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ABSTRACT: We test for the state interdependence of gasoline and cigarette taxation in the US (1975-2006). We estimate a tax reaction function, and find that state interdependence is due solely to yardstick competition, since any interaction disappears completely in the case of states with lame duck governors. This result holds for both taxes: the short-run reaction of those states whose governor is eligible to stand for reelection is 0.13 and 0.21 for gasoline and cigarette taxation, respectively. In the long run, the cigarette tax rates levied in a jurisdiction match those of its neighbors perfectly, while the long-run reaction in the case of gasoline is much lower at 0.72.

JEL Codes: H71, H77

Keywords: Tax competition, political accountability, excise taxes.

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1. Introduction

There can be little doubt that US excise tax rates are state interdependent (Nelson, 2002; Rork, 2003; Devereux, Lockwood and Redoano, 2007; Jacobs, Ligthart and Vrijburg, 2010). All previous studies, despite obvious differences in their empirical analyses, report a positive tax reaction to neighbors' tax rates, and implicitly or explicitly argue that such a response is caused by strategic tax competition attributable to cross-border shopping, smuggling or both. In this paper we focus on taxes on cigarettes and gasoline in the US and show that tax interdependence is due solely to tax mimicking.

Brueckner (2003) describes two sources of strategic interaction among governments, captured in the resource-flow and spillover models respectively. The former stresses the role of tax base mobility, while the latter points to the possibility of information spilling over among interested voters in different jurisdictions (Salmon, 1987). Unfortunately, it is difficult in practice to disentangle one source from the other, as both models make the same empirical prediction, namely that tax rates should be interdependent among sub-central governments. In the case of tax competition, tax base mobility is required; in the case of yardstick competition, it is assumed that voters assess the relative performance of their respective governments and compare it with that of comparable governments when deciding who to cast their vote for. Thus, for this accountability mechanism to work, fiscal information must be readily available to voters.

In order to disentangle tax competition from that of yardstick, we proceed as Besley and Case (1995a). We distinguish those states run by a governor who is ineligible to run for reelection (because of a term limit) from all other states. We test their differential reaction for cigarette and gasoline taxes for a panel dataset running from 1975 to 2006. We find that only those governors who are not lame ducks set their tax rates by taking into account the rates levied by comparable jurisdictions - which, in keeping with the literature (see, for example, Besley and Case, 1995a), we shall from this point on identify as the geographically contiguous states - while the other governors set taxes independently of the behavior of their neighbors. Specifically, in the case of governors not approaching the end of their tenure, a one-cent increase in the real tax rate of their neighbors implies a contemporaneous tax increase of 0.13c and 0.21c for gasoline and cigarettes, respectively; moreover, in the long run a one-cent increase will be perfectly

matched in the case of cigarettes, while in the case of gasoline it will rise to 0.72c. Therefore, in spite of a fairly well-documented tax base mobility, it does not seem to be the cause of the *average* tax interdependence among US states in the case of excise taxation. Rather, states tend to mimic each other because of their reelection concerns regarding the role of excise taxation.

The rest of the paper is organized as follows. In the next section, we provide a summary of the empirical literature on tax interdependence, focusing on yardstick competition and on the analyses carried out for US excise taxation. In section three, we present the empirical analysis and discuss the results. Finally, we conclude.

2. Previous literature

Salmon (1987) was the first author to recognize that comparative performance constituted a potential source of fiscal interdependence among sub-national governments. In his words, "each government has an incentive to do better than governments in other jurisdictions in terms of levels and qualities of services, of levels of taxes or of more general economic and social indicators" (p. 32). Subsequently, Besley and Case (1995a) developed a sophisticated information externality model among jurisdictions. The model implies that voters draw on relevant information from comparable jurisdictions in order to infer fiscal information that is fundamental in helping them make their next voting decision. Should this indeed be the case, then politicians need to be well aware of what their comparable jurisdictions are doing if they wish to ensure their own reelection for a further term.

Besley and Case (1995a) tested this hypothesis by comparing the tax-setting decisions of those governors that could be reelected with the rates chosen by those who could not. They tested it both for state income-tax liability and for an amalgam of state taxes (sales, income and corporate income), and in both cases found that lame duck governors did not make tax changes that were dependent on their neighbors' rates, which was very much in contrast with the performance of the rest of the state governors. If tax competition were the cause of tax interdependence, then the reaction should have been independent of whether governors could be held accountable (no term limit) or not (binding term limit). For this reason, the authors conclude that the tax interdependence

found was due only to yardstick competition. In more recent studies, this source of tax interdependence has also been found by Bordignon, Cerniglia and Revelli (2003), Solé-Ollé (2003), and Allers and Elhorst (2005). All of which were undertaken with local governments in various countries with a primary focus on property taxation.

In the case of excise taxation, there is considerable empirical evidence of tax interdependence for the US case. However, as a result no doubt of the extensive anecdotic evidence that cross-border shopping, and even smuggling, are very important in certain areas, authors have tended not to devote much time in attempting to disentangle the most likely source of this interdependence.

