

APPENDIX F



DATA SETS USED IN APPLICATIONS

The following data sets are used in the examples and applications in the text. With the exception of the Bertschek and Lechner file, the data sets themselves can be downloaded either from the Web site for this text, pages.stern.nyu.edu/~wgreene/Text/econometricanalysis.htm, or from the URLs to the publicly accessible archives indicated as “*Location*.” The points in the text where the data are used for examples or suggested exercises are noted as “*Uses*.”

TABLE F1.1 Consumption and Income, 10 Yearly Observations, 2000–2009

Source: *Economic Report of the President*, 1987, Council of Economic Advisors

Location: Text Web site

Use: Example 1.2

TABLE F2.1 Consumption and Income, 11 Yearly Observations, 1940–1950

Source: *Economic Report of the President*, U.S. Government Printing Office, Washington, D.C., 1983

Location: Text Web site

Uses: Examples 2.1, 3.2, 16.3

TABLE F2.2 The U.S. Gasoline Market, 52 Yearly Observations 1953–2004

Source: The data were compiled by Professor Chris Bell, Department of Economics, University of North Carolina, Asheville. *Sources:* www.bea.gov and www.bls.gov.

Location: Text Web site

Uses: Examples 2.3, 4.2, 4.4, 4.8, 4.9, 6.9, 15.4, 20.2, 20.6, 21.1, 21.3

Sections 20.9.2

Applications 4.1, 5.3, 7.6, 7.7

TABLE F3.1 Investment, 15 Yearly Observations, 1968–1982

Source: *Economic Report of the President*, U.S. Government Printing Office, Washington, D.C., 1983

Location: Text Web site

Uses: Examples 3.1, 3.3

Section 3.2.2

Exercise 3.12

TABLE F3.2 Koop and Tobias Labor Market Experience, 17,919 Observations

Source: Koop and Tobias (2004)

Location: *Journal of Applied Econometrics* data archive,
<http://www.econ.queensu.ca/jae/2004-v19.7/koop-tobias/>.

Uses: Example 15.16

Applications 3.1, 5.1, 6.1, 6.2

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TABLE F4.1 Auction Data for Monet Paintings, 430 Observations

Source: Author
Location: Text Web site
Uses: Examples 4.5, 4.10, 5.8, 6.2, 11.2
 Section 4.7.6
 Exercise 4.17

TABLE F4.2 The Longley Data, 15 Yearly Observations, 1947–1962

Source: Longley (1967)
Location: Text Web site
Use: Example 4.11

TABLE F4.3 Movie Buzz Data, 62 Observations

Source: Author
Location: Text Web site
Uses: Examples 4.12, 6.3

TABLE F4.4 Cost Function, 158 1970 Cross-Section Firm Level Observations

Note: The file contains 158 observations. Christensen and Greene used the first 123. The extras are the holding companies. Use only the first 123 observations to replicate Christensen and Greene.
Source: Christensen and Greene (1976)
Location: Text Web site
Uses: Examples 7.11, 7.12
 Applications 4.2, 5.2, 7.5, 10.1, 19.4

TABLE F5.1 Labor Supply Data from Mroz (1987), 753 Observations

Source: 1976 Panel Study of Income Dynamics, Mroz (1987)
Location: Text Web site
Uses: Examples 5.2, 5.5, 6.1, 17.1, 17.8, 17.10, 19.11

TABLE F5.2 Macroeconomics Data Set, Quarterly, 1950I to 2000IV

Source: Department of Commerce, BEA Web site, and www.economagic.com
Location: Text Web site
Uses: Examples 5.3, 5.6, 5.7, 7.4, 7.8, 8.7, 8.10, 14.7, 16.3, 20.1, 20.3, 20.4, 21.2, 21.4, 21.5, 23.1, 23.2, 23.3, 23.4, 23.5
 Applications 5.4, 10.3, 20.1, 20.3, 21.1, 23.1, 23.2, 23.3
 Sections 21.5.1, 21.6.8.e, 23.2.4

