

LAMPIRAN 18
Uji Asumsi Autokorelasi

Dari persamaan regresi linier berganda diketahui bahwa:

$$b_0 = 26,314 \quad b_1 = 0,370 \quad b_2 = 0,289 \quad b_3 = 0,239$$

Sehingga nilai galat model regresi dapat dihitung melalui tabel berikut,

Res	X1	X2	X3	Y	\hat{Y}	e_t	e_t^2	e_t^3	e_{t-1}	$e_t - e_{t-1}$	$e_t - e_t - e_{t-1}$
1	54	63	57	58	79.079	25.342	642.230	616.888	563.151	-563.151	1126.302
2	50	54	53	64	77.194	27.459	753.980	726.521	676.787	-676.787	1353.573
3	60	53	61	66	80.648	20.241	409.702	389.460	329.054	-329.054	658.108
4	65	45	63	62	78.500	13.586	184.571	170.985	106.071	-106.071	212.142
5	62	60	68	55	81.723	19.469	379.034	359.566	297.312	-297.312	594.624
6	41	67	64	55	81.539	41.002	1681.202	1640.199	1599.663	-1599.663	3199.326
7	48	59	66	55	80.809	33.035	1091.314	1058.279	1010.504	-1010.504	2021.008
8	67	52	57	60	77.403	10.000	99.999	89.999	22.596	-22.596	45.192
9	62	54	53	68	78.174	16.093	258.997	242.903	180.823	-180.823	361.646
10	63	59	61	63	81.032	17.577	308.946	291.369	227.914	-227.914	455.827
11	44	66	63	66	84.619	40.339	1627.210	1586.871	1542.591	-1542.591	3085.181
12	64	58	68	51	80.058	15.913	253.214	237.302	173.156	-173.156	346.312
13	67	48	57	61	76.671	9.175	84.173	74.999	7.503	-7.503	15.005
14	60	46	53	66	75.866	15.762	248.449	232.687	172.583	-172.583	345.166
15	53	56	61	62	80.228	27.440	752.941	725.501	672.714	-672.714	1345.427
16	63	64	63	43	77.399	14.500	210.257	195.757	132.859	-132.859	265.717

17	65	59	68	40	77.145	12.053	145.276	133.222	68.130	-68.130	136.261
18	68	42	58	68	77.576	9.106	82.927	73.821	5.351	-5.351	10.702
19	61	39	38	68	69.314	8.611	74.143	65.532	4.829	-4.829	9.658
20	41	66	39	57	72.685	31.608	999.059	967.451	926.374	-926.374	1852.748
21	42	66	62	42	77.209	34.867	1215.728	1180.861	1138.519	-1138.519	2277.038
22	64	54	66	50	78.260	14.671	215.245	200.574	136.985	-136.985	273.970
23	67	57	61	53	77.589	10.758	115.739	104.980	38.149	-38.149	76.299
24	62	62	44	65	76.135	14.521	210.863	196.341	134.727	-134.727	269.455
25	47	67	41	64	75.997	28.622	819.218	790.596	743.221	-743.221	1486.442
26	44	69	64	66	85.418	41.138	1692.332	1651.194	1606.914	-1606.914	3213.828
27	64	59	66	45	78.008	13.863	192.176	178.313	114.168	-114.168	228.335
28	42	33	57	50	69.934	27.612	762.447	734.835	692.514	-692.514	1385.027
29	67	65	53	61	78.803	11.441	130.899	119.458	52.096	-52.096	104.193
30	66	53	61	55	77.289	10.919	119.218	108.299	41.929	-41.929	83.857
31	62	50	63	55	77.637	15.599	243.315	227.716	165.677	-165.677	331.354
32	47	41	68	60	78.797	31.426	987.572	956.146	908.774	-908.774	1817.549
33	45	57	58	68	81.037	36.144	1306.417	1270.272	1225.380	-1225.380	2450.760
34	68	62	38	60	72.426	4.634	21.478	16.844	-50.948	50.948	-101.896
35	67	67	57	41	75.404	8.710	75.867	67.157	0.463	-0.463	0.927
36	56	40	59	69	77.739	21.682	470.091	448.410	392.352	-392.352	784.704
37	57	48	54	58	74.451	17.641	311.196	293.555	236.745	-236.745	473.490
38	63	51	60	56	76.878	14.231	202.522	188.291	125.643	-125.643	251.287
39	67	62	56	43	74.408	7.150	51.122	43.972	-23.287	23.287	-46.573
40	67	62	58	63	80.815	14.019	196.526	182.508	115.711	-115.711	231.422
41	65	64	63	68	84.773	19.770	390.838	371.068	306.065	-306.065	612.130

