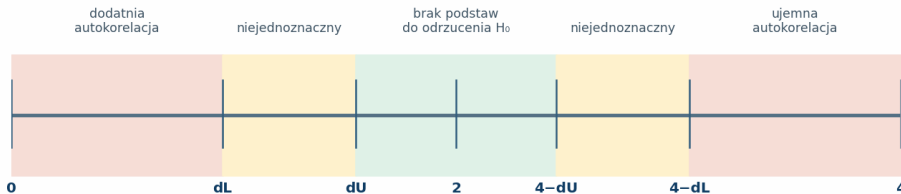




Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,05$ · $k = 1-10$; $n = 6-30$ 

Schemat klasycznej interpretacji granic d_L i d_U



$$d = \frac{\sum (e_t - e_{t-1})^2}{\sum e_t^2}$$

Jak czytać tablicę?

Wiersz oznacza liczbę obserwacji n , kolumna — liczbę regresorów k bez wyrazu wolnego. Każda komórka zawiera parę d_L / d_U .

Autokorelacja dodatnia: $d < d_L$ — odrzucamy H_0 ; $d_L \leq d \leq d_U$ — wynik nierozstrzygający; $d > d_U$ — brak podstaw do odrzucenia H_0 .

Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	1	2	3	4	5	6	7	8	9	10
6	,610 / 1,400	—	—	—	—	—	—	—	—	—
7	,700 / 1,356	,467 / 1,896	—	—	—	—	—	—	—	—
8	,763 / 1,332	,559 / 1,777	,367 / 2,287	—	—	—	—	—	—	—
9	,824 / 1,320	,629 / 1,699	,455 / 2,128	,296 / 2,588	—	—	—	—	—	—
10	,879 / 1,320	,697 / 1,641	,525 / 2,016	,376 / 2,414	,243 / 2,822	—	—	—	—	—
11	,927 / 1,324	,758 / 1,604	,595 / 1,928	,444 / 2,283	,315 / 2,645	,203 / 3,004	—	—	—	—
12	,971 / 1,331	,812 / 1,579	,658 / 1,864	,512 / 2,177	,380 / 2,506	,268 / 2,832	,171 / 3,149	—	—	—
13	1,010 / 1,340	,861 / 1,562	,715 / 1,816	,574 / 2,094	,444 / 2,390	,328 / 2,692	,230 / 2,985	,147 / 3,266	—	—
14	1,045 / 1,350	,905 / 1,551	,767 / 1,779	,632 / 2,030	,505 / 2,296	,389 / 2,572	,286 / 2,848	,200 / 3,111	,127 / 3,360	—
15	1,077 / 1,361	,946 / 1,543	,814 / 1,750	,685 / 1,977	,562 / 2,220	,447 / 2,471	,343 / 2,727	,251 / 2,979	,175 / 3,216	,111 / 3,438
16	1,106 / 1,371	,982 / 1,539	,857 / 1,728	,734 / 1,935	,615 / 2,157	,502 / 2,388	,398 / 2,624	,304 / 2,860	,222 / 3,090	,155 / 3,304
17	1,133 / 1,381	1,015 / 1,536	,897 / 1,710	,779 / 1,900	,664 / 2,104	,554 / 2,318	,451 / 2,537	,356 / 2,757	,272 / 2,975	,198 / 3,184
18	1,158 / 1,391	1,046 / 1,535	,933 / 1,696	,820 / 1,872	,710 / 2,060	,603 / 2,258	,502 / 2,461	,407 / 2,668	,321 / 2,873	,244 / 3,073
19	1,180 / 1,401	1,074 / 1,536	,967 / 1,685	,859 / 1,848	,752 / 2,023	,649 / 2,206	,549 / 2,396	,456 / 2,589	,369 / 2,783	,290 / 2,974
20	1,201 / 1,411	1,100 / 1,537	,998 / 1,676	,894 / 1,828	,792 / 1,991	,691 / 2,162	,595 / 2,339	,502 / 2,521	,416 / 2,704	,336 / 2,885
21	1,221 / 1,420	1,125 / 1,538	1,026 / 1,669	,927 / 1,812	,829 / 1,964	,731 / 2,124	,637 / 2,290	,546 / 2,461	,461 / 2,633	,380 / 2,806
22	1,239 / 1,429	1,147 / 1,541	1,053 / 1,664	,958 / 1,797	,863 / 1,940	,769 / 2,090	,677 / 2,246	,588 / 2,407	,504 / 2,571	,424 / 2,735
23	1,257 / 1,437	1,168 / 1,543	1,078 / 1,660	,986 / 1,785	,895 / 1,920	,804 / 2,061	,715 / 2,208	,628 / 2,360	,545 / 2,514	,465 / 2,670
24	1,273 / 1,446	1,188 / 1,546	1,101 / 1,656	1,013 / 1,775	,925 / 1,902	,837 / 2,035	,750 / 2,174	,666 / 2,318	,584 / 2,464	,506 / 2,613
25	1,288 / 1,454	1,206 / 1,550	1,123 / 1,654	1,038 / 1,767	,953 / 1,886	,868 / 2,013	,784 / 2,144	,702 / 2,280	,621 / 2,419	,544 / 2,560
26	1,302 / 1,461	1,224 / 1,553	1,143 / 1,652	1,062 / 1,759	,979 / 1,873	,897 / 1,992	,816 / 2,117	,735 / 2,246	,657 / 2,379	,581 / 2,513

