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Online Appendix

for

Evidence on the Insurance Effect of Redistributive Taxation

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To assure the reader that the results reported in this paper are robust to some of the possible choices about the construction of the data that was used in this paper, this Appendix repeats the regressions for some alternative specifications. In particular, it investigates the effect of taking all the months to which each interview in the CEX refers; and the effect of removing those households with especially low levels of consumption from the data.[1]

Using all three interview months

The tables in the main paper used only the month closest to the interview month of the CEX to construct household consumption. However, there has been considerable discussion about whether it is preferable to use all three months to which each interview of the CEX refers, or only the month immediately prior to the interview. The approach in the main body of the paper is the same as that taken by several previous studies using the CEX: see, for instance, Attanasio and Weber (1995), Attanasio and Davis (1996), Attanasio et al. (1999), and Attanasio and Jappelli (2001). Indeed, Attanasio and Weber (1995) have an extensive discussion on this particular choice.

The argument made in these papers, and developed further in Attanasio, Battistin, and Ichimura (2005) is that the recall error (at least for some consumption categories) is minimized through only using the response closest to the point at which the householder was asked about their level of consumption. In the main body of the paper, we have ensured that the construction of the data is consistent with the approach of these authors. Nevertheless, it should be recognized that for some expenditures, spending is more irregular. Nelson (1994)

[1]We thank two anonymous referees for recommending these robustness checks.

argues that this irregular expenditure can introduce measurement error into consumption as consumption and expenditure are not necessarily the same (and this issue may remain even for some categories of non-durable consumption).

To ensure that the results do not depend on the choice of whether all three months are included in the construction of household consumption, Tables 1 and 2 in this Appendix report results using all three months to which each interview of the CEX refer. The regression specifications appearing in columns (1)-(4) in Tables 1 and 2 in this addendum correspond to the specifications of the columns (2)-(5) of Tables 3 and 4 in the main text of the paper (i.e., all regressions control for state fixed effects). Similarly, the regression specifications appearing in columns (5)-(8) in Tables 1 and 2 in this addendum correspond to the specifications of the columns (7)-(10) of Tables 3 and 4 in the main text of the paper.

The results reported in Tables 1 and 2 in this addendum are broadly similar to these of Tables 3 and 4 in the paper. In Table 1, the tax system is negatively correlated with the standard deviation of consumption for both consumption measures (note however that the Sargan test is failed in Table 1 for the regression where the tax system is instrumented by the political variables). It is also significant in the last four columns of Table 2, which uses the mean marginal tax rate. The results in the first four columns of the table are similar to those in the main body of the paper, with the basic regression not being significant at conventional levels, but significant at the 5 percent level when taxes are instrumented using either the policy variables, or with lagged taxes. In sum, these results show that the conclusions drawn in the main body of the paper are not dependent on whether all three months to which each interview refers are included in the regression.

Trimming the Data

Throughout the paper, the regressions use the mean and standard deviation of log-consumption. This might cause problems if there are a number of households which have low levels of consumption. It would mean that the results could be sensitive to low outliers. To investigate this issue Table 3 and 4 repeat the analysis after trimming the lowest 2.5 percent of the households each year, ordered by their level of consumption. Both tables show that the results change little when this sensitivity test is made. The estimates again show that, in all cases, taxes are significant and negative when we investigate their effect on the standard deviation of consumption. In fact, column (1) of Table 3 shows that the coefficient of redistributive taxes is now significant even if state dummies are omitted from the regression. Yet, Figure 1 in this appendix, which uses the trimmed data, does not differ markedly from Figure 1 appearing in the main body of the paper. The regressions show that, as in the main body of the paper, the mean marginal tax rate is always negatively and significantly correlated with mean consumption, and the income compression measure of taxes is significant when it is instrumented either by the political variables, or by lagged taxes.

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TABLE 1. The effect of taxes on the sd log-consumption.

	Tax Redistributiveness				Mean Marginal Tax Rate			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tax Measure	-0.1187**	-0.2167***	-0.4388***	-0.6715***	-0.2973***	-0.2196***	-0.4395***	-0.5398***
	(0.0521)	(0.0689)	(0.1098)	(0.2081)	(0.0606)	(0.0719)	(0.0789)	(0.1066)
Unemp. Rate				0.0053*				0.0027
				(0.0031)				(0.0019)
Constant	0.4748***	0.5191***	0.5526***	0.6144***	0.5038***	0.4957***	0.5322***	0.5548***
	(0.0187)	(0.0273)	(0.0305)	(0.0547)	(0.0182)	(0.0212)	(0.0214)	(0.0247)
pol.		yes				yes		
lag			yes	yes			yes	yes
Rank test		485	136	45.7		825	434	281
p-value		(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)
Sargan test		46.68				48.56		
p-value		(0.000)				(0.000)		

Results are for 1982-2005 and for the 22 largest US states. The regressions in columns (1)-(4) measure the tax system by 1 minus the ratio of the standard deviation of after tax income to the standard deviation of before tax income, while the regressions in columns (5)-(8) measure the tax system by the mean marginal tax rate. All regressions control for state fixed effects. In columns (2) and (6) the tax system is instrumented using a full set of political instruments, columns (3) and (7) use the lagged tax rate as the instrument, while columns (4) and (8) use both lagged taxes and lagged unemployment as the instrument (with the rank test reporting results for the unemployment instrument). We adopt the convention that * means significant at 10%; ** means significant at 5%; and *** means significant at 1%.

