

Comments on Cash Transfer Effects on Tobacco Consumption

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Motivation

- Cash Transfers (CT) and development policy
- The paper motivates its question mainly on academic grounds – one more case study of CT effect on temptation goods
- But the justification for the CT in Iran is different than in developing countries
 - Concern with impact on labor supply and temptation goods central to the debate if Iranians should get a small percentage of their oil wealth in cash

Consumption of cigarettes per household

year	2008	2009	2010	2011	2012	2013
Rural (mean)	524	539	553	561	557	549
(S. D.)	(328)	(384)	(339)	(367)	(404)	(323)
Rural (mean) if age \leq 40	487	492	498	534	520	503
(S. D.)	(314)	(354)	(368)	(397)	(345)	(366)
Urban (mean)	475	487	490	496	481	461
(S. D.)	(368)	(413)	(393)	(405)	(341)	(361)
Urban (mean) if age \leq 40	416	421	428	461	414	402
(S. D.)	(374)	(403)	(396)	(387)	(346)	(412)

Table 3: Monthly average cigarettes consumption by households

But what proportion of households use tobacco?

Modeling issues

- Difference-in-differences methodology using two groups in HEIS panel: those who did not receive CT in first 3 months of program vs. those who did (Salehi-Isfahani et al 2015)
- Demand for tobacco is part of a system of demand.
- Single equation estimates are problematic if prices change differently for different treatment groups

Why reverse the order of years?

year	treatment group	control group
2010 (year 1)	subsidy=0	subsidy>0
2011 (year 0)	subsidy>0	subsidy>0
2010 (year 1)	subsidy=0	subsidy>0
2012 (year 0)	subsidy>0	subsidy>0

Table 4: Policy design, program and control groups in HIESs

But the treatment effect is identified using standard definition of before and after

$$y_{it} = \alpha_0 + \alpha CT_{it} + \beta Year + \delta CT_{it} \times Year + \mathbf{x}_{it}\beta + \epsilon_{it},$$

	Control (T=0)	Program (T=1)	Difference groups
Year=0 (1389)	α_0	$\alpha_0 + \alpha$	α
Year=1 (1390)	$\alpha_0 + \beta$	$\alpha_0 + \alpha + \beta + \delta$	$\alpha + \delta$
Difference years	β	$\beta + \delta$	δ

Dose response

- Intensity of treatment (dose) is calculated as the ratio of CT to expenditures on “12 main items” (categories?)
- Income (minus CT) in denominator might be a better measure of intensity of treatment (dose) than expenditure
- Why negative doses, which prompts this re-definition?

$$D_i^N = \frac{D_i - \min D_i}{\max D_i - \min D_i} \times 100$$

Data issues

- “Surprisingly there were figures [of CT] with the amount for the first month of 1389 (Farvardin) [8 months before CT program started]....We think there must be mistake in data entry ...
- Farvardin data refers to Esfand of previous year. HEIS asks about the previous month!

Attrition and re-weighting

- Rotating panel: 2010 is the first year of HEIS panel, one-third of households rotate out.
- High rate of attrition: about one-third of the households designated as panel in 2010 do not appear in the 2011 survey.
- HEIS households are identified by their physical address, so when a family interviewed in year 1 moves, it is replaced with the new residents and receives the same household ID.

Need to re-weight the sample

- To account for attrition (Fitzgerald et al. 1998)
- The authors present this table of attrition but do not say what it means, or the need to re-weight

Region	Rural	Urban
2010-2011 winter	36.6	46.7
2010-2011 whole year sample	36.9	46.6
2010-2012 winter	63.1	70.9
2010-2012 whole year sample	61.9	69.6

Table 8: Attrition rate in rural and urban areas

Balanced and intact samples

- Many households with the same address in both years are not the same
- In Salehi-Isfahani and Mostafavi (2014) we find 17,234 households in our balanced sample (after matching for age and sex of household members).
- Of these, the intact households (no change in membership) number only 11,631 households

Who in the household smokes?