n \ k	1	2	3	4	5	6	7	8	9	10
27	1,316 / 1,469	1,240 / 1,556	1,162 / 1,651	1,084 / 1,753	1,004 / 1,861	,925 / 1,974	,845 / 2,093	,767 / 2,216	,691 / 2,342	,616 / 2,470
28	1,328 / 1,476	1,255 / 1,560	1,181 / 1,650	1,104 / 1,747	1,028 / 1,850	,951 / 1,959	,874 / 2,071	,798 / 2,188	,723 / 2,309	,649 / 2,431
29	1,341 / 1,483	1,270 / 1,563	1,198 / 1,650	1,124 / 1,743	1,050 / 1,841	,975 / 1,944	,900 / 2,052	,826 / 2,164	,753 / 2,278	,681 / 2,396
30	1,352 / 1,489	1,284 / 1,567	1,214 / 1,650	1,143 / 1,739	1,071 / 1,833	,998 / 1,931	,926 / 2,034	,854 / 2,141	,782 / 2,251	,712 / 2,363



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,05$ · $k = 1-10$; $n = 31-200$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	1	2	3	4	5	6	7	8	9	10
31	1,363 / 1,496	1,297 / 1,570	1,229 / 1,650	1,160 / 1,735	1,090 / 1,825	1,020 / 1,920	,950 / 2,018	,879 / 2,120	,810 / 2,226	,741 / 2,333
32	1,373 / 1,502	1,309 / 1,574	1,244 / 1,650	1,177 / 1,732	1,109 / 1,819	1,041 / 1,909	,972 / 2,004	,904 / 2,102	,836 / 2,203	,769 / 2,306
33	1,383 / 1,508	1,321 / 1,577	1,258 / 1,651	1,193 / 1,730	1,127 / 1,813	1,061 / 1,900	,994 / 1,991	,927 / 2,085	,861 / 2,181	,796 / 2,281
34	1,393 / 1,514	1,333 / 1,580	1,271 / 1,652	1,208 / 1,728	1,144 / 1,808	1,079 / 1,891	1,015 / 1,978	,950 / 2,069	,885 / 2,162	,821 / 2,257
35	1,402 / 1,519	1,343 / 1,584	1,283 / 1,653	1,222 / 1,726	1,160 / 1,803	1,097 / 1,884	1,034 / 1,967	,971 / 2,054	,908 / 2,144	,845 / 2,236
36	1,411 / 1,525	1,354 / 1,587	1,295 / 1,654	1,236 / 1,724	1,175 / 1,799	1,114 / 1,876	1,053 / 1,957	,991 / 2,041	,930 / 2,127	,868 / 2,216
37	1,419 / 1,530	1,364 / 1,590	1,307 / 1,655	1,249 / 1,723	1,190 / 1,795	1,131 / 1,870	1,071 / 1,948	1,011 / 2,029	,951 / 2,112	,891 / 2,197
38	1,427 / 1,535	1,373 / 1,594	1,318 / 1,656	1,261 / 1,722	1,204 / 1,792	1,146 / 1,864	1,088 / 1,939	1,029 / 2,017	,970 / 2,098	,912 / 2,180
39	1,435 / 1,540	1,382 / 1,597	1,328 / 1,658	1,273 / 1,722	1,218 / 1,789	1,161 / 1,859	1,104 / 1,932	1,047 / 2,007	,990 / 2,085	,932 / 2,164
40	1,442 / 1,544	1,391 / 1,600	1,338 / 1,659	1,285 / 1,721	1,230 / 1,786	1,175 / 1,854	1,120 / 1,924	1,064 / 1,997	1,008 / 2,072	,952 / 2,149
45	1,475 / 1,566	1,430 / 1,615	1,383 / 1,666	1,336 / 1,720	1,287 / 1,776	1,238 / 1,835	1,189 / 1,895	1,139 / 1,958	1,089 / 2,022	1,038 / 2,088
50	1,503 / 1,585	1,462 / 1,628	1,421 / 1,674	1,378 / 1,721	1,335 / 1,771	1,291 / 1,822	1,246 / 1,875	1,201 / 1,930	1,156 / 1,986	1,110 / 2,044
55	1,528 / 1,601	1,490 / 1,641	1,452 / 1,681	1,414 / 1,724	1,374 / 1,768	1,334 / 1,814	1,294 / 1,861	1,253 / 1,909	1,212 / 1,959	1,170 / 2,010
60	1,549 / 1,616	1,514 / 1,652	1,480 / 1,689	1,444 / 1,727	1,408 / 1,767	1,372 / 1,808	1,335 / 1,850	1,298 / 1,894	1,260 / 1,939	1,222 / 1,984
65	1,567 / 1,629	1,536 / 1,662	1,503 / 1,696	1,471 / 1,731	1,438 / 1,767	1,404 / 1,805	1,370 / 1,843	1,336 / 1,882	1,301 / 1,923	1,266 / 1,964
70	1,583 / 1,641	1,554 / 1,672	1,525 / 1,703	1,494 / 1,735	1,464 / 1,768	1,433 / 1,802	1,401 / 1,838	1,369 / 1,874	1,337 / 1,910	1,305 / 1,948
75	1,598 / 1,652	1,571 / 1,680	1,543 / 1,709	1,515 / 1,739	1,487 / 1,770	1,458 / 1,801	1,428 / 1,834	1,399 / 1,867	1,369 / 1,901	1,339 / 1,935
80	1,611 / 1,662	1,586 / 1,688	1,560 / 1,715	1,534 / 1,743	1,507 / 1,772	1,480 / 1,801	1,453 / 1,831	1,425 / 1,861	1,397 / 1,893	1,369 / 1,925
85	1,624 / 1,671	1,600 / 1,696	1,575 / 1,721	1,550 / 1,747	1,525 / 1,774	1,500 / 1,801	1,474 / 1,829	1,448 / 1,857	1,422 / 1,886	1,396 / 1,916
90	1,635 / 1,679	1,612 / 1,703	1,589 / 1,726	1,566 / 1,751	1,542 / 1,776	1,518 / 1,801	1,494 / 1,827	1,469 / 1,854	1,445 / 1,881	1,420 / 1,909
95	1,645 / 1,687	1,623 / 1,709	1,602 / 1,732	1,579 / 1,755	1,557 / 1,778	1,535 / 1,802	1,512 / 1,827	1,489 / 1,852	1,465 / 1,877	1,442 / 1,903
100	1,654 / 1,694	1,634 / 1,715	1,613 / 1,736	1,592 / 1,758	1,571 / 1,780	1,550 / 1,803	1,528 / 1,826	1,506 / 1,850	1,484 / 1,874	1,462 / 1,898
150	1,720 / 1,747	1,706 / 1,760	1,693 / 1,774	1,679 / 1,788	1,665 / 1,802	1,651 / 1,817	1,637 / 1,832	1,622 / 1,846	1,608 / 1,862	1,593 / 1,877
200	1,758 / 1,779	1,748 / 1,789	1,738 / 1,799	1,728 / 1,809	1,718 / 1,820	1,707 / 1,831	1,697 / 1,841	1,686 / 1,852	1,675 / 1,863	1,665 / 1,874