Rork (2003) reported a horizontal reaction of 0.636 and 0.6 cents for cigarette and gasoline, respectively. He measured each tax in (real) cents, and attributed all the reaction to tax base mobility. However, if state taxes are serially correlated (which is the case for excise taxes, since statutory tax rates do not often vary over time) and the empirical specification fails to take this into full account, the estimates might be upwardly biased. In order to tackle this problem, Devereux, Lockwood and Redoano (2007), and Jacobs, Ligthart and Vrijburg (2010) include the lagged endogenous variable with the result that the estimate of the horizontal reaction is considerably lower. The former obtain a reaction of 0.277 and 0.191 (though, statistically insignificant) for cigarette and gasoline taxation, respectively. Jacobs, Ligthart and Vrijburg (2010) define the tax rate variable as an “average effective tax rate”, which is an average of the state sales tax and specific tax rates. In their case, and although not fully comparable with the two previous results, the reaction they estimate is around 0.4. Yet, in both analyses the presence of the lagged endogenous variable allows them to obtain a long-run reaction, which is almost equal to 1.

While Jacobs, Ligthart and Vrijburg (2010) remain silent about the source of tax interdependence, Devereux, Lockwood and Redoano (2007) suggest that their results point to tax competition as being the most likely source, since in their spatial lag model the average of all the rest of state taxes is not statistically significant while the tax average constructed using neighbor weights works better. However, note that their conclusions might be somewhat hastily drawn, as information externalities are usually thought to flow more easily between neighboring jurisdictions (Salmon, 1987; Besley

and Case, 1995a).

In contrast with these previous studies, and now that the presence of tax interdependence is well documented, we aim at identifying the source of this interdependence. Our results are clear-cut and robust: tax interdependence in excise taxation is due solely to yardstick competition.

3. Empirical analysis

3.1. Empirical framework

To test for the source of horizontal tax interaction in the US, we estimate the tax-reaction function by relating one state tax to the average tax of its neighboring states for the period 1975-2006. We then repeat this procedure for gasoline and cigarette taxes transformed into real terms (using the federal CPI).

In order to estimate the potentially different reaction of states depending on whether their governor can or cannot stand for reelection, we estimate the following equation for each case:

$$t_{jst} = \alpha_s + \phi_t + \varphi' \sum_i w_{si} t_{jst-1} + \varphi \sum_{i \neq s} w_{si} t_{jst} + X_{jst}\beta + \mu t_{jst-1} + \varepsilon_{jst} \qquad [1]$$

where t_{jst} is the real tax rate on commodity *j* for state *s* in year *t*; α_s is a state fixed effect; ϕ_t is a year effect; $\sum_{i \neq s} w_{si} t_{jst}$ is the average real tax rate for commodity *j* of the neighboring states of state *s* in year *t*, where w_{si} are identical exogenous weights, normalized such that $\sum_{i \neq s} \omega_{si} = 1$, which account for the relative interdependence relation between *s* and the rest of the *i*-states; X_{jst} is a vector of state-specific time-varying regressors; while ε_{jst} is a mean zero, normally distributed random error. As long as the estimate of $\varphi' + \varphi$ is different from zero for the sample where the governor is not a lame duck and equal to zero for the sample where the governor is a lame duck, we can confirm that the interaction is solely the result of yardstick competition. If φ were to be

significant in both samples, then tax competition would be operative, but if yardstick competition were also present , we would expect a lower estimate for lame duck governors.

In Besley and Case (1995a), but also in Case (1993), "… the empirical specification [will] use *changes* in taxes as the main tax-setting decision. Such changes are most likely to represent responses to shocks about which there is asymmetric information" (p. 32). While tax levels have been used elsewhere (*e.g.*, Solé-Ollé, 2003; and Allers and Elhorst, 2005), here we opt for a more parsimonious empirical specification. We include the lagged endogenous variable and a lag of the neighbors' tax in a model that constitutes a general version of Besley and Case's (1995a) empirical specification. As long as the estimate of the lagged endogenous variable is equal to 1, and the (absolute value of the) estimate of the contemporaneous and lagged neighbors' tax rate is equal, our model collapses into theirs. Thus, *a priori* our model does permit both types of reaction: both in levels and changes.

In order to isolate the independent impact of the average of the neighboring states' tax, we include other variables that might affect the state tax rate and that must be taken into account in order to avoid biased estimates. These variables are included in the vector X_{jst}. Specifically, state taxation may be influenced by the economic and demographic environment. As is usual in the literature, this is controlled for by the following variables: population (and its square), per-capita income (and its square), unemployment rate, proportion of population over 65 and proportion of population between 5 and 17. We also take federal fiscal instruments into account, as these may differ from state to state and might condition the setting of state tax rates. Thus, we include federal grants-in-aid in relation to total population and the federal income tax collected in each state, normalized by the adjusted gross income. The political affiliation of the state government may also affect the tax rate level. We build dummies for the governors' party affiliation (Democrat or Republican) and variables to account for the percentage representation of the political parties (Democrat or Republican) in the House and in the Senate.

Certain invariable state characteristics are likely to affect its tax system, such as climate

or geography, among others. We take these characteristics into account by including a dichotomous variable for each state. Changes in the macroeconomic situation may also affect a state's fiscal policies, and so we include a set of time effects.

The mean US neighboring tax rate, $\sum_{i \neq s} w_{si} t_{jst}$, is endogenous because it can be simultaneously influenced by the tax rate that we are estimating. Then, if this was a structural model, a simple OLS estimation of [1] would suffer from endogeneity bias: the error term ε_{jst} would be correlated with the error terms of the other simultaneous equations in the system. In order to overcome the simultaneity bias, we use the two-stage least-squares method: first, we estimate the reduced forms of the endogenous variables, and then we substitute their fitted values into [1]. The residuals of this last equation are corrected using the actual values of the endogenous variables. We instrument the mean US neighboring tax rate with the US neighboring variables POP_{st}, $CHILD_{st}$, $AGED_{st}$, $UNEMP_{st}$, $DEMSEN_{st}$, $DEMHOU_{st}$. Consequently, we have six instruments in total. Hence Equation [1], which has one endogenous variable, can be identified.[1]

3. 2. Data

3.2.1 Nominal tax rates

Taxes on gasoline and cigarettes vary considerably across states. In 1990, for example, the tax per pack of cigarettes ranged from 2 cents in North Carolina to 40 cents in Connecticut. In the same year, the tax per gallon of gasoline ranged from 7.5 cents in Georgia to 22 cents in Connecticut and Washington. Thus, there is significant cross-sectional variation.