TABLE F5.3 Production for SIC 33: Primary Metals, 27 Statewide Observations

Note: Data are per establishment, labor is a measure of labor input, and capital is the gross value of plant and equipment. A scale factor used to normalize the capital figure in the original study has been omitted. Further details on construction of the data are given in Aigner et al. (1977).
Source: Hildebrand and Liu (1957)
Location: Text Web site
Uses: Example 5.4
 Application 7.1

1180 PART VI ♦ Appendices**TABLE F6.1** Costs for U.S. Airlines, 90 Total Observations on 6 Firms for 1970–1984

Note: These data are a subset of a larger data set provided to the author by Professor Moshe Kim.

Source: Christensen Associates of Madison, Wisconsin

Location: Text Web site

Uses: Examples 6.4, 9.4, 14.6

Applications 9.3, 11.2

TABLE F6.2 Cost Function, 145 U.S. Electricity Producers, Nerlove's 1955 Data

Note: The data file contains several extra observations that are aggregates of commonly owned firms. Use only the first 145 for analysis.

Sources: Nerlove (1960) and Christensen and Greene (1976)

Location: Text Web site

Uses: Example 6.6

Section 10.5.1

TABLE F6.3 World Health Organization Panel Data, 840 Total Observations

Note: Variables marked * were updated with more recent sources in Greene (2004a). Missing values for some of the variables in this data set are filled by using fitted values from a linear regression.

Sources: The World Health Organization [Evans et al. (2000) and www.who.int]

Location: Text Web site

Uses: Examples 6.10, 11.4

TABLE F6.4 Solow's Technological Change Data, 41 Yearly Observations, 1909–1949

Source: Solow (1957, p. 314). Several variables are omitted

Location: Text Web site

Use: Application 6.3

TABLE F7.1 German Health Care Data, Unbalanced Panel, 7,293 Individuals, 27,326 Observations

Notes: In the applications in the text, the following additional variables are used:

NUMOBS = Number of observations for this person. Repeated in each row of data.

NEWHSAT = *HSAT*; 40 observations on *HSAT* recorded between 6 and 7 were changed to 7.

Frequencies are 1 = 1525, 2 = 1079, 3 = 825, 4 = 926, 5 = 1051, 6 = 1000, 7 = 887.

Source: Riphahn et al. (2003)

Location: *Journal of Applied Econometrics* data archive,

<http://qed.econ.queensu.ca/jae/2003-v18.4/riphahn-wambach-million/>

Uses: Examples 7.6, 11.16, 11.17, 13.7, 14.5, 14.9, 14.10, 14.14, 14.17, 17.4, 17.5, 17.7, 17.11, 17.13, 17.15, 17.16,

17.17, 17.18, 17.19, 17.20, 18.6, 18.7, 18.10, 18.12, 19.13

Section 14.9.5

Applications 14.1, 18.2, 18.3, 18.4

TABLE F7.2 Statewide Data on Transportation Equipment Manufacturing, 25 Observations

Note: "Value added," "Capital," and "Labor" in millions of 1957 dollars. Data used in regression examples are per establishment. Totals are used for the stochastic frontier application in Chapter 19.

Source: Zellner and Revankar (1970, p. 249)

Location: Text Web site

Uses: Example 7.9

Applications 7.2., 7.3

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TABLE F7.3 Expenditure and Default Data, 13,999 Observations*Source:* Greene (1992)*Location:* Text Web site*Uses:* Examples 7.10, 9.1, 17.9, 17.22, 18.8, 18.11**TABLE F8.1** Cornwell and Rupert, Labor Market Data, 595 Individuals, 7 years*Source:* See Cornwell and Rupert (1988)*Location:* Web site for Baltagi (2005), <http://www.wiley.com/legacy/wileychi/baltagi/supp/WAGES.xls>*Location (ASCII form):* Text Web site*Uses:* Examples 8.5, 8.6, 8.8, 11.1, 11.3, 11.5, 11.6, 11.7, 11.8, 11.9, 11.11, 11.15, 14.11, 15.6, 15.12**TABLE F9.1** Income and Expenditure Data. 100 Cross-Section Observations*Source:* Greene (1992)*Location:* Text Web site*Uses:* Examples 9.1, 9.2, 9.3**TABLE F9.2** Baltagi and Griffin Gasoline Data, 18 OECD Countries, 19 Years*Source:* See Baltagi and Griffin (1983) and Baltagi (2005)*Location:* Web site for Baltagi (2005), <http://www.wiley.com/legacy/wileychi/baltagi/supp/Gasoline.dat>*Uses:* Example 9.5

