Self Control or Social Control?
Peer Effects and Temptation Consumption

Yating Chuang
Department of Agricultural and Applied Economics
University of Wisconsin-Madison
ychuang5@wisc.edu

Poster prepared for presentation at the Agricultural & Applied Economics Association's 2013 AAEA Annual Meeting, Washington DC, August 13-14, 2013

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Introduction

- Villagers in developing countries rely on social networks.
- Social interaction is critical to understand people's behaviors, such as technology adoption, health, usage of financial product. Existing literature often neglects the importance of social interaction.
- Myopic behaviors have implication on poverty trap and the accumulation of wealth.

Research Questions

1) Are individual's temptation consumption behaviors affected by their peers.

2) What is the mechanism of the peer effect

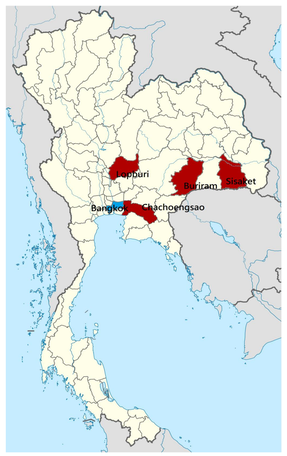
Contribution

- Incorporate **social interaction** in understanding self-control problems
- Empirically identify peer effects (using **real social relations**) in people's consumption behaviors

Data & Study Region

- Townsend Thai Monthly Survey from **1999 to 2004**
- 480 households in 16 villages in Thailand
- Information includes basic demographics, social networks (financial, gift & exchange, labor-sharing)
- Temptation includes alcohol, tobacco, lottery and gambling

Figure: Map of surveyed regions in Thailand

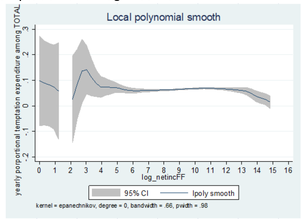


Theoretical Model

- Social-Norm:
  - Two-period model
  - Gain utility from consuming both non-temptation goods and temptation goods in the current period
  - Do not gain utility from consuming temptation goods in the future period; the previous self is subject to the disutility of tomorrow's temptation spending
  - Feel bad deviating from peers' temptation consumption
- Model predictions:
  - Increasing peers' temptation consumption leads to the **increase** of individuals' temptation consumption, but no effect on non-temptation consumption
  - Peer effect is stronger if consumption behavior is **more observable**
  - Individuals encountering negative income shock consume **more** when consumption is small; peers' income shock will do the same through conformity effect

Results

Table: Relation between Proportional Spending on Temptation and Log Income



✓ **The poor spend proportionately more on temptation goods**

Consumption Relationship between Own and Peer

Dependent variable: household's consumption

	temp	non-temp
Peer's temptation consumption	3.438***	
	(0.739)	
Peer's non-temptation consumption		1.785
		(1.240)
Village-year fixed effect	Yes	Yes
Observations	24,424	24,424
F-stat of 1st Stage	1.733	1.733

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

✓ **Own and peers' temptation consumption are highly correlated**
✓ **The effect still exists by adding peers' total consumption**

Empirics

Main interest of estimation:

$$temp_{ivt} = \alpha_0 + \alpha_1 temp_{G_i vt} + \alpha_2 X_{G_i} + \alpha_3 X_i + f_{vt} + \varepsilon_{ivt}$$

Expect $\alpha_1 > 0$

There are potential problems of **reflection**, **correlated effect**, **simultaneity**.

Use **excluded peer** as IV to solve the endogeneity.

1st stage: $temp_{G_i vt} = \beta_0 + \beta_1 Z_{k_i vt-1} + \beta_2 X_{ivt} + f_{vt} + \eta_{G_i vt}$

2nd stage: $temp_{ivt} = \delta_0 + \delta_1 temp_{G_i vt} + \delta_2 X_{ivt} + f_{vt} + \varsigma_{G_i vt}$

$temp_{ivt}$: Average temptation consumption of household i

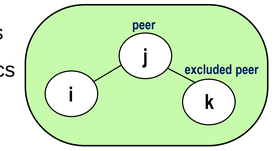
$temp_{G_i vt}$: Average temptation consumption of household i's peer group G_i net of i's spending

$Z_{K_i vt-1}$: Average temptation consumption of individual i's excluded peer group K_i in village v at time *t-1*

X_{G_i} : Network characteristics

X_i : Household characteristics

f_{vt} : Village year fixed effect



Results

Aocohol Consumption at Home and Outside

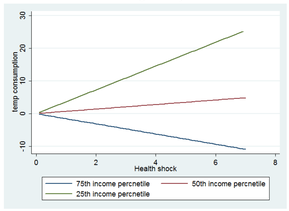
Dependent variable: household's alcohol consumption

	at home	outside	at home	outside
Peer's alcohol consumption at home	0.752		1.117	
	(0.459)		(0.915)	
Peer's alcohol consumption outside		3.719***		3.178***
		(0.582)		(0.792)
Peer's total consumption			-0.00271	0.00598
			(0.0347)	(0.0199)
Village-year fixed effect	Yes	Yes	Yes	Yes
Observations	24,424	24,424	24,424	24,424
F-stat of 1st Stage	18.85	52.32	1.452	1.458

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

✓ **Peer effect is stronger for alcohol consumption outside**

Table: Income Heterogeneity of Shock Effect



✓ **Income shock has positive effect on temptation consumption, especially among the poor**

Conclusion

- The poor spend **proportionately more** on temptation goods; yearly temptation spending is equivalent to yearly education spending
- People's temptation consumption is affected by their peers
- This peer effect is through the mechanism of **social norm**, rather than risk-sharing
- Peer effect is much stronger in **temptation consumption**, than non-temptation consumption
- The effect is stronger among **more observable consumption**
- Income shock leads to the **increase of individual's temptation consumption** among the poor
- Peers' income shock can also affect individual's temptation consumption through myopic decision-making

Robustness Check

- Sampled network can create bias
  - Robust using 50 percent of the sample
- What if people's consumption have complementarity
  - Robust excluding alcohol consumption
  - Robust using only lottery consumption
  - Instrument is at time *t-1*
- Controlling for group-level characteristics
- Using temptation consumption at *t* as the instrument
- Using log consumption to examine peer effects
- Controlling for seasonal effect

Further Information

Please contact ychuang5@wisc.edu for more information.
The results are preliminary, please do not cite without permission. Any comment is highly appreciated.