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,05$ · $k = 11-20$; $n = 6-30$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	11	12	13	14	15	16	17	18	19	20
6	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—	—
16	,098 / 3,503	—	—	—	—	—	—	—	—	—
17	,138 / 3,378	,087 / 3,557	—	—	—	—	—	—	—	—
18	,177 / 3,265	,123 / 3,441	,078 / 3,603	—	—	—	—	—	—	—
19	,220 / 3,159	,160 / 3,335	,111 / 3,496	,070 / 3,642	—	—	—	—	—	—
20	,263 / 3,063	,200 / 3,234	,145 / 3,395	,100 / 3,542	,063 / 3,676	—	—	—	—	—
21	,307 / 2,976	,240 / 3,141	,182 / 3,300	,132 / 3,448	,091 / 3,583	,058 / 3,705	—	—	—	—
22	,349 / 2,897	,281 / 3,057	,220 / 3,211	,166 / 3,358	,120 / 3,495	,083 / 3,619	,052 / 3,731	—	—	—
23	,391 / 2,826	,322 / 2,979	,259 / 3,128	,202 / 3,272	,153 / 3,409	,110 / 3,535	,076 / 3,650	,048 / 3,753	—	—
24	,431 / 2,761	,362 / 2,908	,297 / 3,053	,239 / 3,193	,186 / 3,327	,141 / 3,454	,101 / 3,572	,070 / 3,678	,044 / 3,773	—
25	,470 / 2,702	,400 / 2,844	,335 / 2,983	,275 / 3,119	,221 / 3,251	,172 / 3,376	,130 / 3,494	,094 / 3,604	,065 / 3,702	,041 / 3,790
26	,508 / 2,649	,438 / 2,784	,373 / 2,919	,312 / 3,051	,256 / 3,179	,205 / 3,303	,160 / 3,420	,120 / 3,531	,087 / 3,632	,060 / 3,724
27	,544 / 2,600	,475 / 2,730	,409 / 2,859	,348 / 2,987	,291 / 3,112	,238 / 3,233	,191 / 3,349	,149 / 3,460	,112 / 3,563	,081 / 3,658
28	,578 / 2,555	,510 / 2,680	,445 / 2,805	,383 / 2,928	,325 / 3,050	,271 / 3,168	,222 / 3,283	,178 / 3,392	,138 / 3,495	,104 / 3,592
29	,612 / 2,515	,544 / 2,634	,479 / 2,755	,418 / 2,874	,359 / 2,992	,305 / 3,107	,254 / 3,219	,208 / 3,327	,166 / 3,431	,129 / 3,528
30	,643 / 2,477	,577 / 2,592	,512 / 2,708	,451 / 2,823	,392 / 2,937	,337 / 3,050	,286 / 3,160	,238 / 3,266	,195 / 3,368	,156 / 3,465