Application 9.2

TABLE F10.1 Munnell Productivity Data, 48 Continental U.S. States, 17 years, 1970–1986*Sources:* Munnell (1990) and Baltagi (2005)*Location:* Web site for Baltagi (2005), <http://www.wiley.com/legacy/wileychi/baltagi/supp/PRODUC.prn>*Uses:* Examples 10.1, 11.9, 14.12, 15.13, 15.15, 20.5**TABLE F10.2** Manufacturing Costs, U.S. Economy, 25 Yearly Observations, 1947–1971*Source:* Berndt and Wood (1975)*Location:* Text Web site*Use:* Example 10.3**TABLE F10.3** Klein's Model I, 22 Yearly Observations, 1920–1941*Source:* Klein (1950)*Location:* Text Web site*Use:* Examples 10.6**TABLE F10.4** Grunfeld Investment Data, 200 Yearly Observations on 10 Firms for 1935–1954*Sources:* Grunfeld (1958) and Boot and deWitt (1960)*Location:* Text Web site*Uses:* Example 14.8

Applications 10.2., 11.1

1182 PART VI ♦ Appendices**TABLE F13.1** Dahlberg and Johansson Expenditure Data, 265 Municipalities, 9 Years

Location: Journal of Applied Econometrics data archive

<http://qed.econ.queensu.ca/jae/2000-v15.4/dahlberg-johansson/dj-data.zip>

Uses: Examples 13.10, 21.7

TABLE F14.1 Program Effectiveness, 32 Cross-Section Observations

Source: Spector and Mazzeo (1980)

Location: Text Web site

Uses: Examples 14.15, 14.16, 17.3

TABLE F15.1 Bertsek and Lechner Binary Choice Data, Balanced Panel, 5 years, 1,270 firms

Source: Bertsek and Lechner (1998)

Location: These data are proprietary and may not be redistributed

Uses: Examples 15.17, 17.23

Section 12.4.1

TABLE F17.1 Burnett Analysis of Liberal Arts College Gender Economics Courses, 132 Observations

Source: Burnett (1997). Data provided by the author

Location: Text Web site

Use: Example 17.21

TABLE F17.2 Fair, Redbook Survey on Extramarital Affairs, 6,366 Observations

Source: Fair (1978), data provided by the author.

Location: Text Web site

Uses: Example 19.6

Applications 17.1, 18.1, 18.2, 19.2, 19.3

TABLE F18.1 Fair's (1977) Extramarital Affairs Data, 601 Cross-Section Observations

Note: Several variables not used are denoted $X_1, \dots, X_5$.

Source: Fair (1977)

Location: <http://fairmodel.econ.yale.edu/rayfair/pdf/1978ADAT.ZIP>

Location: Text Web site

Uses: Examples 18.1, 18.9

Application 19.1

TABLE F18.2 Data Used to Study Travel Mode Choice, 840 Observations, on 4 Modes for 210 Individuals

Source: Greene and Hensher (1997)

Location: Text Web site

Uses: Sections 18.2.9, 18.2.10

TABLE F18.3 Ship Accidents, 40 Observations, 5 Types, 4 Vintages, and 2 Service Periods

Source: McCullagh and Nelder (1983)

Location: Text Web site

Use: Application 18.5

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TABLE F19.1 Filippini, Farsi, Greene, Swiss Railroads Data, Unalanced Panel
50 Firms, 605 Observations

