

TABLE 10.2 Theoretical and actual OLS bias due to measurement error

<i>Simulation</i>	<i>Variance of measurement error, $SD(v_i)$</i>	<i>Bias in OLS estimate of β, $V(x_i^*)/(V(x_i^*) + V(v_i))$</i>	<i>Asymptotic value of OLS estimate of β, $\beta V(x_i^*)/(V(x_i^*) + V(v_i))$</i>	<i>OLS sample estimate of β, b</i>
1	1.0	$8.5/(8.5 + 1) = .8947$	3,578.9	3,564.5
2	2.25	$8.5/(8.5 + 2.25) = .7907$	3,162.8	3,177.6
3	4.0	$8.5/(8.5 + 4) = .6800$	2,720.0	2,694.7
4	6.25	$8.5/(8.5 + 6.25) = .5763$	2,305.1	2,365.0
5	9.0	$8.5/(8.5 + 9) = .4857$	1,942.9	1,926.4
6	12.25	$8.5/(8.5 + 12.25) = .4096$	1,638.6	1,633.4