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,05$ · $k = 11-20$; $n = 31-200$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	11	12	13	14	15	16	17	18	19	20
31	,674 / 2,443	,608 / 2,553	,545 / 2,665	,484 / 2,776	,425 / 2,887	,370 / 2,996	,317 / 3,103	,269 / 3,208	,224 / 3,309	,183 / 3,406
32	,703 / 2,411	,638 / 2,517	,576 / 2,625	,515 / 2,733	,457 / 2,840	,401 / 2,946	,349 / 3,050	,299 / 3,153	,253 / 3,252	,211 / 3,348
33	,731 / 2,382	,668 / 2,484	,606 / 2,588	,546 / 2,692	,488 / 2,796	,432 / 2,899	,379 / 3,000	,329 / 3,100	,283 / 3,198	,239 / 3,293
34	,758 / 2,355	,695 / 2,454	,634 / 2,554	,575 / 2,654	,518 / 2,754	,462 / 2,854	,409 / 2,954	,359 / 3,051	,312 / 3,147	,267 / 3,240
35	,783 / 2,330	,722 / 2,425	,662 / 2,521	,604 / 2,619	,547 / 2,716	,492 / 2,813	,439 / 2,910	,388 / 3,005	,340 / 3,099	,295 / 3,190
36	,808 / 2,306	,748 / 2,398	,689 / 2,492	,631 / 2,586	,575 / 2,680	,520 / 2,774	,467 / 2,868	,417 / 2,961	,369 / 3,053	,323 / 3,142
37	,831 / 2,285	,772 / 2,374	,714 / 2,464	,657 / 2,555	,602 / 2,646	,548 / 2,738	,495 / 2,829	,445 / 2,920	,397 / 3,009	,351 / 3,097
38	,854 / 2,265	,796 / 2,351	,739 / 2,438	,683 / 2,526	,628 / 2,614	,575 / 2,703	,522 / 2,792	,472 / 2,880	,424 / 2,968	,378 / 3,054
39	,875 / 2,246	,819 / 2,329	,763 / 2,413	,707 / 2,499	,653 / 2,585	,600 / 2,671	,549 / 2,757	,499 / 2,843	,451 / 2,929	,404 / 3,013
40	,896 / 2,228	,840 / 2,309	,785 / 2,391	,731 / 2,473	,678 / 2,557	,626 / 2,641	,575 / 2,724	,525 / 2,808	,477 / 2,829	,430 / 2,974
45	,988 / 2,156	,938 / 2,225	,887 / 2,296	,838 / 2,367	,788 / 2,439	,740 / 2,512	,692 / 2,586	,644 / 2,659	,598 / 2,733	,553 / 2,807
50	1,064 / 2,103	1,019 / 2,163	,973 / 2,225	,927 / 2,287	,882 / 2,350	,836 / 2,414	,792 / 2,479	,747 / 2,544	,703 / 2,610	,660 / 2,675
55	1,129 / 2,062	1,087 / 2,116	1,045 / 2,170	1,003 / 2,225	,961 / 2,281	,919 / 2,338	,877 / 2,396	,836 / 2,454	,795 / 2,512	,754 / 2,571
60	1,184 / 2,031	1,145 / 2,079	1,106 / 2,127	1,068 / 2,177	1,029 / 2,227	,990 / 2,278	,951 / 2,330	,913 / 2,382	,874 / 2,434	,836 / 2,487
65	1,231 / 2,006	1,195 / 2,049	1,160 / 2,093	1,124 / 2,138	1,088 / 2,183	1,052 / 2,229	1,016 / 2,276	,980 / 2,323	,944 / 2,371	,908 / 2,419
70	1,272 / 1,987	1,239 / 2,026	1,206 / 2,066	1,172 / 2,106	1,139 / 2,148	1,105 / 2,189	1,072 / 2,232	1,038 / 2,275	1,005 / 2,318	,971 / 2,362
75	1,308 / 1,970	1,277 / 2,006	1,247 / 2,043	1,215 / 2,080	1,184 / 2,118	1,153 / 2,156	1,121 / 2,195	1,090 / 2,235	1,058 / 2,275	1,027 / 2,315
80	1,340 / 1,957	1,311 / 1,991	1,283 / 2,024	1,253 / 2,059	1,224 / 2,093	1,195 / 2,129	1,165 / 2,165	1,136 / 2,201	1,106 / 2,238	1,076 / 2,275
85	1,369 / 1,946	1,342 / 1,977	1,315 / 2,009	1,287 / 2,040	1,260 / 2,073	1,232 / 2,105	1,205 / 2,139	1,177 / 2,172	1,149 / 2,206	1,121 / 2,241
90	1,395 / 1,937	1,369 / 1,966	1,344 / 1,995	1,318 / 2,025	1,292 / 2,055	1,266 / 2,085	1,240 / 2,116	1,213 / 2,148	1,187 / 2,179	1,160 / 2,211
95	1,418 / 1,930	1,394 / 1,956	1,370 / 1,984	1,345 / 2,012	1,321 / 2,040	1,296 / 2,068	1,271 / 2,097	1,247 / 2,126	1,222 / 2,156	1,197 / 2,186
100	1,439 / 1,923	1,416 / 1,948	1,393 / 1,974	1,371 / 2,000	1,347 / 2,026	1,324 / 2,053	1,301 / 2,080	1,277 / 2,108	1,253 / 2,135	1,229 / 2,164
150	1,579 / 1,892	1,564 / 1,908	1,550 / 1,924	1,535 / 1,940	1,519 / 1,956	1,504 / 1,972	1,489 / 1,989	1,474 / 2,006	1,458 / 2,023	1,443 / 2,040
200	1,654 / 1,885	1,643 / 1,896	1,632 / 1,908	1,621 / 1,919	1,610 / 1,931	1,599 / 1,943	1,588 / 1,955	1,576 / 1,967	1,565 / 1,979	1,554 / 1,991



