5 | 105.0 | 116.7 | 118.8 | 110.2 | 112.0 |
| November | 102.3 | 112.8 | 114.3 | 96.3 | 100.8 | 121.8 | 96.1 | 113.1 | 109.5 | 98.8 | 100.9 |
| December | 114.5 | 123.0 | 117.6 | 114.0 | 114.6 | 102.3 | 109.2 | 118.2 | 112.5 | 111.4 | 116.6 |
| 1995^f | | | | | | | | | | | |
| January | 83.9 | 87.1 | 79.2 | 85.0 | 87.6 | 82.4 | 80.9 | 88.0 | 77.7 | 84.9 | 86.9 |
| February | 79.1 | 81.4 | 70.5 | 83.1 | 81.1 | 77.4 | 77.7 | 75.7 | 69.0 | 81.4 | 80.6 |
| March | 89.6 | 81.4 | 79.0 | 98.1 | 91.9 | 96.8 | 82.9 | 83.4 | 79.7 | 94.4 | 89.4 |
| April | 90.4 | 90.9 | 88.9 | 88.5 | 92.2 | 95.8 | 93.6 | 87.0 | 92.8 | 90.7 | 93.2 |
| May | 97.0 | 90.8 | 95.0 | 100.0 | 98.7 | 94.8 | 94.9 | 94.3 | 94.3 | 100.3 | 98.4 |
| June | 105.3 | 102.7 | 104.5 | 104.2 | 102.0 | 101.2 | 117.1 | 105.3 | 109.1 | 104.8 | 99.3 |
| July | 103.6 | 95.5 | 100.3 | 102.5 | 100.9 | 113.6 | 113.3 | 103.6 | 103.2 | 102.4 | 106.9 |
| August | 110.8 | 103.9 | 111.2 | 109.0 | 106.2 | 110.7 | 123.7 | 106.0 | 117.5 | 113.3 | 108.0 |
| September | 108.4 | 107.2 | 116.3 | 106.1 | 109.9 | 104.7 | 104.6 | 108.2 | 115.9 | 106.3 | 108.8 |
| October | 113.0 | 122.6 | 122.1 | 112.1 | 113.1 | 95.1 | 105.2 | 119.0 | 118.0 | 111.6 | 110.2 |
| November | 102.3 | 112.8 | 114.4 | 96.6 | 100.7 | 124.9 | 96.8 | 112.7 | 111.6 | 97.6 | 100.9 |
| December | 115.0 | 123.7 | 117.6 | 114.4 | 115.6 | 102.2 | 110.4 | 114.0 | 111.7 | 111.8 | 117.1 |
| 1996^f | | | | | | | | | | | |
| January | 83.5 | 86.2 | 79.2 | 85.0 | 87.2 | 81.7 | 79.8 | 88.3 | 76.1 | 84.9 | 86.9 |
| February | 82.2 | 84.5 | 73.4 | 85.5 | 84.0 | 81.1 | 80.6 | 79.8 | 73.0 | 84.0 | 83.3 |
| March | 89.5 | 81.0 | 79.6 | 98.2 | 91.7 | 97.8 | 81.4 | 81.8 | 79.4 | 95.2 | 90.4 |
| April | 90.5 | 91.0 | 89.2 | 88.6 | 92.0 | 95.6 | 92.9 | 90.8 | 91.8 | 90.5 | 91.5 |
| May | 97.6 | 90.7 | 95.1 | 100.4 | 99.1 | 94.7 | 95.4 | 93.4 | 95.8 | 99.1 | 97.4 |
| June | 105.9 | 102.8 | 103.8 | 103.8 | 102.2 | 99.3 | 117.4 | 101.8 | 109.7 | 106.1 | 102.8 |
| July | 103.6 | 95.8 | 99.8 | 102.3 | 100.8 | 113.5 | 114.4 | 106.0 | 102.2 | 102.8 | 105.1 |
| August | 111.0 | 104.7 | 111.0 | 109.0 | 106.2 | 111.1 | 123.7 | 105.4 | 116.6 | 111.7 | 108.3 |
| September | 108.0 | 107.1 | 116.0 | 105.9 | 108.9 | 105.6 | 103.8 | 106.7 | 115.7 | 105.4 | 108.3 |
| October | 113.4 | 122.0 | 122.0 | 111.8 | 113.4 | 92.2 | 105.7 | 120.9 | 119.4 | 112.3 | 110.1 |
| November | 102.9 | 112.4 | 114.7 | 97.1 | 100.8 | 127.4 | 96.8 | 112.3 | 109.2 | 98.0 | 101.0 |
| December | 115.2 | 124.0 | 117.6 | 114.8 | 116.0 | 102.5 | 111.1 | 117.0 | 112.0 | 113.0 | 117.1 |
| 1997 | | | | | | | | | | | |
| January ^p | 83.3 | 86.0 | 79.2 | 84.8 | 87.0 | 81.2 | 79.1 | 87.4 | 77.4 | 83.7 | 85.4 |

^pPreliminary. ^rRevised.

