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Validating the Use of Time Preference Proxies to Explain Effects on Health Outcomes

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Introduction

- Variations in time preferences help to explain variations in obesity levels.
- Impatient individuals weigh present gratification more than future well-being.
- Many researchers elicit the discount rate using questionnaires for hypothetical monetary present-future tradeoffs.
- Others use proxies for time preferences.

Objective

- The objective of this paper is to scrutinize the use and validity of such proxies for time preferences in investigations of obesity.

Data

- I use data from the National Longitudinal Survey for Youth (NLSY79).
- The NLSY79 includes variables often used as proxies for time preferences.
 - Net worth
 - Bank account
 - Bankruptcy
 - Max credit card
- In 2006, the NLSY79 added two hypothetical present-future tradeoff questions to its survey.
 - In the first question, the respondent indicates the amount needed to delay receiving \$1,000 for a month.
 - In the second question, the respondent indicates the amount needed to delay receiving \$1,000 for a year.
- Using the answers to the hypothetical questions, we compute two discount factors.
 1. Monthly discount factor
 2. Annual discount factor

Model

We investigate how well proxy variables represent elicited discount rates in analyzing the effects of time preferences on obesity.

- Effects of the elicited discount factors

$$BMI = \beta_1 DF_i + X' \beta_2 + \epsilon \quad i = 1, 2$$

where BMI denotes Body Mass Index (obesity) and DF_i denotes the discount factor, $i = 1$ is the monthly DF and $i = 2$ is the annual DF. X denotes a vector of controls.

- Effects of proxies

$$BMI = \alpha_1 B_j + X' \alpha_2 + \epsilon \quad j = 1, 2, \dots, J$$

where B_j denotes the time preference proxy.

Correlation Matrix

Variables	DF ₂	DF ₁
DF ₂	—	
DF ₁	0.58	—
Net worth	0.11	0.07
Bank account	0.11	0.10
Max credit card	-0.05	-0.05
Bankruptcy	-0.03	0.00

Results

Regression results

Dependent variable:	(1)	(2)
BMI	No controls	All controls
DF ₂	-1.249*** (0.339)	-0.803** (0.342)
DF ₁	-1.084*** (0.264)	-0.768*** (0.267)
Net worth	-0.014*** (0.002)	-0.008*** (0.002)
Bank account	-2.400*** (0.288)	-1.117*** (0.411)
Max credit card	1.159*** (0.328)	0.907*** (0.328)
Bankruptcy	0.996*** (0.255)	0.670*** (0.254)

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

Conclusion and Discussion

- Variations in financial time preference proxies correspond to variations in elicited discount rates.
- For further analysis:
 - We will test other proxies.
 - Because the elicitation questions cover two time frames, we can investigate hyperbolic discounting in relation to the proxy measures.

Selected References

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