Individual state taxes on cigarettes also vary over time. For example, in North Carolina the tax rate varied between 2 and 5 cents in 1992, but reached 30 cents in 2005 and 35 in 2006. Connecticut shows even more variation, levying a tax of 21 cents up to 1983, before increasing the rate to 26 cents in 1984, then raising it again to 40 in 1989, 45 in

[1] The lag of the dependent variable biases all the estimated coefficients of the regression for finite-*T* samples. However, in our case, the Nickell (1981) bias should not be a significant problem, due to the fact that our panel runs over 32 years. Therefore, we do not instrument the lagged endogenous variable.

1992, 47 in 1994, 50 in 1995, 111 in 2002 and finally 151 cents in 2003. Likewise, individual state taxes on gasoline show considerable variation over time. While Georgia maintained the same tax (7.5 cents) throughout the period studied here, the rate varied markedly in Connecticut and Washington. Connecticut increased its tax rate from 10 to 11 cents per gallon in 1976, to 14 in 1983 and then to 38 in 1997. This was followed by a reduction to 36 cents in 1998, 32 in 1999 and, finally, to 25 in 2002. Washington levied 9 cents till 1976, which rose gradually to 18 in 1984, 22 in 1990 and 23 in 1991. The tax was then increased to 28 in 2004, 31 in 2005 and, finally, 34 in 2006.

3.2.2 Description of the term limit variable

This is a dichotomous variable, but one that varies considerably by state and year in our sample. There are states in which there is no term limit on the governor's election; while in others there is a one-term limit (Virginia), a two-term limit, or a three-term limit (Utah). Additionally, some states in our sample have changed their legislation from a no-term limit to a two-term limit or from a one-term limit to a two-term limit. Besley and Case (1995b) and List and Sturm (2006) have exploited this variation between states and over time in order to assess the potentially different performance of lame duck governors.

3.2.3 The other variables

The rest of the right-hand-side variables in [1], with their definitions, averages and standard deviations are reported in Table 1.

[TABLE 1]

We include a set of time-varying variables that characterize the states' economic and demographic situation: the state population (*POP*), per capita state income (*INC*), the state unemployment rate (*UNEMP*), the proportion of individuals in the state who are aged between 5 and 17 (*CHILD*), and the proportion who are over 65 (*AGED*). The states' political environment can also affect fiscal outcomes. Therefore, we use a dummy variable that equals one if the governor is a Democrat (*DEMGOV*). We also account for the proportion of Democrats in the state Senate and in the House of Representatives (*DEMSEN* and *DEMHOU*, respectively). The cigarette and gasoline industries might affect the state tax rate by lobbying for the rates of their respective

commodities (Dixit, 1996). Therefore, in order to control for the influence of lobbies, we include *TOBINC* (tobacco production per dollar of state income) and *GASINC* (gasoline production per dollar of state income). The federal fiscal policy, other than commodity tax rates, may also affect state commodity tax rates. Thus, we control for per capita federal grants to the states (*GRANTS*), and the average federal income in the state *(INCTAX)*, defined as the ratio of the state's federal income tax liability to its adjusted gross income.

3.3. Empirical results

In Table 2, we present our results for taxes on gasoline. In column (1), we estimate a restricted model, as it only includes the contemporaneous value of the neighbors' tax variable. The short-run reaction is 0.226, while the long-run reaction is 1.121 (*i.e.*, 0.2263/(1-0.7982)). In column (2), we include a lag of the neighbors' tax variable, which is statistically significant. The short-run reaction is now slightly lower, 0.151 (*i.e.*, 0.6605-0.5090), while the long-run reaction is 0.796. In Table 3, we obtain similar results for taxes on cigarettes. When we estimate the most flexible model (lagged endogenous variable and lagged tax competitors' variable), the short- and long-run reactions (see again column (2)) are 0.175 and 1.167, respectively. Therefore, in both cases, in line with results published elsewhere in the literature, we find positive tax interdependence, albeit somewhat higher in the case of cigarettes. However, recall, we are interested in identifying the source of this interdependence.

[TABLE 2]

That is why, going back to gasoline, in Table 2, we distinguish those states whose governor can run for reelection (column (3)) from those where there is a binding term limit (column (4)). In this latter case, it is clear that the reaction is not statistically significant, while in the case where the governor can run for reelection the short-run reaction is 0.134 and the long-run reaction is 0.718. Therefore, as in Besley and Case (1995a), the empirical evidence points to yardstick competition. Similarly, in Table 3, we obtain the same qualitative results: lame duck governors do not react to neighboring cigarette tax rates. In contrast (column (3)), the rest of the state governors, in the short run, faced by a 1-cent increase in their neighbor's cigarette tax rates, raise their tax rates

by 0.21c, while in the long-run the increase can be as high as 1.488 (which cannot be rejected as it is not equal to 1).

