Amended Pre-Analysis Plan. Administrative Data.

Positive vs. Negative Incentives for Compliance: Evaluating a Randomized Tax Holiday

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October 19, 2014

Table 1: NATURAL EXPERIMENT. Effects of the tax holiday. Comparing winners to non-winners, distribution of the average of compliance for the years 1-5 after the end of the tax holiday.

type of test	tax	data	outcome	alternative	main test
KS test	all taxes	nat. exp. (admin data)	average of compliance	two-tailed	main
KS test	CI	nat. exp. (admin data)	average of compliance	two-tailed	main
KS test	TD	nat. exp. (admin data)	average of compliance	two-tailed	main
KS test	TS	nat. exp. (admin data)	average of compliance	two-tailed	main

Table 2: NATURAL EXPERIMENT. Effects of the tax holiday. Comparing winners to non-winners, difference in difference analysis (comparison A=mean of the year before winning vs. mean of the year after the tax holiday; comparison B= mean of three years before winning vs. mean of three years after tax holiday). Tests using compliance as an outcome are conditional on finding effects for either missed payments or number of payments owed for each given group comparison.

type of test	tax	data	comp.	outcome	alternative	main test
diff in diff	all taxes	nat. exp. (ad)	A	average of missed payments	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	A	average of missed payments	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	A	average of missed payments	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	A	average of missed payments	two-tailed	yes
diff in diff	all taxes	nat. exp. (ad)	A	average of payments owed	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	A	average of payments owed	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	A	average of payments owed	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	A	average of payments owed	two-tailed	yes
diff in diff	all taxes	nat. exp. (ad)	A	average of compliance	two-tailed	no
diff in diff	CI	nat. exp. (ad)	A	average of compliance	two-tailed	no
diff in diff	TD	nat. exp. (ad)	A	average of compliance	two-tailed	no
diff in diff	TS	nat. exp. (ad)	A	average of compliance	two-tailed	no
diff in diff	all taxes	nat. exp. (ad)	B	average of missed payments	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	B	average of missed payments	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	B	average of missed payments	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	B	average of missed payments	two-tailed	yes
diff in diff	all taxes	nat. exp. (ad)	B	average of payments owed	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	B	average of payments owed	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	B	average of payments owed	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	B	average of payments owed	two-tailed	yes
diff in diff	all taxes	nat. exp. (ad)	B	average of compliance	two-tailed	no
diff in diff	CI	nat. exp. (ad)	B	average of compliance	two-tailed	no
diff in diff	TD	nat. exp. (ad)	B	average of compliance	two-tailed	no
diff in diff	TS	nat. exp. (ad)	B	average of compliance	two-tailed	no

Table 3: NATURAL EXPERIMENT. Effects of the tax holiday. Comparing winners to non-winners, difference of means test for the total debt as of October, 2014. We limit the comparison to pre-2013 winners as the tax holiday might still apply for more recent winners.

type of test	tax	data	outcome	alternative	main test
t-test	all taxes	nat. exp. (ad)	total debt as of Oct, 2014	two-tailed	yes
t-test	CI	nat. exp. (ad)	total debt as of Oct, 2014	two-tailed	yes
t-test	TD	nat. exp. (ad)	total debt as of Oct, 2014	two-tailed	yes
t-test	TS	nat. exp. (ad)	total debt as of Oct, 2014	two-tailed	yes

Table 4: NATURAL EXPERIMENT. Persistence effects. CONDITIONAL TEST. Comparing winners to non-winners, difference in difference analysis looking at the change between the 5 years after the tax holiday and the 5 years before winning the lottery. We conduct this test only if we find effects for missed payments, number of payments owed or total debt for the 3 year window (comparison B).

type of test	tax	data	comparison	outcome	alternative	main test
diff in diff	all taxes	nat. exp. (ad)	C	average of missed payments	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	C	average of missed payments	two-tailed	yes
diff in diff	PR	nat. exp. (ad)	C	average of missed payments	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	C	average of missed payments	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	C	average of missed payments	two-tailed	yes
diff in diff	all taxes	nat. exp. (ad)	C	average of compliance	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	C	average of compliance	two-tailed	yes
diff in diff	PR	nat. exp. (ad)	C	average of compliance	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	C	average of compliance	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	C	average of compliance	two-tailed	yes
diff in diff	all taxes	nat. exp. (ad)	C	average of payments owed	two-tailed	yes
diff in diff	CI	nat. exp. (ad)	C	average of payments owed	two-tailed	yes
diff in diff	PR	nat. exp. (ad)	C	average of payments owed	two-tailed	yes
diff in diff	TD	nat. exp. (ad)	C	average of payments owed	two-tailed	yes
diff in diff	TS	nat. exp. (ad)	C	average of payments owed	two-tailed	yes