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,01$ · $k = 1-10$; $n = 6-30$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	1	2	3	4	5	6	7	8	9	10
6	,390 / 1,142	—	—	—	—	—	—	—	—	—
7	,435 / 1,036	,294 / 1,676	—	—	—	—	—	—	—	—
8	,497 / 1,003	,345 / 1,489	,229 / 2,102	—	—	—	—	—	—	—
9	,554 / ,998	,408 / 1,389	,279 / 1,875	,183 / 2,433	—	—	—	—	—	—
10	,604 / 1,001	,466 / 1,333	,340 / 1,733	,230 / 2,193	,150 / 2,690	—	—	—	—	—
11	,653 / 1,010	,519 / 1,297	,396 / 1,640	,286 / 2,030	,193 / 2,453	,124 / 2,892	—	—	—	—
12	,697 / 1,023	,569 / 1,274	,449 / 1,575	,339 / 1,913	,244 / 2,280	,164 / 2,665	,105 / 3,053	—	—	—
13	,738 / 1,038	,616 / 1,261	,499 / 1,526	,391 / 1,826	,294 / 2,150	,211 / 2,490	,140 / 2,838	,090 / 3,182	—	—
14	,776 / 1,054	,660 / 1,254	,547 / 1,490	,441 / 1,757	,343 / 2,049	,257 / 2,354	,183 / 2,667	,122 / 2,981	,078 / 3,287	—
15	,811 / 1,070	,700 / 1,252	,591 / 1,465	,487 / 1,705	,390 / 1,967	,303 / 2,244	,226 / 2,530	,161 / 2,817	,107 / 3,101	,068 / 3,374
16	,844 / 1,086	,738 / 1,253	,633 / 1,447	,532 / 1,664	,437 / 1,901	,349 / 2,153	,269 / 2,416	,200 / 2,681	,142 / 2,944	,094 / 3,201
17	,873 / 1,102	,773 / 1,255	,672 / 1,432	,574 / 1,631	,481 / 1,847	,393 / 2,078	,313 / 2,319	,241 / 2,566	,179 / 2,811	,127 / 3,053
18	,902 / 1,118	,805 / 1,259	,708 / 1,422	,614 / 1,604	,522 / 1,803	,435 / 2,015	,355 / 2,238	,282 / 2,467	,216 / 2,697	,160 / 2,925
19	,928 / 1,133	,835 / 1,264	,742 / 1,416	,650 / 1,583	,561 / 1,767	,476 / 1,963	,396 / 2,169	,322 / 2,381	,255 / 2,597	,196 / 2,813
20	,952 / 1,147	,862 / 1,270	,774 / 1,410	,684 / 1,567	,598 / 1,736	,515 / 1,918	,436 / 2,110	,362 / 2,308	,294 / 2,510	,232 / 2,714
21	,975 / 1,161	,889 / 1,276	,803 / 1,408	,718 / 1,554	,634 / 1,712	,552 / 1,881	,474 / 2,059	,400 / 2,244	,331 / 2,434	,268 / 2,625
22	,997 / 1,174	,915 / 1,284	,832 / 1,407	,748 / 1,543	,666 / 1,691	,587 / 1,849	,510 / 2,015	,437 / 2,188	,368 / 2,367	,304 / 2,548
23	1,017 / 1,186	,938 / 1,290	,858 / 1,407	,777 / 1,535	,699 / 1,674	,620 / 1,821	,545 / 1,977	,473 / 2,140	,404 / 2,308	,340 / 2,479
24	1,037 / 1,199	,959 / 1,298	,881 / 1,407	,805 / 1,527	,728 / 1,659	,652 / 1,797	,578 / 1,944	,507 / 2,097	,439 / 2,255	,375 / 2,417
25	1,055 / 1,210	,981 / 1,305	,906 / 1,408	,832 / 1,521	,756 / 1,645	,682 / 1,776	,610 / 1,915	,540 / 2,059	,473 / 2,209	,409 / 2,362
26	1,072 / 1,222	1,000 / 1,311	,928 / 1,410	,855 / 1,517	,782 / 1,635	,711 / 1,759	,640 / 1,889	,572 / 2,026	,505 / 2,168	,441 / 2,313
27	1,088 / 1,232	1,019 / 1,318	,948 / 1,413	,878 / 1,514	,808 / 1,625	,738 / 1,743	,669 / 1,867	,602 / 1,997	,536 / 2,131	,473 / 2,269
28	1,104 / 1,244	1,036 / 1,325	,969 / 1,414	,901 / 1,512	,832 / 1,618	,764 / 1,729	,696 / 1,847	,630 / 1,970	,566 / 2,098	,504 / 2,229
29	1,119 / 1,254	1,053 / 1,332	,988 / 1,418	,921 / 1,511	,855 / 1,611	,788 / 1,718	,723 / 1,830	,658 / 1,947	,595 / 2,068	,533 / 2,193
30	1,134 / 1,264	1,070 / 1,339	1,006 / 1,421	,941 / 1,510	,877 / 1,606	,812 / 1,707	,748 / 1,814	,684 / 1,925	,622 / 2,041	,562 / 2,160