TABLE 2. The effect of taxes on mean log-consumption.

	Tax Redistributiveness				Mean Marginal Tax Rate			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tax Measure	-0.0840	-0.1997**	-0.3196**	-0.2727	-0.2406***	-0.2448**	-0.3447***	-0.3242**
	(0.0730)	(0.0955)	(0.1500)	(0.2638)	(0.0860)	(0.0999)	(0.1117)	(0.1488)
Unemp. Rate				-0.0007				-0.0006
				(0.0040)				(0.0027)
Constant	7.4614***	7.3155***	7.5148***	7.4377***	7.4877***	7.3044***	7.5046***	7.4356***
	(0.0262)	(0.0378)	(0.0416)	(0.0694)	(0.0259)	(0.0295)	(0.0303)	(0.0345)
pol.		yes				yes		
lag			yes	yes			yes	yes
Rank test		485	136	45.7		825	434	281
p-value		(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)
Sargan test		17.86				16.65		
p-value		(0.532)				(0.613)		

Results are for 1982-2005 and for the 22 largest US states. The regressions in columns (1)-(4) measure the tax system by 1 minus the ratio of the standard deviation of after tax income to the standard deviation of before tax income, while the regressions in columns (5)-(8) measures the mean marginal tax rate. All regressions control for state fixed effects. In columns (2) and (6) the tax system is instrumented using a full set of political instruments, columns (3) and (7) use the lagged tax rate as the instrument, while columns (4) and (8) use both lagged taxes and lagged unemployment as the instrument (with the rank test reporting results for the unemployment instrument). We adopt the convention that * means significant at 10%; ** means significant at 5%; and *** means significant at 1%.

TABLE 3. The effect of taxes on the sd log-consumption (trimmed data)

	Tax Redistributiveness					Mean Marginal Tax Rate				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax Measure	-0.1168***	-0.1856***	-0.2747***	-0.4583***	-0.5028***	-0.2731***	-0.3496***	-0.2614***	-0.4884***	-0.4876***
	(0.0447)	(0.0500)	(0.0650)	(0.1044)	(0.1904)	(0.0510)	(0.0580)	(0.0681)	(0.0753)	(0.0998)
Unemp. Rate					0.0011					-0.0000
					(0.0029)					(0.0018)
Constant	0.4831***	0.5263***	0.5496***	0.5899***	0.5932***	0.5111***	0.5499***	0.5158***	0.5741***	0.5741***
	(0.0139)	(0.0180)	(0.0257)	(0.0290)	(0.0335)	(0.0121)	(0.0174)	(0.0201)	(0.0204)	(0.0204)
pol.			yes					yes		
lag				yes	yes				yes	yes
Rank test			485	136	45.7			825	434	281
p-value			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Sargan test			18.94					22.66		
p-value			(0.461)					(0.253)		

Results are for 1982-2005 and for the 22 largest US states. The regressions in columns (1)-(5) measure the tax system by 1 minus the ratio of the standard deviation of after tax income to the standard deviation of before tax income, while the regressions in columns (6)-(10) measure the tax system using the mean marginal tax rate. All regressions, except in columns (1) and (6), control for state fixed effects. In columns (3) and (8) the tax system is instrumented using a full set of political instruments, columns (4) and (9) use the lagged tax rate as the instrument, while columns (5) and (10) use both lagged taxes and lagged unemployment as the instrument (with the rank test reporting results for the unemployment instrument). We adopt the convention that * means significant at 10%; ** means significant at 5%; and *** means significant at 1%.

TABLE 4. The effect of taxes on mean log-consumption (trimmed data)

	Tax Redistributiveness					Mean Marginal Tax Rate				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax Measure	-0.0935	-0.0596	-0.1678*	-0.2997**	-0.4021	-0.1246	-0.2070**	-0.2056**	-0.3187***	-0.3657**
	(0.0773)	(0.0729)	(0.0954)	(0.1498)	(0.2734)	(0.0900)	(0.0860)	(0.1000)	(0.1116)	(0.1484)
Unemp. Rate					0.0024					0.0013
					(0.0041)					(0.0027)
Constant	7.2806***	7.4354***	7.3024***	7.4883***	7.4959***	7.2810***	7.4609***	7.2930***	7.4778***	7.4778***
	(0.0240)	(0.0262)	(0.0378)	(0.0416)	(0.0481)	(0.0214)	(0.0259)	(0.0295)	(0.0303)	(0.0304)
pol.			yes					yes		
lag				yes	yes				yes	yes
Rank test			485	136	45.7			825	434	281
p-value			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Sargan test			10.73					9.79		
p-value			(0.933)					(0.958)		

