

TABLE 12.1 Two Stage Least Squares Estimates of the Demand for Cigarettes Using Panel Data for 48 U.S. States

Dependent variable: $\ln(Q_{i,1995}^{cigarettes}) - \ln(Q_{i,1985}^{cigarettes})$

| Regressor | (1) | (2) | (3) |
|---|-----------------------------------|-----------------------------------|---|
| $\ln(P_{i,1995}^{cigarettes}) - \ln(P_{i,1985}^{cigarettes})$ | -0.94 (0.21) [-1.36, -0.52] | -1.34 (0.23) [-1.80, -0.88] | -1.20 (0.20) [-1.60, -0.81] |
| $\ln(Inc_{i,1995}) - \ln(Inc_{i,1985})$ | 0.53 (0.34) [-0.16, 1.21] | 0.43 (0.30) [-0.16, 1.02] | 0.46 (0.31) [-0.16, 1.09] |
| Intercept | -0.12 (0.07) | -0.02 (0.07) | -0.05 (0.06) |
| Instrumental variable(s) | Sales tax | Cigarette-specific tax | Both sales tax and cigarette-specific tax |
| First-stage F -statistic | 33.7 | 107.2 | 88.6 |
| Overidentifying restrictions J -test and p -value | — | — | 4.93 (0.026) |

These regressions were estimated using data for 48 U.S. states (48 observations on the 10-year differences). The data are described in Appendix 12.1. The J -test of overidentifying restrictions is described in Key Concept 12.6 (its p -value is given in parentheses), and the first-stage F -statistic is described in Key Concept 12.5. Heteroskedasticity-robust standard errors are given in parentheses beneath coefficients, and 95% confidence intervals are given in brackets.