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 | | | | | | |
| 1994^f | | | | | | | | | | | |
| January | 94.2 | 96.0 | 91.1 | 93.7 | 94.1 | 95.5 | 98.2 | 96.2 | 93.1 | 94.9 | 95.4 |
| February | 92.2 | 91.1 | 85.8 | 93.8 | 91.0 | 94.9 | 96.8 | 93.0 | 88.2 | 95.0 | 92.6 |
| March | 95.0 | 91.3 | 90.4 | 96.0 | 95.3 | 96.6 | 98.1 | 93.6 | 91.4 | 96.4 | 96.1 |
| April | 98.3 | 95.3 | 95.0 | 99.9 | 98.7 | 98.6 | 100.1 | 96.1 | 96.0 | 100.4 | 98.8 |
| May | 101.4 | 97.9 | 101.1 | 102.5 | 100.9 | 99.7 | 101.7 | 98.7 | 100.5 | 103.0 | 100.4 |
| June | 102.6 | 102.6 | 103.8 | 103.3 | 102.5 | 103.0 | 100.7 | 102.7 | 102.9 | 102.9 | 101.9 |
| July | 103.9 | 104.9 | 106.6 | 104.3 | 104.2 | 101.0 | 100.8 | 103.2 | 105.7 | 103.7 | 103.2 |
| August | 104.5 | 105.2 | 108.3 | 104.4 | 106.3 | 103.4 | 100.8 | 104.5 | 106.7 | 103.3 | 104.4 |
| September | 104.1 | 105.8 | 107.8 | 103.8 | 105.6 | 103.9 | 100.2 | 104.8 | 105.9 | 102.6 | 104.9 |
| October | 103.8 | 105.6 | 107.6 | 102.1 | 104.1 | 102.7 | 101.7 | 104.3 | 106.2 | 101.4 | 104.1 |
| November | 101.5 | 103.9 | 104.5 | 100.5 | 100.9 | 101.8 | 100.6 | 103.2 | 104.4 | 99.9 | 100.8 |
| December | 97.2 | 99.7 | 97.2 | 95.2 | 95.5 | 98.3 | 99.4 | 99.2 | 98.4 | 95.9 | 96.4 |
| 1995^f | | | | | | | | | | | |
| January | 95.1 | 95.7 | 92.2 | 93.7 | 94.6 | 95.5 | 98.3 | 95.8 | 93.4 | 95.0 | 95.6 |
| February | 92.6 | 90.9 | 86.0 | 93.9 | 90.8 | 94.6 | 96.8 | 92.9 | 88.3 | 94.9 | 92.8 |
| March | 95.0 | 91.9 | 90.5 | 95.9 | 95.1 | 96.5 | 98.1 | 93.4 | 91.5 | 96.3 | 95.7 |
| April | 98.6 | 95.3 | 94.6 | 99.8 | 98.9 | 98.5 | 100.2 | 96.6 | 95.8 | 100.2 | 98.9 |
| May | 101.1 | 98.4 | 100.5 | 102.3 | 100.4 | 99.7 | 101.9 | 98.7 | 100.4 | 102.9 | 100.5 |
| June | 102.3 | 101.8 | 103.2 | 103.2 | 102.8 | 103.2 | 100.7 | 102.6 | 102.3 | 102.8 | 102.0 |
| July | 103.6 | 104.7 | 106.0 | 104.1 | 104.1 | 100.8 | 100.6 | 103.0 | 105.2 | 103.7 | 102.8 |
| August | 104.4 | 105.3 | 108.0 | 104.4 | 106.2 | 103.6 | 100.8 | 104.9 | 106.6 | 103.3 | 104.3 |
| September | 104.0 | 105.8 | 108.0 | 104.0 | 105.0 | 104.0 | 100.3 | 104.7 | 105.9 | 102.9 | 105.1 |
| October | 103.7 | 105.3 | 107.9 | 102.1 | 104.6 | 102.9 | 101.6 | 104.2 | 106.4 | 101.4 | 104.4 |
| November | 101.8 | 104.1 | 104.8 | 100.6 | 101.5 | 101.8 | 100.7 | 103.3 | 104.8 | 99.9 | 100.8 |
| December | 97.2 | 99.7 | 97.8 | 95.4 | 95.0 | 98.6 | 99.4 | 98.9 | 98.8 | 96.1 | 96.1 |
| 1996^f | | | | | | | | | | | |
| January | 95.2 | 96.1 | 92.8 | 93.7 | 94.5 | 95.4 | 98.3 | 95.8 | 93.7 | 95.0 | 95.6 |
| February | 96.0 | 93.7 | 89.0 | 97.2 | 94.3 | 97.6 | 100.2 | 96.0 | 91.4 | 98.2 | 96.2 |
| March | 94.9 | 92.0 | 90.5 | 95.9 | 94.8 | 96.5 | 98.0 | 93.4 | 91.5 | 96.3 | 95.5 |
| April | 98.6 | 95.5 | 94.4 | 99.8 | 99.6 | 98.4 | 100.1 | 97.0 | 95.7 | 100.1 | 99.0 |
| May | 101.1 | 98.9 | 100.1 | 102.2 | 100.3 | 99.7 | 101.9 | 98.9 | 100.3 | 102.8 | 100.6 |