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,01$ · $k = 1-10$; $n = 31-200$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \backslash k$	1	2	3	4	5	6	7	8	9	10
31	1,147 / 1,274	1,085 / 1,345	1,022 / 1,425	,960 / 1,509	,897 / 1,601	,834 / 1,698	,772 / 1,800	,710 / 1,906	,649 / 2,017	,589 / 2,131
32	1,160 / 1,283	1,100 / 1,351	1,039 / 1,428	,978 / 1,509	,917 / 1,597	,856 / 1,690	,794 / 1,788	,734 / 1,889	,674 / 1,995	,615 / 2,104
33	1,171 / 1,291	1,114 / 1,358	1,055 / 1,432	,995 / 1,510	,935 / 1,594	,876 / 1,683	,816 / 1,776	,757 / 1,874	,698 / 1,975	,641 / 2,080
34	1,184 / 1,298	1,128 / 1,364	1,070 / 1,436	1,012 / 1,511	,954 / 1,591	,896 / 1,677	,837 / 1,766	,779 / 1,860	,722 / 1,957	,665 / 2,057
35	1,195 / 1,307	1,141 / 1,370	1,085 / 1,439	1,028 / 1,512	,971 / 1,589	,914 / 1,671	,857 / 1,757	,800 / 1,847	,744 / 1,940	,689 / 2,037
36	1,205 / 1,315	1,153 / 1,376	1,098 / 1,442	1,043 / 1,513	,987 / 1,587	,932 / 1,666	,877 / 1,749	,821 / 1,836	,766 / 1,925	,711 / 2,018
37	1,217 / 1,322	1,164 / 1,383	1,112 / 1,446	1,058 / 1,514	1,004 / 1,585	,950 / 1,662	,895 / 1,742	,841 / 1,825	,787 / 1,911	,733 / 2,001
38	1,227 / 1,330	1,176 / 1,388	1,124 / 1,449	1,072 / 1,515	1,019 / 1,584	,966 / 1,658	,913 / 1,735	,860 / 1,816	,807 / 1,899	,754 / 1,985
39	1,237 / 1,337	1,187 / 1,392	1,137 / 1,452	1,085 / 1,517	1,033 / 1,583	,982 / 1,655	,930 / 1,729	,878 / 1,807	,826 / 1,887	,774 / 1,970
40	1,246 / 1,344	1,197 / 1,398	1,149 / 1,456	1,098 / 1,518	1,047 / 1,583	,997 / 1,652	,946 / 1,724	,895 / 1,799	,844 / 1,876	,793 / 1,956
45	1,288 / 1,376	1,245 / 1,424	1,201 / 1,474	1,156 / 1,528	1,111 / 1,583	1,065 / 1,643	1,019 / 1,704	,974 / 1,768	,927 / 1,834	,881 / 1,902
50	1,324 / 1,403	1,285 / 1,445	1,245 / 1,491	1,206 / 1,537	1,164 / 1,587	1,123 / 1,639	1,081 / 1,692	1,039 / 1,748	,997 / 1,805	,955 / 1,864
55	1,356 / 1,428	1,320 / 1,466	1,284 / 1,505	1,246 / 1,548	1,209 / 1,592	1,172 / 1,638	1,134 / 1,685	1,095 / 1,734	1,057 / 1,785	1,018 / 1,837
60	1,382 / 1,449	1,351 / 1,484	1,317 / 1,520	1,283 / 1,559	1,248 / 1,598	1,214 / 1,639	1,179 / 1,682	1,144 / 1,726	1,108 / 1,771	1,072 / 1,817
65	1,407 / 1,467	1,377 / 1,500	1,346 / 1,534	1,314 / 1,568	1,283 / 1,604	1,251 / 1,642	1,218 / 1,680	1,186 / 1,720	1,153 / 1,761	1,120 / 1,802
70	1,429 / 1,485	1,400 / 1,514	1,372 / 1,546	1,343 / 1,577	1,313 / 1,611	1,283 / 1,645	1,253 / 1,680	1,223 / 1,716	1,192 / 1,754	1,162 / 1,792
75	1,448 / 1,501	1,422 / 1,529	1,395 / 1,557	1,368 / 1,586	1,340 / 1,617	1,313 / 1,649	1,284 / 1,682	1,256 / 1,714	1,227 / 1,748	1,199 / 1,783
80	1,465 / 1,514	1,440 / 1,541	1,416 / 1,568	1,390 / 1,595	1,364 / 1,624	1,338 / 1,653	1,312 / 1,683	1,285 / 1,714	1,259 / 1,745	1,232 / 1,777
85	1,481 / 1,529	1,458 / 1,553	1,434 / 1,577	1,411 / 1,603	1,386 / 1,630	1,362 / 1,657	1,337 / 1,685	1,312 / 1,714	1,287 / 1,743	1,262 / 1,773
90	1,496 / 1,541	1,474 / 1,563	1,452 / 1,587	1,429 / 1,611	1,406 / 1,636	1,383 / 1,661	1,360 / 1,687	1,336 / 1,714	1,312 / 1,741	1,288 / 1,769
95	1,510 / 1,552	1,489 / 1,573	1,468 / 1,596	1,446 / 1,618	1,425 / 1,641	1,403 / 1,666	1,381 / 1,690	1,358 / 1,715	1,336 / 1,741	1,313 / 1,767
100	1,522 / 1,562	1,502 / 1,582	1,482 / 1,604	1,461 / 1,625	1,441 / 1,647	1,421 / 1,670	1,400 / 1,693	1,378 / 1,717	1,357 / 1,741	1,335 / 1,765
150	1,611 / 1,637	1,598 / 1,651	1,584 / 1,665	1,571 / 1,679	1,557 / 1,693	1,543 / 1,708	1,530 / 1,722	1,515 / 1,737	1,501 / 1,752	1,486 / 1,767
200	1,664 / 1,684	1,653 / 1,693	1,643 / 1,704	1,633 / 1,715	1,623 / 1,725	1,613 / 1,735	1,603 / 1,746	1,592 / 1,757	1,582 / 1,768	1,571 / 1,779



