

TABLE 7.9 Effect of differences in x_0 on the width of 95% confidence intervals for \hat{y}_0 in simulated data

x_0	\hat{y}_0	$\sum_{i=1}^n (x_i - x_0)^2$	Standard deviation of \hat{y}_0	Lower bound of confidence interval for $E(y_0)$	Upper bound of confidence interval for $E(y_0)$	Width of confidence interval for $E(y_0)$
4	-5,824.6	89,500	2,565.3	-10,853	-796.57	10,056
8	12,330	33,500	1,569.5	9,253.6	15,406	6,152.4
9	16,868	24,500	1,342.2	14,238	19,499	5,261.4
10	21,407	17,500	1,134.4	19,184	23,630	4,446.7
11	25,946	12,500	958.71	24,067	27,825	3,758.1
12	30,484	9,500	835.78	28,846	32,122	3,276.3
13	35,023	8,500	790.57	33,473	36,572	3,099.0
14	39,561	9,500	835.78	37,923	41,200	3,276.3
15	44,100	12,500	958.71	42,221	45,979	3,758.1
16	48,639	17,500	1,134.4	46,415	50,862	4,446.7
17	53,177	24,500	1,342.2	50,547	55,808	5,261.4
18	57,716	33,500	1,569.5	54,640	60,792	6,152.3
22	75,870	89,500	2,565.3	70,842	80,898	10,056

NOTE: Sample size is 1,000. $\sigma/\sqrt{n} = 790.57$.