Source: Authors
Location: Text Web site
Use: Example 19.3

TABLE F19.2 Strike Duration Data, 63 Observations in 9 Years, 1968–1976

Source: Kennan (1985)
Location: Text Web site
Use: Example 19.8

TABLE F19.3 LaLonde (1986) Earnings Data, 2,490 Control Observations and
185 Treatment Observations

Note: We also scaled all earnings variables by 10,000 before beginning the analysis.
Source: LaLonde (1986)
Location: <http://www.nber.org/%7Erdehejia/nswdata.htm>. The two specific subsamples are in
[http://www.nber.org/%7Erdehejia/psid controls.txt](http://www.nber.org/%7Erdehejia/psid%20controls.txt) and
[http://www.nber.org/%7Erdehejia/nswre74 treated.txt](http://www.nber.org/%7Erdehejia/nswre74%20treated.txt)
Use: Example 19.15

TABLE F20.1 Bollerslev and Ghysels Exchange Rate Data, 1974 Daily
Observations

Source: Bollerslev (1986)
Location: Text Web site
Uses: Examples 20.7, 20.8

TABLE F22.1 Bond Yield, Moody's AAA Rated, Monthly, 60 Observations,
1990–1994

Sources: *National Income and Product Accounts*, U.S. Department of Commerce, Bureau of Economic
 Analysis, *Survey of Current Business: Business Statistics*
Location: Text Web site
Use: Example 22.1

TABLE F23.1 Money, Output, Price Deflator Data, 136 Quarterly Observations,
1950–1983

Sources: *National Income and Product Accounts*, U.S. Department of Commerce, Bureau of Economic
 Analysis, *Survey of Current Business: Business Statistics*
Location: Text Web site
Uses: Examples 23.1, 23.5

TABLE FC.1 Observations on Income and Education, 20 Observations

Source: Data are artificial
Location: Text Web site
Uses: Examples 13.5, 15.17, C.1, C.2

APPENDIX G ♦ Statistical Tables 1185

TABLE G.2 Percentiles of the Student's t Distribution. Table Entry Is x Such That $\text{Prob}[t_n \leq x] = P$

n	.750	.900	.950	.975	.990	.995
1	1.000	3.078	6.314	12.706	31.821	63.657
2	.816	1.886	2.920	4.303	6.965	9.925
3	.765	1.638	2.353	3.182	4.541	5.841
4	.741	1.533	2.132	2.776	3.747	4.604
5	.727	1.476	2.015	2.571	3.365	4.032
6	.718	1.440	1.943	2.447	3.143	3.707
7	.711	1.415	1.895	2.365	2.998	3.499
8	.706	1.397	1.860	2.306	2.896	3.355
9	.703	1.383	1.833	2.262	2.821	3.250
10	.700	1.372	1.812	2.228	2.764	3.169
11	.697	1.363	1.796	2.201	2.718	3.106
12	.695	1.356	1.782	2.179	2.681	3.055
13	.694	1.350	1.771	2.160	2.650	3.012
14	.692	1.345	1.761	2.145	2.624	2.977
15	.691	1.341	1.753	2.131	2.602	2.947
16	.690	1.337	1.746	2.120	2.583	2.921
17	.689	1.333	1.740	2.110	2.567	2.898
18	.688	1.330	1.734	2.101	2.552	2.878
19	.688	1.328	1.729	2.093	2.539	2.861
20	.687	1.325	1.725	2.086	2.528	2.845
21	.686	1.323	1.721	2.080	2.518	2.831
22	.686	1.321	1.717	2.074	2.508	2.819
23	.685	1.319	1.714	2.069	2.500	2.807
24	.685	1.318	1.711	2.064	2.492	2.797
25	.684	1.316	1.708	2.060	2.485	2.787
26	.684	1.315	1.706	2.056	2.479	2.779
27	.684	1.314	1.703	2.052	2.473	2.771
28	.683	1.313	1.701	2.048	2.467	2.763
29	.683	1.311	1.699	2.045	2.462	2.756
30	.683	1.310	1.697	2.042	2.457	2.750
35	.682	1.306	1.690	2.030	2.438	2.724
40	.681	1.303	1.684	2.021	2.423	2.704
45	.680	1.301	1.679	2.014	2.412	2.690
50	.679	1.299	1.676	2.009	2.403	2.678
60	.679	1.296	1.671	2.000	2.390	2.660
70	.678	1.294	1.667	1.994	2.381	2.648
80	.678	1.292	1.664	1.990	2.374	2.639
90	.677	1.291	1.662	1.987	2.368	2.632
100	.677	1.290	1.660	1.984	2.364	2.626
∞	.674	1.282	1.645	1.960	2.326	2.576