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,01$ · $k = 11-20$; $n = 6-30$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	11	12	13	14	15	16	17	18	19	20
6	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—	—
16	,060 / 3,446	—	—	—	—	—	—	—	—	—
17	,084 / 3,286	,053 / 3,506	—	—	—	—	—	—	—	—
18	,113 / 3,146	,075 / 3,358	,047 / 3,557	—	—	—	—	—	—	—
19	,145 / 3,023	,102 / 3,227	,067 / 3,420	,043 / 3,601	—	—	—	—	—	—
20	,178 / 2,914	,131 / 3,109	,092 / 3,297	,061 / 3,474	,038 / 3,639	—	—	—	—	—
21	,212 / 2,817	,162 / 3,004	,119 / 3,185	,084 / 3,358	,055 / 3,521	,035 / 3,671	—	—	—	—
22	,246 / 2,729	,194 / 2,909	,148 / 3,084	,109 / 3,252	,077 / 3,412	,050 / 3,562	,032 / 3,700	—	—	—
23	,281 / 2,651	,227 / 2,822	,178 / 2,991	,136 / 3,155	,100 / 3,311	,070 / 3,459	,046 / 3,597	,029 / 3,725	—	—
24	,315 / 2,580	,260 / 2,744	,209 / 2,906	,165 / 3,065	,125 / 3,218	,092 / 3,363	,065 / 3,501	,043 / 3,629	,027 / 3,747	—
25	,348 / 2,517	,292 / 2,674	,240 / 2,829	,194 / 2,982	,152 / 3,131	,116 / 3,274	,085 / 3,410	,060 / 3,538	,039 / 3,657	,025 / 3,766
26	,381 / 2,460	,324 / 2,610	,272 / 2,758	,224 / 2,906	,180 / 3,050	,141 / 3,191	,107 / 3,325	,079 / 3,452	,055 / 3,572	,036 / 3,682
27	,413 / 2,409	,356 / 2,552	,303 / 2,694	,253 / 2,836	,208 / 2,976	,167 / 3,113	,131 / 3,245	,100 / 3,371	,073 / 3,490	,051 / 3,602
28	,444 / 2,363	,387 / 2,499	,333 / 2,635	,283 / 2,772	,237 / 2,907	,194 / 3,040	,156 / 3,169	,122 / 3,294	,093 / 3,412	,068 / 3,524
29	,474 / 2,321	,417 / 2,451	,363 / 2,582	,313 / 2,713	,266 / 2,843	,222 / 2,972	,182 / 3,098	,146 / 3,220	,114 / 3,338	,087 / 3,450
30	,503 / 2,283	,447 / 2,407	,393 / 2,533	,342 / 2,659	,294 / 2,785	,249 / 2,909	,208 / 3,032	,171 / 3,152	,137 / 3,267	,107 / 3,379



Test Durbina-Watsona — granice d_L i d_U

Model OLS z wyrazem wolnym · $\alpha = 0,01$ · $k = 11-20$; $n = 31-200$ Granice d_L / d_U dla modelu z wyrazem wolnym. Dla autokorelacji ujemnej stosuje się analogicznie statystykę $4 - d$.Wartości w komórkach: d_L / d_U . Znak „—” oznacza, że liczba regresorów k nie może być tak duża przy danej liczbie obserwacji n .