[TABLE 3]

The long-run reaction, especially in the case of cigarette taxation, is quite high. For this reason, in Table 4, we present a robustness check including lags of the neighbors' tax rates rather than the lagged dependent variable.[2] The first three columns of Table 4 refer to gasoline, while the rest refer to cigarettes. Note that in columns (1) and (4), we do not distinguish according to whether a term limit is at work or not. However, in columns (3) and (6) we do show the results for the lame duck governors, but the reaction is still statistically insignificant. When the state governor is eligible to run for reelection (column (2)), the long-run reaction in the case of gasoline is equal to 0.695, while in the case of cigarettes (column (5)) the reaction is equal to 0.976. Hence, the qualitative results do not change, but now the long-run reactions are slightly lower.

[TABLE 4]

Finally, in the next two tables, we deflate the nominal statutory tax rates by using a state price index.[3] Since a general price index disaggregated by states is not available for the US, we use the Housing Price Index (HPI), which is readily available for our entire time span.[4] In Table 5 we present the results for gasoline and in Table 6 we do the same for cigarette taxation. The structure of both tables is identical to that of Tables 2 and 3, respectively. First, when not distinguishing between states according to the presence or otherwise of a term limit, we still obtain positive reactions, although their values are lower. Second, in the case of both cigarette and gasoline taxation rates, states only react

[2] Chirinko and Wilson (2009) show that the standard lagged dependent variable model (*i.e.*, the one we use) is nested within a more general dynamic model that does not include the lagged dependent variable but an infinite number of time lags of the independent variables. Note that we have estimated a restricted version of that more general model as we only include four lags of the neighbors' tax rates and none for the remaining exogenous variables.

[3] Lockwood and Migali (2008) use a country-retail price index to deflate statutory tax rates when they estimate tax interdependence in excise taxes for the EU.

[4] In spite of the volatility of the housing market, Esteller and Rizzo (2009) show that this index performs quite well in estimating the deflated reaction functions for cigarettes and gasoline in the US.

when their governor can run for reelection. Hence, the qualitative results are also robust to the deflator used to transform nominal tax rates in real terms. In the case of gasoline, the reaction is 0.061 and 0.312 in the short- and long-run, respectively; while in the case of cigarettes, these reactions are equal to 0.281 and 1.063 (which cannot be rejected as it is not equal to 1).

[TABLE 5]

[TABLE 6]

4. Conclusions

We explore the causes of the state interdependence of cigarette and gasoline taxation in the US, and provide empirical evidence that only those states whose governor can run for reelection react to their neighbors' tax rates. This paper contributes to the literature on US excise taxation by showing that tax rates are interdependent because incumbent governors set their taxes in accordance with the rates levied by their neighbors so as to ensure their reelection. Our results complement those reported by Besley and Case (1995a), who found empirical evidence of yardstick competition in the case of income tax rates in the US.

This result is quite robust to different specifications. Interestingly, the reaction when governors are not lame ducks is much higher in the case of cigarettes. Indeed in this case we cannot even reject the possibility that in the long run tax rates are perfectly matched between neighboring jurisdictions. We leave the explanation of this differential behavior between gasoline and cigarette taxation for further research.

References

Allers, M.A., J. P. Elhorst (2005): "Tax Mimicking and Yardstick Competition among Local Governments in the Netherlands", *International Tax and Public Finance*, 12, 493-513.

Besley, T., A.C. Case (1995a): "Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition", *American Economic Review*, 85, 25-45.

Besley, T., A.C. Case (1995b): "Does Political Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits", *Quarterly Journal of Economics,* 110, 769-98..

Brueckner, J. K. (2003): "Strategic Interaction among Governments: An Overview of Empirical Studies", *International Regional Science Review,* 26, 175-188.

Case, A. (1993): "Interstate Tax Competition after TRA86", *Journal of Policy Analysis and Management*, 12, 136-48.

Chirinko, B., D. J. Wilson (2009): "Tax Competition among U.S. States: Racing to the Bottom or Riding on a Seesaw", Federal Reserve of San Francisco, Working Paper 2008-03.

Devereux, M.P., B. Lockwood, M. Redoano (2007): "Horizontal and vertical indirect tax competition: Theory and some evidence from the USA", *Journal of Public Economics*, 91, 451-79.

Dixit, A., (1996): "Special-interest lobbying and endogenous commodity taxation", *Eastern Economic Journal*, 22, 375–388.

Esteller, A., L. Rizzo (2009): "(Uncontrolled) Aggregate shocks or vertical tax interdependence? Evidence from gasoline and cigarettes", Working Paper #24, Institut d'Economia de Barcelona.

Jacobs, J.P.A.M., J. E. Ligthart, H. Vrijburg (2010): "Consumption tax competition among governments: Evidence from the United States", *International Tax and Public Finance*, forthcoming.

List, J. A., D. Sturm (2006): "How Elections Matter: Theory and Evidence from Environmental Policy," *Quarterly Journal of Economics*, 121, 1249-1281.

Lockwood, B., G. Migali (2008): "Did the Single Market Cause Competition in Excise Taxes? Evidence from EU Countries", *The Economic Journal*, forthcoming.

Nelson, M. A. (2002): "Using Excise Taxes to Finance State Government: Do Neighboring State Taxation Policy and Cross-Border Markets Matter?", *Journal of Regional Science*, 42, 731-52.

Nickell, S. (1981): “Biases in dynamic models with fixed effects” *Econometrica* 49, 1417-1426.

Rork, J. C. (2003): “Coveting Thy Neighbors’ Taxation”, *National Tax Journal*, 56, 775-87.