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TABLE G.3 Percentiles of the Chi-Squared Distribution. Table Entry Is c Such That $\text{Prob}[\chi_n^2 \leq c] = P$

n	.005	.010	.025	.050	.100	.250	.500	.750	.900	.950	.975	.990	.995
1	.00004	.0002	.001	.004	.02	.10	.45	1.32	2.71	3.84	5.02	6.63	7.88
2	.01	.02	.05	.10	.21	.58	1.39	2.77	4.61	5.99	7.38	9.21	10.60
3	.07	.11	.22	.35	.58	1.21	2.37	4.11	6.25	7.81	9.35	11.34	12.84
4	.21	.30	.48	.71	1.06	1.92	3.36	5.39	7.78	9.49	11.14	13.28	14.86
5	.41	.55	.83	1.15	1.61	2.67	4.35	6.63	9.24	11.07	12.83	15.09	16.75
6	.68	.87	1.24	1.64	2.20	3.45	5.35	7.84	10.64	12.59	14.45	16.81	18.55
7	.99	1.24	1.69	2.17	2.83	4.25	6.35	9.04	12.02	14.07	16.01	18.48	20.28
8	1.34	1.65	2.18	2.73	3.49	5.07	7.34	10.22	13.36	15.51	17.53	20.09	21.95
9	1.73	2.09	2.70	3.33	4.17	5.90	8.34	11.39	14.68	16.92	19.02	21.67	23.59
10	2.16	2.56	3.25	3.94	4.87	6.74	9.34	12.55	15.99	18.31	20.48	23.21	25.19
11	2.60	3.05	3.82	4.57	5.58	7.58	10.34	13.70	17.28	19.68	21.92	24.72	26.76
12	3.07	3.57	4.40	5.23	6.30	8.44	11.34	14.85	18.55	21.03	23.34	26.22	28.30
13	3.57	4.11	5.01	5.89	7.04	9.30	12.34	15.98	19.81	22.36	24.74	27.69	29.82
14	4.07	4.66	5.63	6.57	7.79	10.17	13.34	17.12	21.06	23.68	26.12	29.14	31.32
15	4.60	5.23	6.26	7.26	8.55	11.04	14.34	18.25	22.31	25.00	27.49	30.58	32.80
16	5.14	5.81	6.91	7.96	9.31	11.91	15.34	19.37	23.54	26.30	28.85	32.00	34.27
17	5.70	6.41	7.56	8.67	10.09	12.79	16.34	20.49	24.77	27.59	30.19	33.41	35.72
18	6.26	7.01	8.23	9.39	10.86	13.68	17.34	21.60	25.99	28.87	31.53	34.81	37.16
19	6.84	7.63	8.91	10.12	11.65	14.56	18.34	22.72	27.20	30.14	32.85	36.19	38.58
20	7.43	8.26	9.59	10.85	12.44	15.45	19.34	23.83	28.41	31.41	34.17	37.57	40.00
21	8.03	8.90	10.28	11.59	13.24	16.34	20.34	24.93	29.62	32.67	35.48	38.93	41.40
22	8.64	9.54	10.98	12.34	14.04	17.24	21.34	26.04	30.81	33.92	36.78	40.29	42.80
23	9.26	10.20	11.69	13.09	14.85	18.14	22.34	27.14	32.01	35.17	38.08	41.64	44.18
24	9.89	10.86	12.40	13.85	15.66	19.04	23.34	28.24	33.20	36.42	39.36	42.98	45.56
25	10.52	11.52	13.12	14.61	16.47	19.94	24.34	29.34	34.38	37.65	40.65	44.31	46.93
30	13.79	14.95	16.79	18.49	20.60	24.48	29.34	34.80	40.26	43.77	46.98	50.89	53.67
35	17.19	18.51	20.57	22.47	24.80	29.05	34.34	40.22	46.06	49.80	53.20	57.34	60.27
40	20.71	22.16	24.43	26.51	29.05	33.66	39.34	45.62	51.81	55.76	59.34	63.69	66.77
45	24.31	25.90	28.37	30.61	33.35	38.29	44.34	50.98	57.51	61.66	65.41	69.96	73.17
50	27.99	29.71	32.36	34.76	37.69	42.94	49.33	56.33	63.17	67.50	71.42	76.15	79.49