Table 5: FIELD EXPERIMENT: Informational Mechanism. Good and bad taxpayers, comparison of treatments 1, 2 and 4 (pooled) vs. the placebo control group (treatment 0). First differences use the value of the dependent variable for the pre-treatment period (March 2014).

type of test	tax	data	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	change in missed payment	two-tailed	yes
diff in diff	CI	field exp. (ad)	change in web bill requests	two-tailed	yes
diff in diff	CI	field exp. (ad)	nr of payments owed	two-tailed	yes
diff in diff	CI	field exp. (ad)	total debt	two-tailed	yes
diff in diff	CI	field exp. (ad)	compliance	two-tailed	no

Table 6: FIELD EXPERIMENT: Comparison of effects for good and bad taxpayers: difference of the difference of means for the comparison of treatments 1, 2 and 4 (pooled) vs. the placebo control group (treatment 0).

type of test	tax	data	outcome	alternative	main test
t-test	CI	field exp. (ad)	missed payment	two-tailed	yes
t-test	CI	field exp. (ad)	web bill requests	two-tailed	yes

Table 7: NATURAL EXPERIMENT. Income effects. Winners vs. non-winners heterogeneous effects of winning the lottery by tax bracket.

type of test	tax	data	outcome	alternative	main test
chi-squared	CI	nat exp. (ad)	missed payments	two-tailed	yes

Table 8: NATURAL EXPERIMENT. Habit effects. Winners vs. non-winners: heterogeneous treatment effects by time since winning (heterogeneous effects; 1, 2 and 3 years).

type of test	tax	data	outcome	alternative	main test
t-test	CI	field exp. (ad)	missed payment (year 1)	two-tailed	yes
t-test	CI	field exp. (ad)	missed payment (year 2)	two-tailed	yes
t-test	CI	field exp. (ad)	missed payment (year 3)	two-tailed	yes

Table 9: FIELD EXPERIMENT. Priming knowledge of punishment. Good and bad taxpayers, comparison of treatments 3 and 5 (pooled) vs. the placebo control group (treatment 0). Test using compliance conditional on significant effects for missed payment, number of payments owed or total debt.

type of test	tax	data	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	missed payment	one-tailed	yes
diff in diff	CI	field exp. (ad)	web bill requests	one-tailed	yes
diff in diff	CI	field exp. (ad)	nr of payments owed	one-tailed	yes
diff in diff	CI	field exp. (ad)	total debt	one-tailed	yes
diff in diff	CI	field exp. (ad)	compliance	one-tailed	no

Table 10: FIELD EXPERIMENT: Comparison of effects for good and bad taxpayers: difference of the difference in means for the comparison of treatments 3 and 5 (priming knowledge of sanctions, pooled) vs. the placebo control group (treatment 0).

type of test	tax	data	outcome	alternative	main test
t-test	CI	field exp. (ad)	missed payment	two-tailed	yes
t-test	CI	field exp. (ad)	web bill requests	two-tailed	yes

Table 11: FIELD EXPERIMENT. Positive vs negative incentives. Good and bad taxpayers, comparison of treatments 1, 2 and 4 (positive incentives, pooled) vs 3 and 5 (negative incentives, pooled). Test using compliance conditional on significant effects for missed payment, number of payments owed or total debt.

type of test	tax	data	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	missed payment	two-tailed	yes
diff in diff	CI	field exp. (ad)	web bill requests	two-tailed	yes
diff in diff	CI	field exp. (ad)	nr of payments owed	two-tailed	yes
diff in diff	CI	field exp. (ad)	total debt	two-tailed	yes
diff in diff	CI	field exp. (ad)	compliance	two-tailed	no

Table 12: FIELD EXPERIMENT. Comparison of effects of positive vs negative incentives for good and bad taxpayers: difference of the difference in means for the comparison of treatments 1, 2 and 4 (pooled) and 3 and 5 (pooled).