Salmon, P. (1987): “Decentralisation as an Incentive Scheme”, *Oxford Review of Economic Policy*, 3, 24-43.

Solé-Ollé, A. (2003): “Electoral accountability and tax mimicking: the effects of electoral margins, coalition government, and ideology”, *European Journal of Political Economy*, 19, 685-713.

Data Appendix

- t_{st} US cigarette tax rate for state s in year t, divided by the CPI or the HPI. These rates are taken from www.OTPR.org: cigarette tax rates are expressed in US dollars per pack of 20 cigarettes and gasoline tax rates are expressed in US dollars per gallon of gasoline.

Endogenous variables

- $\sum_{i \neq s} w_{si} t_{st}$ is the mean of the states tax rates, divided by the CPI or HPI, of the states bordering state s in year t.

Demographic and economic variables

- POP_{st} is the number of persons in state s in year t. This figure is taken from www.census.gov.
- $CHILD_{st}$ is the ratio of individuals aged 5-17 years to the total population of state s in year t, taken from www.census.gov for the USA.
- $AGED_{st}$ is the ratio of individuals of over 65 years of age to the total population of state s in year t, taken from www.census.gov for the USA.
- $UNEMP_{st}$ is the unemployment rate for state s in year t, taken from www.stats.bls.gov.
- INC_{st} is the per-capita income for state s in year t divided by the CPI or HPI. Income data were taken from http://www.bea.doc.gov.
- $GRANT_{st}$ is the per-capita federal grant-in-aid for state s in year t. It is obtained from "Federal Expenditures by State" which is part of the Consolidated Federal Funds Reports program from US Census Bureau.
- $DEMGOV_{st}$ dummy=1 if the governor of the state is a Democratic, taken from the Statistical Abstracts of the United States.
- $TERMLIMIT_{st}$ dummy=1 if the governor cannot run for reelection, taken from the Statistical Abstracts of the United States.
- $DEMSEN_{st}$ proportion of state Senate that is Democratic, taken from the Statistical Abstracts of the United States.
- $DEMHOU_{st}$ proportion of state House that is Democratic, taken from the Statistical Abstracts of the United States.
- CPI_t (Consumer Price Index) was taken from the Statistical Abstracts of the United States (2000).
- HPI_{st} (House Price Index) was taken from http://www.ofheo.gov, the website of the Office of Federal Housing Enterprise Oversight in the USA.
- $TOBINC_{st}$ annual tobacco production (thousand of pounds); from http://www.nass.usda.gov, the website of the National Agricultural Statistics Service in the USA.
- $GASINC_{st}$ is the daily gasoline production (thousand barrels per day) per dollar of state income in real terms with CPI or HPI; from http://www.eia.doe.gov, the website of the Energy Information Administration in the USA.
- $INCTAX_{st}$ federal income tax divided by adjusted gross income. Federal income tax and adjusted gross income are from the http://www.irs.gov, the website of the Internal Revenue Service, a Department of the Treasury in the USA.

Table 1: 'Summary statistics*

Variable	Obs	Mean	Stand. Dev.	Min	Max
tg*10 (state unit gasoline tax, cents in real terms with CPI)	1504	121.487	27.700	37.202	236.760
Tg*10 (federal unit gasoline tax cents in real terms with CPI)	1504	89.653	23.241	41.451	127.336
tc*10 (state unit cigarette tax, cents in real terms with CPI)	1504	216.776	164.998	13.587	1302.276
Tc*10 (federal unita cigarette tax cents in real terms with CPI)	1504	151.423	33.508	82.902	216.787
tg*10 (state unit gasoline tax, cents in real terms with HPI)	1504	97.673	31.177	18.201	201.350
Tg*10 (federal unit gasoline tax cents in real terms with HPI)	1504	74.898	25.379	31.025	147.409
tc*10 (state unit cigarette tax, cents in real terms with HPI)	1504	160.183	89.162	7.990	649.710
Tc*10 (federal unita cigarette tax cents in real terms with HPI)	1504	119.973	33.349	50.480	235.863
Termlimit	1504	0.261	0.439	0	1
GDP (real national gross domestic product , billion of dolllars in real terms with CPI)	1504	45.662	10.138	30.452	65.707
GDP (real national gross domestic product , billion of dolllars in real terms with HPI)	1504	36.121	9.925	15.484	66.492
FED UNEMP (federal unemployment rate)	1504	6.284	1.410	4	9.7
DEF (federal deficit over national gross domestic product)	1504	0.026	0.020	-0.027	0.059
POP(state population*10^{-6})	1504	5.314	5.577	0.382	36.250
INC (state income per capita*10-3 in real terms with CPI)	1504	140.754	28.405	78.134	251.798
INC (state income per capita*10-3 in real terms with HPI)	1504	110.134	22.616	58.685	197.910
UNEMP (state unemployment rate)	1504	5.984	2.018	2.3	17.4
CHILD (proportion of population between 5 and 17)	1504	0.196	0.021	0.155	0.268
AGED (proportion of population over 65)	1504	0.122	0.019	0.073	0.185
TOBINC (tobacco production per dollar of state income in real terms with CPI)	1504	257.890	925.431	0	10225.09
TOBINC (tobacco production per dollar of state income in real terms with HPI)	1504	323.134	1155.657	0	13393.34
GASINC (daily gasoline production per dollar of state income in real terms with CPI)	1504	0.818	2.703	0.000	31.343
GASINC (daily gasoline production per dollar of state income in real terms with HPI)	1504	0.950	3.211	0.000	35.934
GRANTS (federal grants per capita in dollars*10-8 in real terms with CPI)	1504	$563*10^{-8}$	$226*10^{-8}$	$231*10^{-8}$	$2740*10^{-8}$
GRANTS (federal grants per capita in dollars*10-8 in real terms with HPI)	1504	$444*10^{-8}$	$199*10^{-8}$	$151*10^{-8}$	$2210*10^{-8}$
INCTAX (federal income tax divided by adjusted gross income)	1504	0.137	0.016	0.092	0.193
DEMGOV (=1 if the governor is a Democrat)	1504	0.537	0.499	0	1
DEMSEN (proportion of state Senate that is Democratic)	1504	0.577	0.186	0.086	1
DEMHOU (proportion of state House that is Democratic)	1504	0.574	0.179	0.129	1