APPENDIX G ♦ Statistical Tables 1187

TABLE G.4 95th Percentiles of the F Distribution. Table Entry Is f Such That $\text{Prob}[F_{n_1, n_2} \leq f] = .95$

n_2	$n_1 = \text{Degrees of Freedom for the Numerator}$								
	1	2	3	4	5	6	7	8	9
1	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12
50	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07
70	3.98	3.13	2.74	2.50	2.35	2.23	2.14	2.07	2.02
100	3.94	3.09	2.70	2.46	2.31	2.19	2.10	2.03	1.97
∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88

n_2	10	12	15	20	30	40	50	60	∞
1	241.88	243.91	245.95	248.01	250.10	251.14	252.20	252.20	254.19
2	19.40	19.41	19.43	19.45	19.46	19.47	19.48	19.48	19.49
3	8.79	8.74	8.70	8.66	8.62	8.59	8.57	8.57	8.53
4	5.96	5.91	5.86	5.80	5.75	5.72	5.69	5.69	5.63
5	4.74	4.68	4.62	4.56	4.50	4.46	4.43	4.43	4.37
6	4.06	4.00	3.94	3.87	3.81	3.77	3.74	3.74	3.67
7	3.64	3.57	3.51	3.44	3.38	3.34	3.30	3.30	3.23
8	3.35	3.28	3.22	3.15	3.08	3.04	3.01	3.01	2.93
9	3.14	3.07	3.01	2.94	2.86	2.83	2.79	2.79	2.71
10	2.98	2.91	2.85	2.77	2.70	2.66	2.62	2.62	2.54
15	2.54	2.48	2.40	2.33	2.25	2.20	2.16	2.16	2.07
20	2.35	2.28	2.20	2.12	2.04	1.99	1.95	1.95	1.85
25	2.24	2.16	2.09	2.01	1.92	1.87	1.82	1.82	1.72
30	2.16	2.09	2.01	1.93	1.84	1.79	1.74	1.74	1.63
40	2.08	2.00	1.92	1.84	1.74	1.69	1.64	1.64	1.52
50	2.03	1.95	1.87	1.78	1.69	1.63	1.58	1.58	1.45
70	1.97	1.89	1.81	1.72	1.62	1.57	1.50	1.50	1.36
100	1.93	1.85	1.77	1.68	1.57	1.52	1.45	1.45	1.30
∞	1.83	1.75	1.67	1.57	1.46	1.39	1.34	1.31	1.30

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TABLE G.5 99th Percentiles of the F Distribution. Table Entry Is f Such That $\text{Prob}[F_{n_1, n_2} \leq f] = .99$