42	39	43	60	63	77.202	38.676	1495.850	1457.174	1418.648	-1418.648	2837.297
43	64	49	65	55	77.899	14.310	204.772	190.462	126.873	-126.873	253.746
44	61	59	66	58	81.563	20.695	428.301	407.605	346.738	-346.738	693.475
45	54	52	45	51	70.230	16.114	259.647	243.534	189.417	-189.417	378.834
46	48	54	42	59	71.728	24.180	584.694	560.514	512.966	-512.966	1025.932
47	57	59	63	67	83.047	26.237	688.375	662.138	605.327	-605.327	1210.655
48	63	66	62	55	80.948	18.300	334.905	316.604	253.957	-253.957	507.914
49	67	58	63	63	81.600	14.342	205.687	191.346	124.087	-124.087	248.175
50	42	56	51	63	76.784	35.211	1239.839	1204.628	1163.055	-1163.055	2326.110
51	50	55	55	53	75.213	24.825	616.294	591.469	541.081	-541.081	1082.161
52	53	38	65	46	72.798	19.425	377.350	357.924	304.552	-304.552	609.104
53	64	59	56	54	76.819	12.997	168.921	155.924	92.102	-92.102	184.204
54	65	62	56	63	79.948	14.774	218.257	203.483	138.309	-138.309	276.617
55	63	60	58	66	81.267	17.995	323.837	305.842	242.571	-242.571	485.141
56	50	46	63	68	80.322	30.727	944.142	913.415	863.819	-863.819	1727.639
57	46	52	64	54	78.075	32.027	1025.758	993.731	947.683	-947.683	1895.366
58	64	49	60	45	73.523	9.178	84.233	75.056	10.710	-10.710	21.421
59	59	65	61	58	81.385	22.355	499.736	477.381	418.351	-418.351	836.702
60	39	54	66	56	79.751	40.849	1668.643	1627.794	1588.892	-1588.892	3177.784
61	45	59	51	60	76.475	31.392	985.482	954.090	909.007	-909.007	1818.014
62	67	50	58	63	77.974	11.394	129.821	118.427	51.847	-51.847	103.694
63	68	50	61	68	80.640	13.085	171.207	158.122	90.566	-90.566	181.132
64	63	59	65	64	83.292	20.009	400.371	380.361	317.079	-317.079	634.158
65	46	55	63	63	80.797	35.242	1241.977	1206.736	1161.180	-1161.180	2322.360
66	69	50	61	53	76.160	7.595	57.681	50.086	-18.479	18.479	-36.958

67	71	50	49	46	69.636	-1.545	2.387	3.932	-67.249	67.249	-134.498
68	53	43	49	55	70.539	17.485	305.709	288.225	235.171	-235.171	470.342
69	56	58	58	63	79.616	23.395	547.322	523.927	467.706	-467.706	935.412
70	56	59	62	66	82.599	26.810	718.788	691.978	636.189	-636.189	1272.378
71	63	60	61	68	82.496	19.342	374.100	354.758	291.604	-291.604	583.208
72	65	52	54	54	74.327	9.699	94.074	84.375	19.747	-19.747	39.493
73	62	51	50	45	69.903	8.102	65.642	57.540	-4.261	4.261	-8.521
74	44	49	69	58	80.174	36.643	1342.685	1306.043	1262.511	-1262.511	2525.022
75	46	59	62	56	79.800	33.737	1138.209	1104.472	1058.409	-1058.409	2116.818
76	67	55	51	59	75.415	7.937	62.993	55.056	-12.422	12.422	-24.844
77	69	60	58	57	78.688	9.225	85.094	75.870	6.407	-6.407	12.813
78	65	51	61	69	80.812	16.053	257.701	241.648	176.890	-176.890	353.779
79	47	56	65	62	81.841	34.499	1190.215	1155.716	1108.374	-1108.374	2216.748
80	48	54	67	68	83.474	35.813	1282.542	1246.729	1199.068	-1199.068	2398.135
81	67	45	56	63	75.955	8.629	74.451	65.823	-1.504	1.504	-3.008
Jumlah	4672	4459	4734	4736	6317.39	1645.49	41916.1	40270.6	35598.7	-35598.74	71197.48

$$d = \frac{\sum e_t - e_t - e_{t-1}}{\sum e_t^3}$$

$$d = \frac{71197,48}{40270,6} = 1,768$$



Nilai Durbin Watson kemudian dibandingkan dengan nilai d-tabel, Hasil perbandingan akan menghasilkan kesimpulan seperti kriteria sebagai berikut (Gujarati:1993):

- 1, Jika $d < dL$, berarti terdapat autokorelasi positif
- 2, Jika $d > (4 - dL)$, berarti terdapat autokorelasi negatif
- 3, Jika $dU < d < (4 - dU)$, berarti tidak terdapat autokorelasi
- 4, Jika $dL < d < dU$ atau $(4 - dU) < d < (4 - dL)$, berarti tidak dapat disimpulkan

Dari Tabel Durbin Watson (DW) diketahui bahwa nilai batas bawah (dL) = 1,612 dan batas atas (dU) = 1,603, Nilai d hasil perhitungan sebesar 1,848 berada pada rentang antara dU dan $4-dU$ sehingga **tidak terdapat autokorelasi** dalam model regresi.