*Figures are based on annual data for continental US states for the year 1975 to 2006, inclusive. All the monetary variables are espressed in real terms, divideded by the Consumer Price Index (CPI) 1982-84 taken from the Statistical Abstract of the United States or the Housing Price Index (HPI) 1980 taken from the Office of Federal Housing Enterprise Oversight (http://www.ofheo.gov). We do not include non continental states (Hawaii, District of Columbia and Alaska) and Nebraska, whose Legislature is unicameral and non-partisan.

Table 2: Gasoline tax rates (1975-2006) deflated with CPI.

	(1)	(2)	(3)	(4)
Wstgastax	0.2263	0.6605	0.7159	-0.4892
	(3.04)***	(2.58)**	(2.95)***	(0.72)
L1Wstgastax		-0.5090	-0.5815	0.4782
		(2.31)**	(2.72)***	(0.86)
L1stgastax	0.7982	0.8096	0.8128	0.7616
	(38.61)***	(40.48)***	(35.17)***	(20.68)***
population	0.6264	0.2348	0.5373	-2.6793
	(0.90)	(0.34)	(0.58)	(1.60)
popsq	0.0005	0.0059	0.0021	0.0525
	(0.04)	(0.48)	(0.14)	(1.43)
stinc	0.2592	0.1631	0.0842	-0.5962
	(1.13)	(0.77)	(0.37)	(0.87)
stincsq	-0.0005	-0.0004	-0.0001	0.0011
	(0.93)	(0.77)	(0.18)	(0.62)
stunemp	0.5118	0.2509	0.0637	0.0724
	(1.47)	(0.61)	(0.14)	(0.10)
child	-89.6061	-38.0679	-71.1448	74.0006
	(1.67)*	(0.64)	(1.02)	(0.63)
aged	21.4262	19.8632	-19.4290	20.3475
	(0.36)	(0.32)	(0.24)	(0.17)
tobinc	-0.0011	-0.0010	-0.0017	-0.0007
	(1.54)	(1.35)	(1.86)*	(0.60)
gasinc	-0.0701	-0.1713	-0.1681	0.0581
	(0.43)	(1.08)	(0.76)	(0.19)
grants*10^{-5}	-0.3862	0.8938	1.1932	-6.1235
	(0.20)	(0.47)	(0.57)	(0.76)
fedinctax	-170.8184	-109.6867	-186.3936	-35.0803
	(2.39)**	(1.50)	(2.14)**	(0.31)
demgov	-0.1703	-0.4071	-0.5509	1.1185
	(0.32)	(0.75)	(0.88)	(0.88)
demsen	3.7583	3.3225	1.9829	2.9774
	(0.88)	(0.81)	(0.43)	(0.39)
demhou	1.4446	3.9623	7.4892	-8.7669
	(0.30)	(0.88)	(1.40)	(0.94)
Constant	-4.7803	-1.3854	21.7223	95.2742
	(0.15)	(0.04)	(0.59)	(1.00)
Observations	1457	1457	1078	379
r-squared	0.8978	0.8929	0.8994	0.8991
overid test	0.8690	0.9353	0.7595	0.1388

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3: Cigarettes tax rates (1975-2006), deflated with CPI.

	(1)	(2)	(3)	(4)
Wstcigtax	0.1956	1.0221	1.5826	-0.3812
	(1.92)*	(1.99)**	(2.30)**	(0.76)
L1Wstcigtax		-0.8471	-1.3721	0.3019
		(1.75)*	(2.07)**	(0.67)
L1stcigtax	0.8380	0.8501	0.8585	0.7556
	(23.48)***	(23.33)***	(18.15)***	(10.71)***
population	11.9320	16.8405	31.9521	-24.4485
	(1.27)	(1.56)	(2.02)**	(1.31)
popsq	-0.2452	-0.3405	-0.4904	0.4817
	(1.45)	(1.63)	(1.87)*	(0.75)
stinc	-0.4325	-0.0811	0.6088	-5.3113
	(0.30)	(0.05)	(0.31)	(2.29)**
stincsq	0.0009	-0.0004	-0.0034	0.0161
	(0.23)	(0.11)	(0.66)	(2.38)**
stunemp	0.5231	-0.5121	-2.4319	2.3175
	(0.41)	(0.33)	(1.03)	(0.97)
child	-253.9931	-101.1222	-11.5740	-528.9913
	(0.90)	(0.30)	(0.02)	(0.75)
aged	-41.0045	-127.2273	-140.7839	-165.4124
	(0.09)	(0.25)	(0.18)	(0.16)
tobinc	0.0038	0.0005	0.0006	-0.0007
	(1.08)	(0.14)	(0.09)	(0.15)
gasinc	-1.4518	-1.1929	1.4253	1.9165
	(0.85)	(0.62)	(0.47)	(0.71)
grants*10^{-5}	0.3871	-25.030	-33.818	-82.650
	(0.02)	(0.91)	(0.85)	(0.92)
fedinctax	530.6175	141.9638	-228.4589	15.7822
	(1.11)	(0.26)	(0.27)	(0.03)
demgov	5.5764	4.2349	6.8803	2.0728
	(1.67)*	(1.15)	(1.34)	(0.37)
demsen	17.3229	25.4090	58.3829	-25.6972
	(0.89)	(1.08)	(1.62)	(0.82)
demhou	49.7351	39.4400	23.7984	62.0460
	(1.49)	(1.14)	(0.53)	(1.32)
Constant	-64.7302	-58.2349	-141.0333	763.6964
	(0.35)	(0.30)	(0.49)	(1.99)**
Observations	1457	1457	1078	379
r-squared	0.8920	0.8649	0.8294	0.8969
overid test	0.3177	0.7709	0.9655	0.5681