- “with a high degree of confidence we can assign the reported number of cigarettes to the head of family.”
- Explains why the average consumption of cigarettes is high (about one pack a day)

Regression results

- No perceptible effect on tobacco consumption from CT, from diff-in-diff or dose response

Diff-in-diff results

	(1)	(2)	(3)	(4)
	Rural	Rural	Urban	Urban
VARIABLES	2010-2011	2010-2012	2010-2011	2010-2012
treatment	1.925 (8.187)	29.19* (14.45)	-22.81 (15.53)	-39.39 (23.73)
time	-3.878 (7.161)	-10.19 (10.33)	-15.30* (8.614)	-37.34 (25.43)
treatment × time	-0.127 (9.367)	-28.73* (15.28)	26.37* (15.21)	29.56 (24.98)
Log_cigarette_price	-23.65*** (6.514)	-31.85*** (8.912)	-16.69* (8.878)	-16.71* (9.56)
SchoolingYears	-1.600* (0.954)	-1.537* (1.325)	-4.386*** (0.894)	-3.070* (1.808)
Log_Expenditures	13.93** (6.922)	26.40*** (9.085)	17.445* (9.086)	13.142* (7.93)
Constant	-46.18 (544.4)	-622.7 (526.1)	333.2 (554.1)	100.2 (810.8)
Observations	552	282	250	130

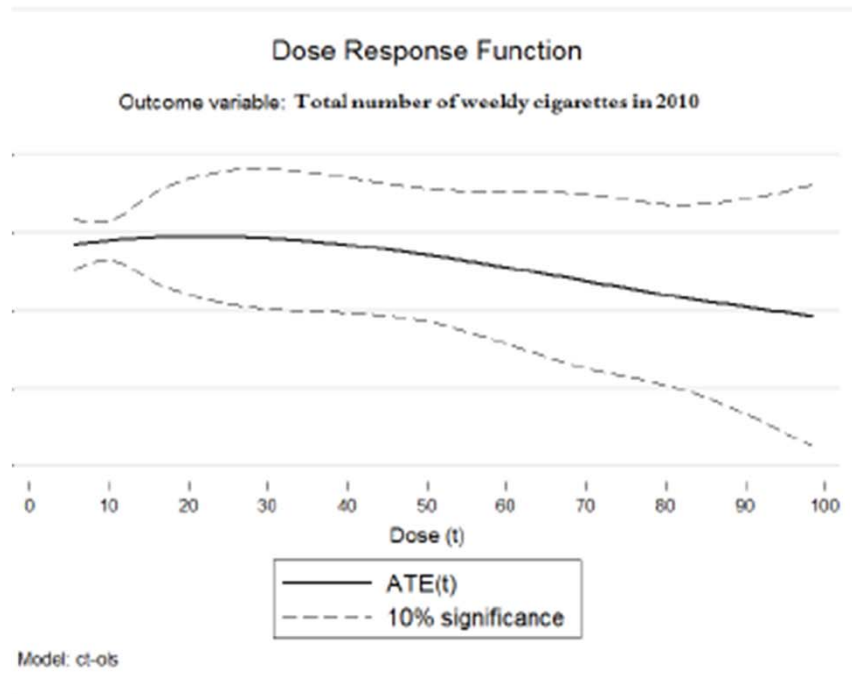
Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

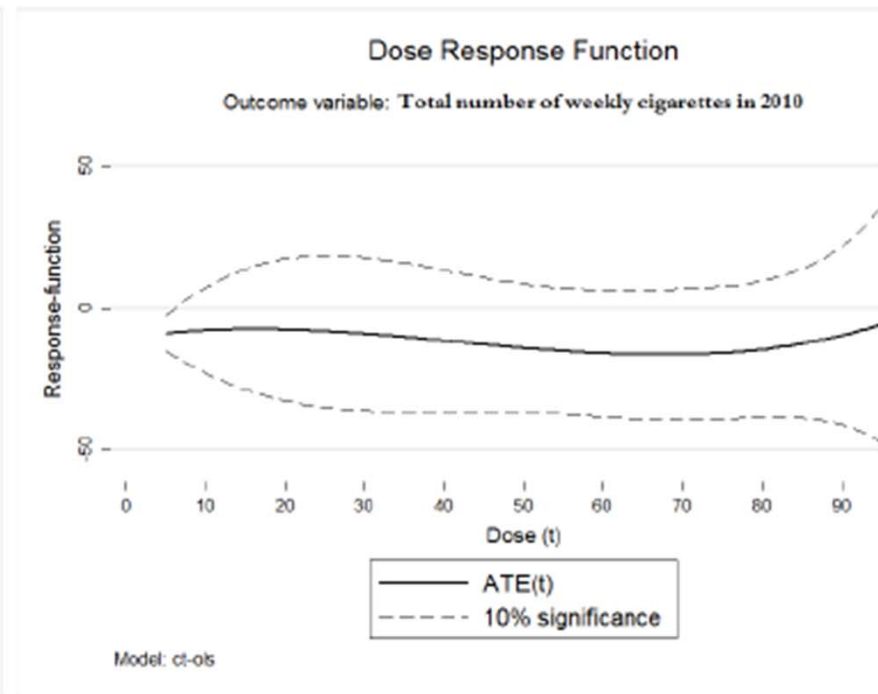
Dose response

- Dose response does not require panel data and can be estimated for 2011, when nearly everyone is getting CT. Why use only 2010?
- Can use fixed effects for dose response. How does tobacco consumption change for low and high dose treatments?

