

# Chetty, Looney, and Kroft (2009) Replication

Key

March 1, 2023

## References

Chetty, Raj, Adam Looney, and Kory Kroft (2009). “Salience and Taxation: Theory and Evidence”. In: *American Economic Review* 99.4, pp. 1145–1177.

Table 5—Summary Statistics for State Beer Consumption, Taxes, and Regulation

|                                       |                 |
|---------------------------------------|-----------------|
| Per capita beer consumption (cans)    | 243.2<br>(46.1) |
| State beer excise tax (\$/case)       | 0.51<br>(0.51)  |
| State beer excise tax (percent)       | 6.5<br>(8.2)    |
| Sales tax (percent)                   | 4.3<br>(1.9)    |
| Drinking age is 21                    | 0.73<br>(0.44)  |
| Drunk driving standard                | 0.65<br>(0.47)  |
| Any alcohol regulation change         | 0.19<br>(0.39)  |
| <i>N</i> (number of state-year pairs) | 1,666           |

*Notes:* Statistics reported are means with standard deviations in parentheses. Observations are by state for each year from 1970 to 2003. “Drinking age is 21” is an indicator for whether the state-year has a legal drinking age of 21. “Drunk driving standard” indicates state-year has a threshold blood alcohol content level above which one is automatically guilty of drunk driving. “Any alcohol regulation change” is a dummy variable equal to one in any year where a state has raised the drinking age or implemented a stricter drunk driving standard, an administrative license revocation law, or a zero tolerance youth drunk driving law. See Web Appendix A for data sources and sample definition.