| June | 102.3 | 101.2 | 102.9 | 103.1 | 102.1 | 103.3 | 100.6 | 102.4 | 102.0 | 102.7 | 102.2 |
| July | 103.4 | 104.9 | 105.6 | 104.1 | 104.0 | 100.6 | 100.5 | 103.0 | 105.0 | 103.7 | 102.6 |
| August | 104.5 | 105.7 | 107.9 | 104.4 | 106.3 | 103.7 | 100.9 | 105.0 | 106.6 | 103.3 | 104.3 |
| September | 104.1 | 105.5 | 108.1 | 104.1 | 105.7 | 104.0 | 100.3 | 104.6 | 105.9 | 103.0 | 105.1 |
| October | 103.6 | 105.4 | 108.3 | 102.1 | 104.2 | 102.9 | 101.4 | 104.3 | 106.4 | 101.4 | 104.6 |
| November | 101.9 | 104.1 | 104.8 | 100.6 | 101.6 | 101.9 | 100.8 | 103.2 | 105.0 | 100.0 | 100.7 |
| December | 97.3 | 99.1 | 97.8 | 95.5 | 95.5 | 98.7 | 99.3 | 98.6 | 99.0 | 96.2 | 96.0 |
| 1997 | | | | | | | | | | | |
| January ^p | 95.3 | 96.4 | 93.1 | 93.7 | 94.6 | 95.3 | 98.4 | 96.0 | 93.8 | 95.0 | 95.6 |

^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 | 9.53 | 5.30 | 5.14 | 1.27 | 4.06 | 4 |
| Northeast | 18.41 | 16.35 | 16.28 | 1.84 | 8.86 | 9 |
| Midwest | 15.19 | 10.42 | 10.29 | 1.52 | 6.75 | 8 |
| South | 10.48 | 6.05 | 5.82 | 1.36 | 4.28 | 5 |
| West | 11.60 | 8.68 | 8.47 | 1.47 | 5.75 | 6 |
| 1 unit | | | | | | |
| Northeast | 15.97 | 11.87 | 11.71 | 1.62 | 7.21 | 8 |
| Midwest | 14.83 | 9.76 | 9.50 | 1.65 | 5.76 | 6 |
| South | 10.71 | 5.76 | 5.50 | 1.23 | 4.49 | 5 |
| West | 11.78 | 9.01 | 8.67 | 1.73 | 5.00 | 5 |
| 2 to 4 units | 22.51 | 18.46 | 18.51 | 1.99 | 9.29 | 12 |
| 5 units or more | 17.04 | 13.48 | 13.29 | 1.88 | 7.06 | 8 |
| UNITS UNDER CONSTRUCTION | | | | | | |
| U. S. total | 2.00 | 0.97 | 0.56 | 0.72 | 0.78 | 1 |
| Northeast | 2.67 | 1.73 | 1.04 | 1.36 | 0.77 | 1 |
| Midwest | 3.53 | 1.51 | 1.04 | 0.93 | 1.11 | 2 |
| South | 2.00 | 1.29 | 0.86 | 0.96 | 0.89 | 1 |
| West | 2.04 | 1.28 | 0.91 | 0.78 | 1.17 | 2 |
| 1 unit | | | | | | |
| Northeast | 3.05 | 1.87 | 1.10 | 1.42 | 0.77 | 1 |
| Midwest | 4.44 | 1.50 | 1.01 | 0.94 | 1.07 | 2 |
| South | 2.41 | 1.29 | 0.91 | 0.85 | 1.07 | 2 |
| West | 2.61 | 1.46 | 1.04 | 0.85 | 1.23 | 2 |
| 2 to 4 units | 3.33 | 3.05 | 2.31 | 1.87 | 1.24 | 2 |
| 5 units or more | 2.23 | 2.12 | 1.13 | 1.76 | 0.64 | 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 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 0.00 percent to 2.28 percent, with a median of 1.19 percent. The range of the difference between preliminary and final estimates was from 0.07 percent to 3.31 percent, with a median of 1.43 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 | 0.00 | 2.28 | 1.19 | 0.07 | 3.31 | 1.43 |
| In structures with- | | | | | | |
| 1 unit | 0.09 | 2.80 | 1.25 | 0.09 | 3.82 | 2.22 |
| 2 to 4 units | -17.86 | 15.38 | 0.00 | -14.29 | 14.81 | 0.00 |
| 5 units or more | -3.16 | 5.24 | 0.39 | -4.91 | 6.55 | 1.16 |
| Northeast | -4.07 | 11.65 | 2.34 | -4.88 | 8.74 | 3.51 |
| Midwest | -1.85 | 8.10 | 0.70 | -1.28 | 13.73 | 1.06 |
| South | -0.63 | 3.73 | 0.63 | -0.63 | 4.54 | 0.95 |
| West | -2.20 | 3.55 | 1.62 | -1.93 | 3.90 | 2.31 |