$n_1 = \text{Degrees of Freedom for the Numerator}$									
n_2	1	2	3	4	5	6	7	8	9
1	4052.18	4999.50	5403.35	5624.58	5763.65	5858.99	5928.36	5981.07	6022.47
2	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
3	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
4	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
5	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
6	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98
7	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
8	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91
9	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35
10	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46
25	7.77	5.57	4.68	4.18	3.85	3.63	3.46	3.32	3.22
30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07
40	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89
50	7.17	5.06	4.20	3.72	3.41	3.19	3.02	2.89	2.78
70	7.01	4.92	4.07	3.60	3.29	3.07	2.91	2.78	2.67
100	6.90	4.82	3.98	3.51	3.21	2.99	2.82	2.69	2.59
∞	6.66	4.63	3.80	3.34	3.04	2.82	2.66	2.53	2.43

n_2	10	12	15	20	30	40	50	60	∞
1	6055.85	6106.32	6157.28	6208.73	6260.65	6286.78	6313.03	6313.03	6362.68
2	99.40	99.42	99.43	99.45	99.47	99.47	99.48	99.48	99.50
3	27.23	27.05	26.87	26.69	26.50	26.41	26.32	26.32	26.14
4	14.55	14.37	14.20	14.02	13.84	13.75	13.65	13.65	13.47
5	10.05	9.89	9.72	9.55	9.38	9.29	9.20	9.20	9.03
6	7.87	7.72	7.56	7.40	7.23	7.14	7.06	7.06	6.89
7	6.62	6.47	6.31	6.16	5.99	5.91	5.82	5.82	5.66
8	5.81	5.67	5.52	5.36	5.20	5.12	5.03	5.03	4.87
9	5.26	5.11	4.96	4.81	4.65	4.57	4.48	4.48	4.32
10	4.85	4.71	4.56	4.41	4.25	4.17	4.08	4.08	3.92
15	3.80	3.67	3.52	3.37	3.21	3.13	3.05	3.05	2.88
20	3.37	3.23	3.09	2.94	2.78	2.69	2.61	2.61	2.43
25	3.13	2.99	2.85	2.70	2.54	2.45	2.36	2.36	2.18
30	2.98	2.84	2.70	2.55	2.39	2.30	2.21	2.21	2.02
40	2.80	2.66	2.52	2.37	2.20	2.11	2.02	2.02	1.82
50	2.70	2.56	2.42	2.27	2.10	2.01	1.91	1.91	1.70
70	2.59	2.45	2.31	2.15	1.98	1.89	1.78	1.78	1.56
100	2.50	2.37	2.22	2.07	1.89	1.80	1.69	1.69	1.45
∞	2.34	2.20	2.06	1.90	1.72	1.61	1.50	1.50	1.16

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TABLE G.6 Durbin–Watson Statistic: 5 Percent Significance Points of dL and dU