Results from the Dose-Response Functions, rural households



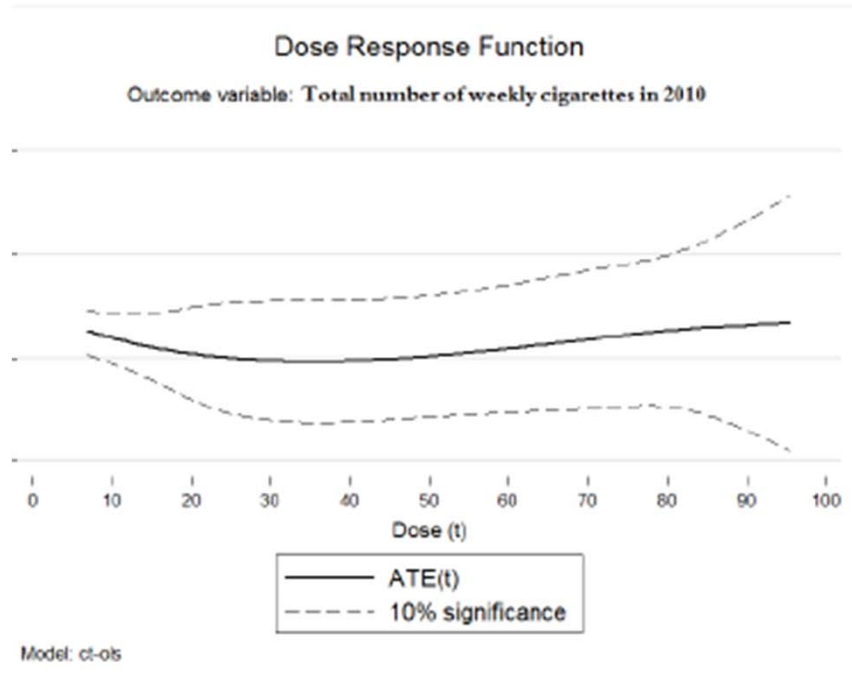
DRF for winter



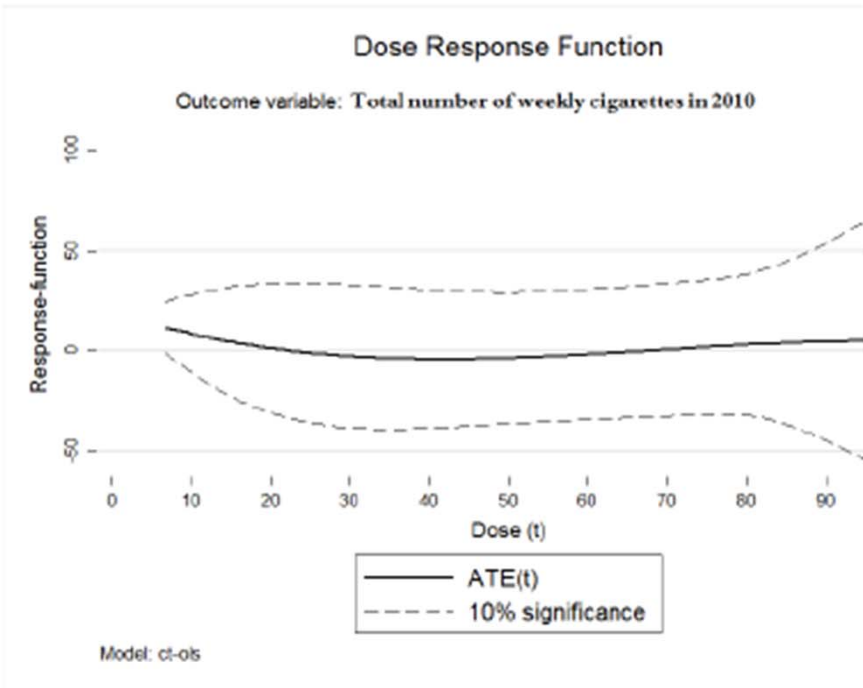
DRF for whole sample

Figure 1: DRF for total number of smoked cigarettes, rural households, 2010

Urban



DRF for households surveyed at winter



DRF for whole year sample

Figure 2: DRF for urban households in 2010

Final comments

- Important investigation for policy in Iran
- Non-results are hard to sell
- Explore subgroups who may have higher propensity to use tobacco
- Other temptation goods?
 - “Other drinks”
 - Restaurant meals