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Gasoline and cigarette taxes (1975-2006). Specification with neighbor's lags.

	(1)	(2)	(3)	(4)	(5)	(6)
	stgastax	stgastax	stgastax	stcigtax	stcigtax	stcigtax
Wstgastax	2.2230	1.9946	0.1117			
	(4.78)***	(4.45)***	(0.13)			
L1Wstgastax	-1.7670	-1.6271	0.1179			
	(4.07)***	(3.90)***	(0.18)			
L2Wstgastax	0.3145	0.3107	0.0770			
	(1.83)*	(1.76)*	(0.37)			
L3Wstgastax	0.0155	0.0127	0.0312			
	(0.10)	(0.08)	(0.18)			
L4Wstgastax	-0.0394	0.0041	-0.1122			
	(0.36)	(0.03)	(0.89)			
Wstcigtax				3.4175	3.4105	-0.5098
				(3.58)***	(3.12)***	(0.53)
L1Wstcigtax				-3.0439	-3.1533	0.6002
				(3.07)***	(2.69)***	(0.75)
L2Wstcigtax				0.6395	0.7056	-0.0271
				(1.44)	(1.40)	(0.08)
L3Wstcigtax				0.1062	0.1737	-0.2094
				(0.25)	(0.35)	(0.60)
L4Wstcigtax				-0.2250	-0.1603	0.4323
				(0.56)	(0.35)	(0.98)
population	-3.5609	-4.5264	-11.5089	54.6459	88.8506	-91.5786
	(1.77)*	(2.01)**	(3.28)***	(2.29)**	(3.40)***	(2.78)***
popsq	0.0684	0.0810	0.1451	-1.0321	-1.3439	1.8808
	(1.99)**	(2.32)**	(2.14)**	(2.05)**	(2.67)***	(1.69)*
stinc	-0.0222	-0.4063	-1.5709	-2.4330	-3.1301	-4.3297
	(0.04)	(0.75)	(1.26)	(0.66)	(0.76)	(1.32)
stincsq	-0.0004	0.0008	0.0027	0.0041	0.0042	0.0206
	(0.30)	(0.62)	(0.84)	(0.41)	(0.39)	(2.62)***
stunemp	-0.2071	0.8783	-3.1884	-6.3376	-11.3885	13.4324
	(0.27)	(0.99)	(2.61)***	(1.61)	(2.45)**	(3.09)***
child	47.1277	-186.7695	661.6817	340.2311	260.1192	797.9384
	(0.45)	(1.68)*	(2.62)***	(0.41)	(0.26)	(0.52)
aged	9.8928	60.8351	-548.0477	-2,167.3954	-1,995.4138	-474.4296
	(0.07)	(0.37)	(2.15)**	(1.68)*	(1.22)	(0.32)
tobinc	-0.0027	-0.0067	-0.0023	-0.0029	0.0042	0.0003
	(1.50)	(3.63)***	(1.17)	(0.30)	(0.25)	(0.03)
gasinc	-2.8431	-3.2104	0.4192	-0.2688	8.1079	8.4387
	(4.59)***	(4.31)***	(0.42)	(0.05)	(1.33)	(1.26)
grants*10^{-5}	8.3257	1.5168	35.7186	-45.104	-43.101	-36.251
	(1.35)	(0.29)	(2.42)**	(0.65)	(0.60)	(0.28)
fedinctax	39.2175	49.4968	-263.1867	-96.9574	-667.1647	-602.6016
	(0.26)	(0.29)	(1.22)	(0.08)	(0.41)	(0.66)
demgov	0.6259	-0.2608	7.1244	15.0176	20.2883	5.4174
	(0.57)	(0.21)	(3.36)***	(1.80)*	(2.06)**	(0.64)
demsen	9.1907	-4.8656	9.6509	100.2689	225.3918	-137.5173
	(1.16)	(0.58)	(0.62)	(1.98)**	(3.45)***	(1.96)*
demhou	11.9273	30.0915	-47.3397	39.6108	1.3354	60.6686
	(1.37)	(3.01)***	(2.97)***	(0.49)	(0.01)	(0.83)
Constant	33.6352	100.8681	304.3155	264.0698	236.2100	828.3861
	(0.47)	(1.33)	(1.68)*	(0.56)	(0.43)	(1.21)
Observations	1316	980	336	1316	980	336
r-squared	0.6217	0.6658	0.8125	0.4382	0.4653	0.8294
overid test	0.0183	0.0054	0.0209	0.9197	0.9327	0.4304

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Gasoline tax rates (1975-2006), deflated with HPI.