n	$k = 1$		$k = 2$		$k = 3$		$k = 4$		$k = 5$		$k = 10$		$k = 15$	
	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU	dL	dU
15	1.08	1.36	.95	1.54	.82	1.75	.69	1.97	.56	2.21				
16	1.10	1.37	.98	1.54	.86	1.73	.74	1.93	.62	2.15	.16	3.30		
17	1.13	1.38	1.02	1.54	.90	1.71	.78	1.90	.67	2.10	.20	3.18		
18	1.16	1.39	1.05	1.53	.93	1.69	.82	1.87	.71	2.06	.24	3.07		
19	1.18	1.40	1.08	1.53	.97	1.68	.86	1.85	.75	2.02	.29	2.97		
20	1.20	1.41	1.10	1.54	1.00	1.68	.90	1.83	.79	1.99	.34	2.89	.06	3.68
21	1.22	1.42	1.13	1.54	1.03	1.67	.93	1.81	.83	1.96	.38	2.81	.09	3.58
22	1.24	1.43	1.15	1.54	1.05	1.66	.96	1.80	.86	1.94	.42	2.73	.12	3.55
23	1.26	1.44	1.17	1.54	1.08	1.66	.99	1.79	.90	1.92	.47	2.67	.15	3.41
24	1.27	1.45	1.19	1.55	1.10	1.66	1.01	1.78	.93	1.90	.51	2.61	.19	3.33
25	1.29	1.45	1.21	1.55	1.12	1.66	1.04	1.77	.95	1.89	.54	2.57	.22	3.25
26	1.30	1.46	1.22	1.55	1.14	1.65	1.06	1.76	.98	1.88	.58	2.51	.26	3.18
27	1.32	1.47	1.24	1.56	1.16	1.65	1.08	1.76	1.01	1.86	.62	2.47	.29	3.11
28	1.33	1.48	1.26	1.56	1.18	1.65	1.10	1.75	1.03	1.85	.65	2.43	.33	3.05
29	1.34	1.48	1.27	1.56	1.20	1.65	1.12	1.74	1.05	1.84	.68	2.40	.36	2.99
30	1.35	1.49	1.28	1.57	1.21	1.65	1.14	1.74	1.07	1.83	.71	2.36	.39	2.94
31	1.36	1.50	1.30	1.57	1.23	1.65	1.16	1.74	1.09	1.83	.74	2.33	.43	2.99
32	1.37	1.50	1.31	1.57	1.24	1.65	1.18	1.73	1.11	1.82	.77	2.31	.46	2.84
33	1.38	1.51	1.32	1.58	1.26	1.65	1.19	1.73	1.13	1.81	.80	2.28	.49	2.80
34	1.39	1.51	1.33	1.58	1.27	1.65	1.21	1.73	1.15	1.81	.82	2.26	.52	2.75
35	1.40	1.52	1.34	1.53	1.28	1.65	1.22	1.73	1.16	1.80	.85	2.24	.55	2.72
36	1.41	1.52	1.35	1.59	1.29	1.65	1.24	1.73	1.18	1.80	.87	2.22	.58	2.68
37	1.42	1.53	1.36	1.59	1.31	1.66	1.25	1.72	1.19	1.80	.89	2.20	.60	2.65
38	1.43	1.54	1.37	1.59	1.32	1.66	1.26	1.72	1.21	1.79	.91	2.18	.63	2.61
39	1.43	1.54	1.38	1.60	1.33	1.66	1.27	1.72	1.22	1.79	.93	2.16	.65	2.59
40	1.44	1.54	1.39	1.60	1.34	1.66	1.29	1.72	1.23	1.79	.95	2.15	.68	2.56
45	1.48	1.57	1.43	1.62	1.38	1.67	1.34	1.72	1.29	1.78	1.04	2.09	.79	2.44
50	1.50	1.59	1.46	1.63	1.42	1.67	1.38	1.72	1.34	1.77	1.11	2.04	.88	2.35
55	1.53	1.60	1.49	1.64	1.45	1.68	1.41	1.72	1.38	1.77	1.17	2.01	.96	2.28
60	1.55	1.62	1.51	1.65	1.48	1.69	1.44	1.73	1.41	1.77	1.22	1.98	1.03	2.23
65	1.57	1.63	1.54	1.66	1.50	1.70	1.47	1.73	1.44	1.77	1.27	1.96	1.09	2.18
70	1.58	1.64	1.55	1.67	1.52	1.70	1.49	1.74	1.46	1.77	1.30	1.95	1.14	2.15
75	1.60	1.65	1.57	1.68	1.54	1.71	1.51	1.74	1.49	1.77	1.34	1.94	1.18	2.12
80	1.61	1.66	1.59	1.69	1.56	1.72	1.53	1.74	1.51	1.77	1.37	1.93	1.22	2.09
85	1.62	1.67	1.60	1.70	1.57	1.72	1.55	1.75	1.52	1.77	1.40	1.92	1.26	2.07
90	1.63	1.68	1.61	1.70	1.59	1.73	1.57	1.75	1.54	1.78	1.42	1.91	1.29	2.06
95	1.64	1.69	1.62	1.71	1.60	1.73	1.58	1.75	1.56	1.78	1.44	1.90	1.32	2.04
100	1.65	1.69	1.63	1.72	1.61	1.74	1.59	1.76	1.57	1.78	1.46	1.90	1.35	2.03

Source: Extracted from N.E. Savin and K.J. White, "The Durbin–Watson Test for Serial Correlation with Extreme Sample Sizes and Many Regressors," *Econometrica*, 45 (8), Nov. 1977, pp. 1992–1995.

Note: k is the number of regressors excluding the intercept.