type of test	tax	data	outcome	alternative	main test
t-test	CI	field exp. (ad)	missed payment, GTP vs BTP	two-tailed	yes
t-test	CI	field exp. (ad)	web bill requests, GTP vs BTP	two-tailed	yes

Table 13: FIELD EXPERIMENT. Marginal taxpayers. Good taxpayers. Heterogeneous effects, taxpayers at risk. Comparison of treatment effect of 1, 2 and 4 (pooled) vs control (A-Information about the tax lottery), on one test and 3 and 5 (pooled) vs control on another (B-Information about sanctions).

type of test	tax	data	treat	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	A	missed payment (at risk vs not)	one-tailed	yes
diff in diff	CI	field exp. (ad)	A	web bill requests (at risk vs not)	one-tailed	yes
diff in diff	CI	field exp. (ad)	B	missed payment (at risk vs not)	one-tailed	yes
diff in diff	CI	field exp. (ad)	B	web bill requests (at risk vs not)	one-tailed	yes

Table 14: FIELD EXPERIMENT. Marginal taxpayers. Bad taxpayers. Heterogeneous effects, salvageable taxpayers. Comparison of treatment effect of 1, 2 and 4 (pooled) vs control (A-Information about the tax lottery), on one test and 3 and 5 (pooled) vs control on another (B-Information about sanctions). Test using compliance conditional on significant effects for missed payment, number of payments owed or total debt.

type of test	tax	data	treat	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	A	missed payment (high debt)	one-tailed	yes
diff in diff	CI	field exp. (ad)	A	web bill requests (high debt)	one-tailed	yes
diff in diff	CI	field exp. (ad)	A	nr of payments owed (high debt)	one-tailed	yes
diff in diff	CI	field exp. (ad)	A	compliance (high debt)	one-tailed	no
diff in diff	CI	field exp. (ad)	B	missed payment (high debt)	one-tailed	yes
diff in diff	CI	field exp. (ad)	B	web bill requests (high debt)	one-tailed	yes
diff in diff	CI	field exp. (ad)	B	nr of payments owed (high debt)	one-tailed	yes
diff in diff	CI	field exp. (ad)	B	compliance (high debt)	one-tailed	no

Table 15: FIELD EXPERIMENT. Good and bad taxpayers. Social vs individual rewards. Comparison of treatments 1, 2 (pooled) vs 4. Test using compliance conditional on significant effects for missed payment, number of payments owed or total debt.

type of test	tax	data	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	missed payment	two-tailed	yes
diff in diff	CI	field exp. (ad)	web bill requests	two-tailed	yes
diff in diff	CI	field exp. (ad)	nr of payments owed	two-tailed	yes
diff in diff	CI	field exp. (ad)	total debt	two-tailed	yes
diff in diff	CI	field exp. (ad)	compliance	two-tailed	no

Table 16: FIELD EXPERIMENT. Social (4) vs individual rewards (1 and 2, pooled), comparison of effect between good and bad taxpayers.

type of test	tax	data	outcome	alternative	main test
t-test	CI	field exp. (ad)	missed payment (GTP vs BTP)	two-tailed	yes
t-test	CI	field exp. (ad)	web bill requests (GTP vs BTP)	two-tailed	yes

Table 17: FIELD EXPERIMENT. Good and bad taxpayers. Social vs individual sanctions. Comparison of treatments 3 vs 5. Test using compliance conditional on significant effects for missed payment, number of payments owed or total debt.

type of test	tax	data	outcome	alternative	main test
diff in diff	CI	field exp. (ad)	missed payment	two-tailed	yes
diff in diff	CI	field exp. (ad)	web bill requests	two-tailed	yes
diff in diff	CI	field exp. (ad)	nr of payments owed	two-tailed	yes
diff in diff	CI	field exp. (ad)	total debt	two-tailed	yes
diff in diff	CI	field exp. (ad)	compliance	two-tailed	no

FIELD EXPERIMENT. Social vs individual sanctions. Comparison of effects for good and bad taxpayers. Comparison of treatments 3 vs 5. Test using compliance conditional on significant effects for missed payment, number of payments owed or total debt.

type of test	tax	data	outcome	alternative	main test
t-test	CI	field exp. (ad)	missed payment	two-tailed	yes
t-test	CI	field exp. (ad)	web bill requests	two-tailed	yes