	(1)	(2)	(3)	(4)
	stgastax	stgastax	stgastax	stgastax
Wstgastax	0.1191	0.2663	0.2858	0.0040
	(2.99)***	(2.02)**	(2.18)**	(0.02)
L1Wstgastax		-0.1958	-0.2247	0.0958
		(1.62)	(1.87)*	(0.41)
L1stgastax	0.7957	0.8019	0.8043	0.7549
	(37.64)***	(39.93)***	(33.31)***	(20.06)***
vstate_index	-75.1346	-69.9104	-77.6302	-57.1761
	(13.05)***	(11.21)***	(11.26)***	(4.31)***
population	-0.1962	-0.2503	-0.1024	-2.9481
	(0.33)	(0.42)	(0.14)	(2.31)**
popsq	0.0148	0.0177	0.0142	0.0774
	(1.41)	(1.66)*	(1.08)	(2.37)**
stinc	0.0873	0.1275	0.1133	0.1587
	(0.84)	(1.26)	(0.96)	(0.68)
stincsq	-0.0001	-0.0002	-0.0002	0.0000
	(0.22)	(0.37)	(0.34)	(0.05)
stunemp	0.6236	0.4361	0.2397	0.3833
	(2.05)**	(1.20)	(0.68)	(0.48)
child	11.9934	47.5984	49.5008	164.0160
	(0.25)	(1.06)	(0.95)	(1.60)
aged	122.6758	116.6796	132.7148	93.6154
	(2.48)**	(2.32)**	(2.11)**	(0.96)
tobinc	-0.0003	-0.0003	-0.0009	0.0006
	(0.72)	(0.74)	(1.74)*	(0.71)
gasinc	-0.2095	-0.2115	-0.2999	0.2759
	(1.58)	(1.61)	(1.76)*	(1.32)
grants*10^{-5}	-3.1788	-2.6053	-2.9121	-1.4659
	(1.31)	(1.13)	(1.10)	(0.18)
fedinctax	-91.4143	-97.5531	-126.7453	-157.4796
	(1.98)**	(2.13)**	(2.26)**	(1.85)*
demgov	-0.1048	-0.1546	-0.2709	0.4494
	(0.23)	(0.34)	(0.51)	(0.49)
demsen	1.6995	1.6060	0.0349	-0.0235
	(0.49)	(0.47)	(0.01)	(0.00)
demhou	1.6562	2.9177	8.6570	-13.2420
	(0.43)	(0.78)	(1.90)*	(1.65)*
Constant	-9.6600	-15.4833	-15.2923	-4.2015
	(0.66)	(1.09)	(0.87)	(0.17)
Observations	1457	1457	1078	379
r-squared	0.9428	0.9429	0.9498	0.9309
overid test	0.9188	0.6024	0.8868	0.0239

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6: Cigarettes tax rates (1975-2006), deflated with HPI.

	(1)	(2)	(3)	(4)
	stcigtax	stcigtax	stcigtax	stcigtax
Wstcigtax	0.2223	0.5187	0.6602	-0.3544
	(3.02)***	(1.94)*	(2.08)**	(1.33)
L1Wstcigtax		-0.2919	-0.3791	0.2332
		(1.19)	(1.34)	(0.90)
L1stcigtax	0.7480	0.7453	0.7355	0.6949
	(22.17)***	(21.03)***	(16.82)***	(9.21)***
vstate_index	-139.9759	-124.0335	-1245153	-154.8213
	(7.51)***	(5.59)***	(4.86)***	(3.72)***
population	4.3958	5.1092	102520	-15.2780
	(0.85)	(0.97)	(1.36)	(1.48)
popsq	-0.0871	-0.1017	-0.1614	0.2415
	(0.94)	(1.05)	(1.33)	(0.80)
stinc	0.3033	0.1885	0.1452	1.0658
	(0.70)	(0.40)	(0.24)	(0.88)
stincsq	-0.0005	0.0001	-0.0005	-0.0002
	(0.28)	(0.03)	(0.21)	(0.04)
stunemp	-0.0556	-0.5221	-13663	1.5978
	(0.06)	(0.51)	(1.02)	(0.93)
child	-15.1384	48.0397	877648	495.5269
	(0.08)	(0.23)	(0.37)	(1.14)
aged	409.9295	381.1820	5741267	557.3033
	(1.40)	(1.31)	(1.55)	(1.02)
tobinc	0.0022	0.0011	0.0026	0.0029
	(1.10)	(0.54)	(0.84)	(1.18)
gasinc	-1.4257	-1.3228	-15077	1.5034
	(1.74)*	(1.49)	(1.39)	(1.03)
grants*10^{-5}	-15.551	-21.316	-15.839	-133.23
	(0.98)	(1.23)	(0.75)	(2.76)***
fedinctax	283.8641	169.8095	789934	-443.3065
	(1.23)	(0.69)	(0.23)	(0.95)
demgov	3.9744	3.6983	54798	0.5232
	(1.79)*	(1.64)	(1.98)**	(0.14)
demsen	9.3365	12.8240	300298	-25.9117
	(0.68)	(0.89)	(1.54)	(1.18)
demhou	19.5567	18.2040	0.9106	13.8836
	(0.89)	(0.86)	(0.03)	(0.41)
Constant	-115.3866	-106.4258	-1463201	28.8538
	(1.67)*	(1.49)	(1.63)	(0.20)
Observations	1457	1457	1078	379
r-squared	0.8336	0.8242	0.8061	0.8831
overid test	0.2218	0.2390	0.3069	0.2281

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

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