Results are for 1982-2005 and for the 22 largest US states. The regressions in columns (1)-(5) measure the tax system by 1 minus the ratio of the standard deviation of after tax income to the standard deviation of before tax income, while the regressions in columns (6)-(10) measure the tax system using the mean marginal tax rate. All regressions, except in columns (1) and (6), control for state fixed effects. In columns (3) and (8) the tax system is instrumented using a full set of political instruments, columns (4) and (9) use the lagged tax rate as the instrument, while columns (5) and (10) use both lagged taxes and lagged unemployment as the instrument (with the rank test reporting results for the unemployment instrument). We adopt the convention that * means significant at 10%; ** means significant at 5%; and *** means significant at 1%.

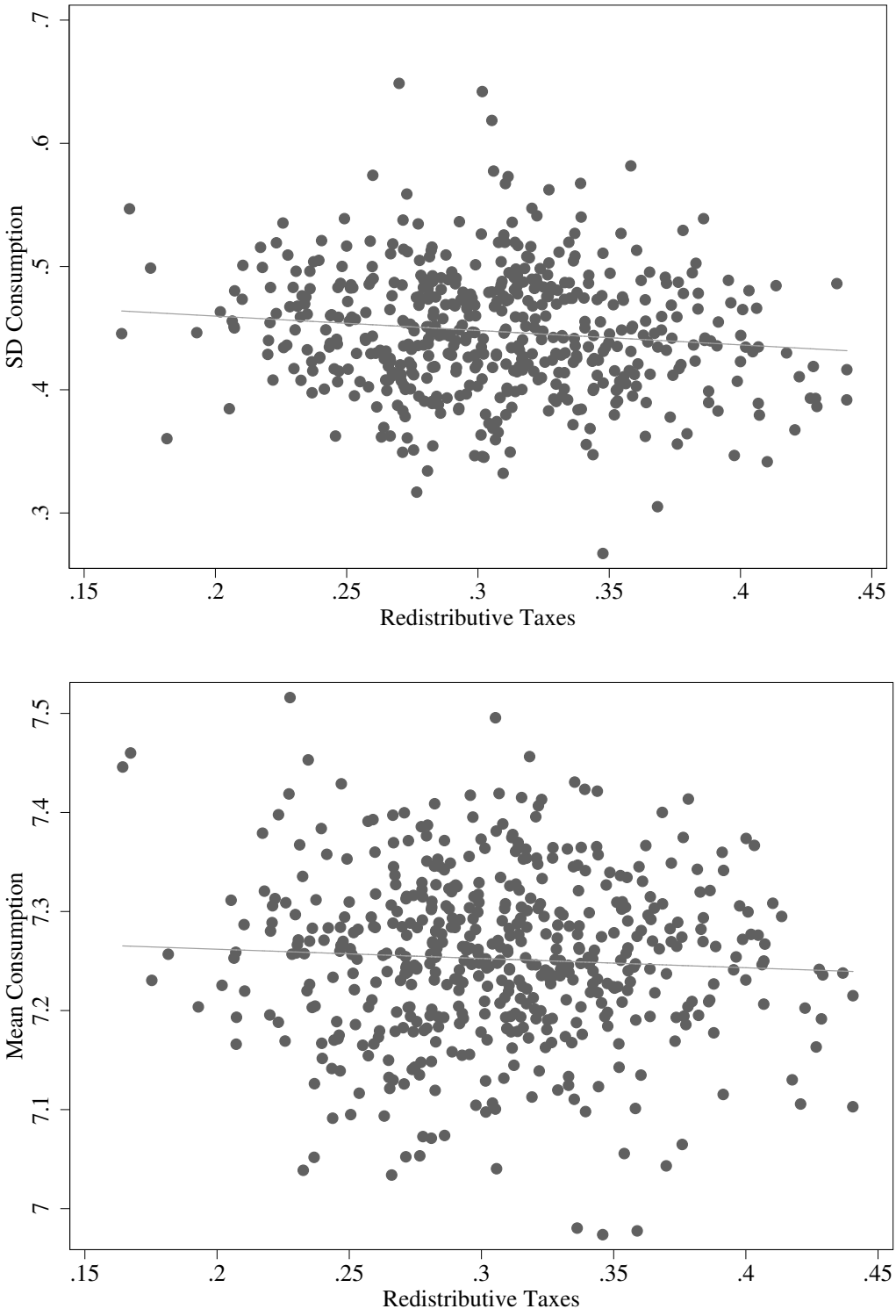

FIGURE 1. Non-Durable Consumption and Redistributive Taxation (trimmed data)