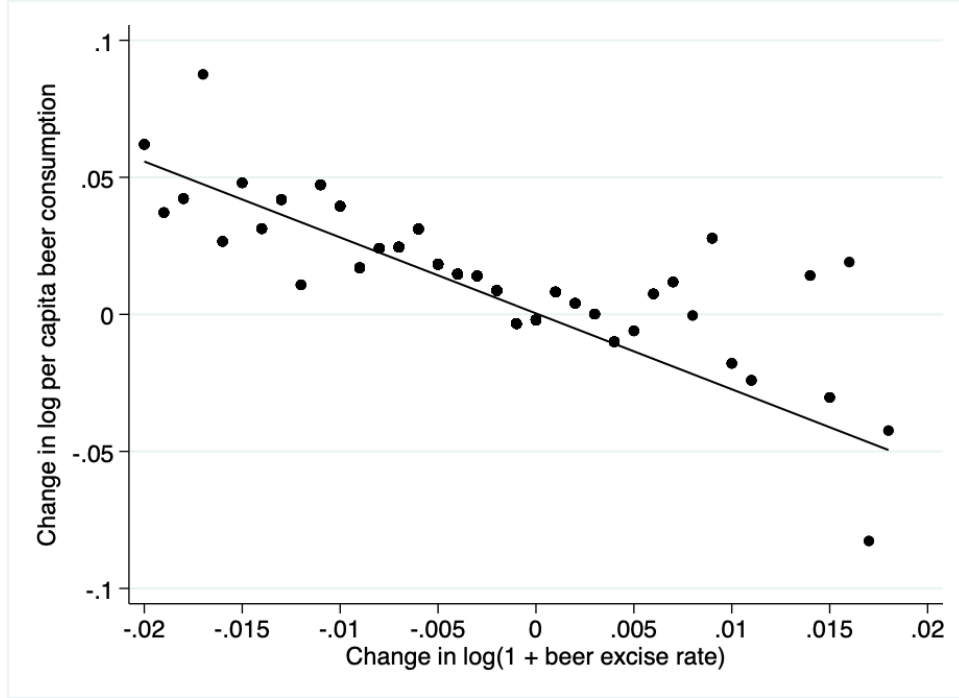


Figure 2A. Per Capita Beer Consumption and State Beer Excise Taxes

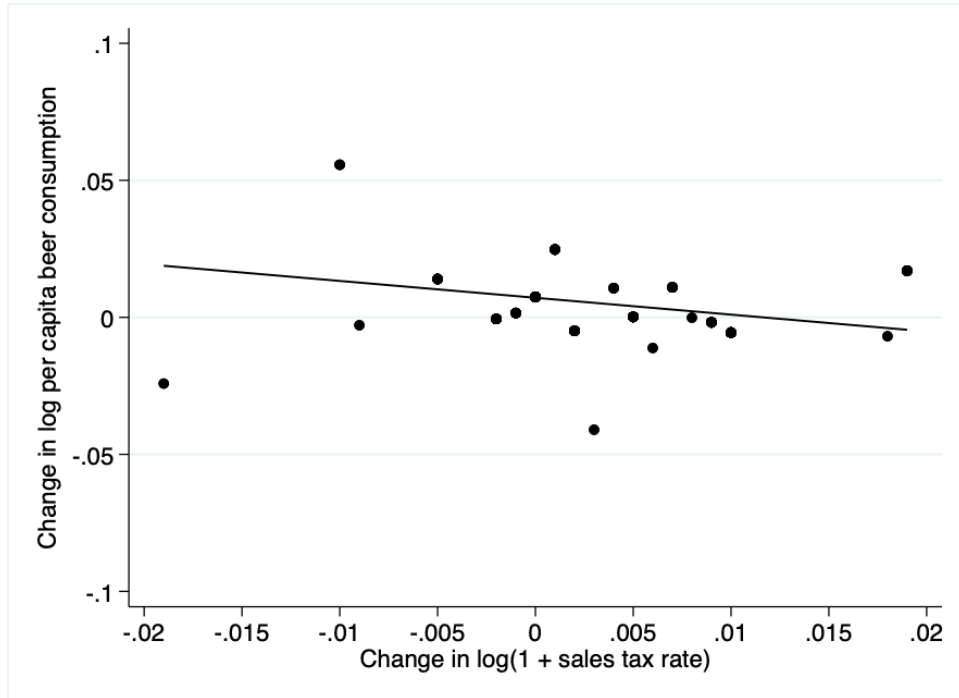


Figure 2B. Per Capita Beer Consumption and State Sales Taxes

*Notes:* These figures plot within-state annual changes in beer consumption against within-state changes in gross-of-tax-prices ( $1 + t^E$  and  $1 + t^S$ ). To construct Figure 2A, we round each state excise tax change to the nearest tenth of a percent (0.1 percent), and compute the mean change in log beer consumption for observations with the same rounded excise tax change. Figure 2A plots the mean consumption change against the rounded excise tax rates. Figure 2B is constructed analogously, rounding sales tax changes to the nearest 0.1 percent. See Web Appendix A for data sources and sample definition.

Table 6—Effect of Excise and Sales Taxes on Beer Consumption

|  | Baseline<br>(1) | Business cycle<br>(2) | Alcohol regulations<br>(3) | Region trends<br>(4) |
|--|-----------------|-----------------------|----------------------------|----------------------|
| Dependent variable: Change in log(per capita beer consumption) |                 |                       |                            |                      |
| $\Delta \log(1 + \text{excise tax rate})$                      | -0.88<br>(0.17) | -0.91<br>(0.17)       | -0.89<br>(0.17)            | -0.71<br>(0.18)      |
| $\Delta \log(1 + \text{sales tax rate})$                       | -0.20<br>(0.30) | -0.01<br>(0.30)       | -0.02<br>(0.30)            | -0.05<br>(0.30)      |
| $\Delta \log(\text{population})$                               | 0.03<br>(0.06)  | -0.07<br>(0.07)       | -0.07<br>(0.07)            | -0.09<br>(0.08)      |
| $\Delta \log(\text{income per capita})$                        |                 | 0.22<br>(0.05)        | 0.22<br>(0.05)             | 0.22<br>(0.05)       |
| $\Delta \log(\text{unemployment rate})$                        |                 | -0.01<br>(0.01)       | -0.01<br>(0.01)            | -0.01<br>(0.01)      |
| Alcohol regulation controls                                    |                 |                       | X                          | X                    |
| Year fixed effects   | X               | X                     | X                          | X                    |
| Region fixed effects   |                 |                       |                            | X                    |
| $F$ -test for equality of tax elasticities (prob > $F$ )       | 0.05            | 0.01                  | 0.01                       | 0.06                 |
| Sample size  | 1,607           | 1,487                 | 1,487                      | 1,487                |

*Notes:* Standard errors, clustered by state, in parentheses. All specifications are estimated on full sample for which data are available (state unemployment rate data are unavailable in early years). Column 3 includes three indicators for whether the state implemented per se drunk driving standards, administrative license revocation laws, or zero tolerance youth drunk driving laws, and the change in the minimum drinking age (measured in years). Column 4 includes fixed effects for each of nine census regions.  $F$ -test tests null hypothesis that coefficients on excise and sales tax rate variables are equal.

Table 7—Effect of Excise and Sales Taxes on Beer Consumption: Robustness Checks

|  | Dependent variable: Change in log(per capita beer consumption) |                              |                       | Dep. var.                         |
|--|--|------------------------------|-----------------------|-----------------------------------|
|  | IV for excise w/<br>policy<br>(1)                              | 3-Year<br>differences<br>(2) | Food<br>exempt<br>(3) | Share ethanol<br>from beer<br>(4) |
| $\Delta \log(1 + \text{excise tax rate})$                | -0.63<br>(0.28)  | -1.10<br>(0.47)              | -0.91<br>(0.22)       | 0.16<br>(0.13)                    |
| $\Delta \log(1 + \text{sales tax rate})$                 | -0.03<br>(0.29)  | -0.00<br>(0.33)              | -0.14<br>(0.30)       | 0.25<br>(0.22)                    |
| $\Delta \log(\text{population})$                         | -0.06<br>(0.07)  | -1.24<br>(0.33)              | 0.03<br>(0.07)        | 0.09<br>(0.05)                    |
| $\Delta \log(\text{income per capita})$                  | 0.22<br>(0.05)   | 0.08<br>(0.05)               | 0.22<br>(0.05)        | 0.01<br>(0.03)                    |
| $\Delta \log(\text{unemployment rate})$                  | -0.01<br>(0.01)  | -0.00<br>(0.01)              | -0.01<br>(0.01)       | 0.00<br>(0.01)                    |
| Alcohol regulation controls                              | X  | X                            | X                     | X                                 |
| Year fixed effects                                       | X  | X                            | X                     | X                                 |
| $F$ -test for equality of tax elasticities (prob > $F$ ) | 0.15   | 0.05                         | 0.04                  | 0.73                              |
| Sample size  | 1,487  | 1,389                        | 937                   | 1,487                             |

*Notes:* Standard errors, clustered by state, in parentheses. Column 1 replicates column 3 of Table 6, instrumenting for excise tax rate changes with the nominal excise tax rate divided by the average price of a case of beer from 1970 to 2003 to eliminate variation in the tax rate due to inflation erosion. In column 2, all variables are defined using three-year differences instead of first-differences. Column 3 instruments for the the log change in the ACCRA survey price of beer using the log change in the gross-of-excise tax rate. Column 4 restricts the sample to states where all food was exempt from taxation in 2000. In column 5, the dependent variable is the fraction of total ethanol consumption in each state-year accounted for by beer. F-test tests null hypothesis that coefficients on excise and sales tax rate variables are equal.