$n \setminus k$	11	12	13	14	15	16	17	18	19	20
31	,531 / 2,248	,475 / 2,367	,422 / 2,487	,371 / 2,609	,322 / 2,730	,277 / 2,851	,234 / 2,970	,193 / 3,087	,160 / 3,201	,128 / 3,311
32	,558 / 2,216	,503 / 2,330	,450 / 2,446	,399 / 2,563	,350 / 2,680	,304 / 2,797	,261 / 2,912	,221 / 3,026	,184 / 3,137	,151 / 3,246
33	,585 / 2,187	,530 / 2,296	,477 / 2,408	,426 / 2,520	,377 / 2,633	,331 / 2,746	,287 / 2,858	,246 / 2,969	,209 / 3,078	,174 / 3,184
34	,610 / 2,160	,556 / 2,266	,503 / 2,373	,452 / 2,481	,404 / 2,590	,357 / 2,699	,313 / 2,808	,272 / 2,915	,233 / 3,022	,197 / 3,126
35	,634 / 2,136	,581 / 2,237	,529 / 2,340	,478 / 2,444	,430 / 2,550	,383 / 2,655	,339 / 2,761	,297 / 2,865	,257 / 2,969	,221 / 3,071
36	,658 / 2,113	,605 / 2,210	,554 / 2,310	,504 / 2,410	,455 / 2,512	,409 / 2,614	,364 / 2,717	,322 / 2,818	,282 / 2,919	,244 / 3,019
37	,680 / 2,092	,628 / 2,186	,578 / 2,282	,528 / 2,379	,480 / 2,477	,434 / 2,576	,389 / 2,675	,347 / 2,774	,306 / 2,872	,268 / 2,969
38	,702 / 2,073	,651 / 2,164	,601 / 2,256	,552 / 2,350	,504 / 2,445	,458 / 2,540	,414 / 2,637	,371 / 2,733	,330 / 2,828	,291 / 2,923
39	,723 / 2,055	,673 / 2,143	,623 / 2,232	,575 / 2,323	,528 / 2,414	,482 / 2,507	,438 / 2,600	,395 / 2,694	,354 / 2,787	,315 / 2,879
40	,744 / 2,039	,694 / 2,123	,645 / 2,210	,597 / 2,297	,551 / 2,386	,505 / 2,476	,461 / 2,566	,418 / 2,657	,377 / 2,748	,338 / 2,838
45	,835 / 1,972	,790 / 2,044	,744 / 2,118	,700 / 2,193	,655 / 2,269	,612 / 2,346	,570 / 2,424	,528 / 2,503	,488 / 2,582	,448 / 2,661
50	,913 / 1,925	,871 / 1,987	,829 / 2,051	,787 / 2,116	,746 / 2,182	,705 / 2,250	,665 / 2,318	,625 / 2,387	,586 / 2,456	,548 / 2,526
55	,979 / 1,891	,940 / 1,945	,902 / 2,002	,863 / 2,059	,825 / 2,117	,786 / 2,176	,748 / 2,237	,711 / 2,298	,674 / 2,359	,637 / 2,421
60	1,037 / 1,865	1,001 / 1,914	,965 / 1,964	,929 / 2,015	,893 / 2,067	,857 / 2,120	,822 / 2,173	,786 / 2,227	,751 / 2,283	,716 / 2,338
65	1,087 / 1,845	1,053 / 1,889	1,020 / 1,934	,986 / 1,980	,953 / 2,027	,919 / 2,075	,886 / 2,123	,852 / 2,172	,819 / 2,221	,789 / 2,272
70	1,131 / 1,831	1,099 / 1,870	1,068 / 1,911	1,037 / 1,953	1,005 / 1,995	,974 / 2,038	,943 / 2,082	,911 / 2,127	,880 / 2,172	,849 / 2,217
75	1,170 / 1,819	1,141 / 1,856	1,111 / 1,893	1,082 / 1,931	1,052 / 1,970	1,023 / 2,009	,993 / 2,049	,964 / 2,090	,934 / 2,131	,905 / 2,172
80	1,205 / 1,810	1,177 / 1,844	1,150 / 1,878	1,122 / 1,913	1,094 / 1,949	1,066 / 1,984	1,039 / 2,022	1,011 / 2,059	,983 / 2,097	,955 / 2,135
85	1,236 / 1,803	1,210 / 1,834	1,184 / 1,866	1,158 / 1,898	1,132 / 1,931	1,106 / 1,965	1,080 / 1,999	1,053 / 2,033	1,027 / 2,068	1,000 / 2,104
90	1,264 / 1,798	1,240 / 1,827	1,215 / 1,856	1,191 / 1,886	1,166 / 1,917	1,141 / 1,948	1,116 / 1,979	1,091 / 2,012	1,066 / 2,044	1,041 / 2,077
95	1,290 / 1,793	1,267 / 1,821	1,244 / 1,848	1,221 / 1,876	1,197 / 1,905	1,174 / 1,943	1,150 / 1,963	1,126 / 1,993	1,102 / 2,023	1,079 / 2,054
100	1,314 / 1,790	1,292 / 1,816	1,270 / 1,841	1,248 / 1,868	1,225 / 1,895	1,203 / 1,922	1,181 / 1,949	1,158 / 1,977	1,136 / 2,006	1,113 / 2,034
150	1,473 / 1,783	1,458 / 1,799	1,444 / 1,814	1,429 / 1,830	1,414 / 1,847	1,400 / 1,863	1,385 / 1,880	1,370 / 1,897	1,355 / 1,913	1,340 / 1,931
200	1,561 / 1,791	1,550 / 1,801	1,539 / 1,813	1,528 / 1,824	1,518 / 1,836	1,507 / 1,847	1,495 / 1,860	1,484 / 1,871	1,474 / 1,883	1,462 / 1,896