A.4 Critical Values of the t Distribution

The critical value $t_{k,q}$ is the value below which lies an area q under the density curve of the t distribution with k degrees of freedom. That is, quantile q of the t_k distribution. Tabled are these critical values $t_{k,q}$ for selected degrees of freedom k and quantiles q. This is shown graphically in Figure A.2, in which the curve represents a t_k density curve. The critical value $t_{k,q}$ is the value t in the figure for which the shaded area equals q.

Note that a t distribution with degrees of freedom ∞ is a $N(0,1)$ distribution.

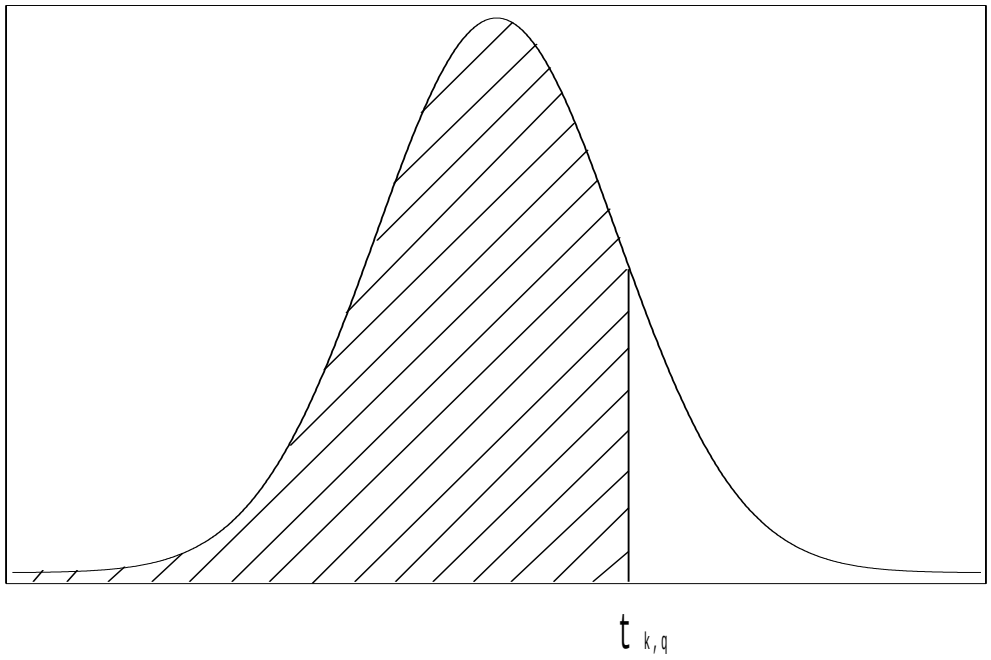

Figure A.2: t_k *Curve: Shaded Area is* q*;* $t_{k,q}$ *is Tabled*

	Critical Values of the t Distribution						
Degrees of Freedom, k	$t_{k,.90}$	$t_{k,.95}$	$t_{k,.975}$	$t_{k,.99}$	$t_{k,.995}$	$t_{k,.999}$	$t_{k,.9995}$
1	3.0777	6.3137	12.7062	31.8205	63.6567	318.3090	636.6190
2	1.8856	2.9200	4.3027	6.9646	9.9248	22.3270	31.5990
3	1.6377	2.3534	3.1824	4.5407	5.8409	10.2150	12.9240
4	1.5332	2.1319	2.7764	3.7469	4.6041	7.1730	8.6100
5	1.4759	2.0150	2.5706	3.3649	4.0321	5.8930	6.8690
6	1.4398	1.9432	2.4469	3.1427	3.7074	5.2080	5.9590
7	1.4149	1.8946	2.3646	2.9980	3.4995	4.7850	5.4080
8	1.3968	1.8595	2.3060	2.8965	3.3554	4.5010	5.0410
9	1.3830	1.8331	2.2622	2.8214	3.2498	4.2970	4.7810
10	1.3722	1.8125	2.2281	2.7638	3.1693	4.1440	4.5870
11	1.3634	1.7959	2.2010	2.7181	3.1058	4.0250	4.4370
12	1.3562	1.7823	2.1788	2.6810	3.0545	3.9300	4.3180
13	1.3502	1.7709	2.1604	2.6503	3.0123	3.8520	4.2210
14	1.3450	1.7613	2.1448	2.6245	2.9768	3.7870	4.1400
15	1.3406	1.7530	2.1314	2.6025	2.9467	3.7330	4.0730
16	1.3368	1.7459	2.1199	2.5835	2.9208	3.6860	4.0150
17	1.3334	1.7396	2.1098	2.5669	2.8982	3.6460	3.9650
18	1.3304	1.7341	2.1009	2.5524	2.8784	3.6100	3.9220
19	1.3277	1.7291	2.0930	2.5395	2.8609	3.5790	3.8830
20	1.3253	1.7247	2.0860	2.5280	2.8453	3.5520	3.8500
21	1.3232	1.7207	2.0796	2.5176	2.8314	3.5270	3.8190
22	1.3212	1.7171	2.0739	2.5083	2.8188	3.5050	3.7920
23	1.3195	1.7139	2.0687	2.4999	2.8073	3.4850	3.7680
24	1.3178	1.7109	2.0639	2.4922	2.7969	3.4670	3.7450
25	1.3163	1.7081	2.0595	2.4851	2.7874	3.4500	3.7250
26	1.3150	1.7056	2.0555	2.4786	2.7787	3.4350	3.7066
27	1.3137	1.7033	2.0518	2.4727	2.7707	3.4210	3.6896
28	1.3125	1.7011	2.0484	2.4671	2.7633	3.4082	3.6739
29	1.3114	1.6991	2.0452	2.4620	2.7564	3.3962	3.6594
30	1.3104	1.6973	2.0423	2.4573	2.7500	3.3852	3.6460
35	1.3062	1.6896	2.0301	2.4377	2.7238	3.3400	3.5912
40	1.3031	1.6839	2.0211	2.4233	2.7045	3.3069	3.5510
50	1.2987	1.6759	2.0086	2.4033	2.6778	3.2614	3.4960
60	1.2958	1.6707	2.0003	2.3901	2.6603	3.2317	3.4602
70	1.2938	1.6669	1.9944	2.3808	2.6479	3.2108	3.4350
80	1.2922	1.6641	1.9901	2.3739	2.6387	3.1953	3.4163
90	1.2910	1.6620	1.9867	2.3685	2.6316	3.1833	3.4019
100	1.2901	1.6602	1.9840	2.3642	2.6259	3.1737	3.3905
∞	1.2816	1.6449	1.9600	2.3263	2.5758	3.0902	3.2905