# Understanding voter turnout among the youth: evidence from Chile

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11/04/2018

# Research questions

1. What is the effect of cognitive skills on political participation?

2. What set of variables -including cognitive skills, household demographics and school characteristics, are the most predictive of political participation?

# Actionable insights

- Describe in simple words the profile of the likely voter, in such a way that anybody could understand.
- Discuss if it would make sense for political campaigns to target their messages based on cognitive skills, income or both.
- More generally, try to generate an output that in theory may be useful for a campaign, even if we are doing this exercise for the class.

# What explains political participation?

- Research in American Politics has focused on variables such as education (Delli Carpini 2000, Berinsky & Lenz 2011), race (Fraga 2016), electoral laws (Holbein & Hillygus 2016), political competition (Sandell 2008), class / union membership (Leighley & Nagler 2007), etc.

- In Comparative Politics, particularly in Latin America, scholars have focused on civic networks (Carreras & Castañeda 2014) and the interaction between age and class (Corvalán & Cox 2013).

- Typically, they have used self-reported indicators of voter turnout, such as the American National Election Studies.

# What explains political participation? The role of cognitive skills

- However, scholars have usually have not been able to disentangle two different effects: education -measured through years of schooling- and cognitive skills -measured through test scores in particular subjects- (Condon 2015).

- By using the National Education Longitudinal Study of 1988 (NELS), she found a positive effect of verbal skills acquired during adolescence.

- Our paper: builds on this tradition of research in Political Science.

- Our contributions: 1) we can also disentangle years of schooling from cognitive skills, 2) behavioral (not self-reported) measure of political participation, 3) rich set of covariates.

# Data

We use two sources of data, both from Chile:

1. University Admission Test (PSU) for the 2008 academic year (taken in December 2007). Equivalent to the SAT in the US. Contains test scores (verbal, math and history), high school GPA, school characteristics and household demographics.

2. Electoral registers of the presidential election of 2009. This was the last election with mandatory voting. Thus, people in this list actively decided to vote in the 2009 election. We merged both sources by national id number. If a subject from the PSU data is in the electoral registers, it means that she / he decided to vote in the 2009 election (outcome)

# Characteristics of the final sample

- Given that is possible for people to re-take the test, there is some age variability in our sample. We decided to keep students who were born between 1988 and 1991, since older people had much more time to register to vote. Moreover, we kept students with non-missing values in test scores and who finished high school in 2007. With this filters, the sample size is 115,201 observations.

- Among this subset of students, 14% decided to participate in the next presidential election.

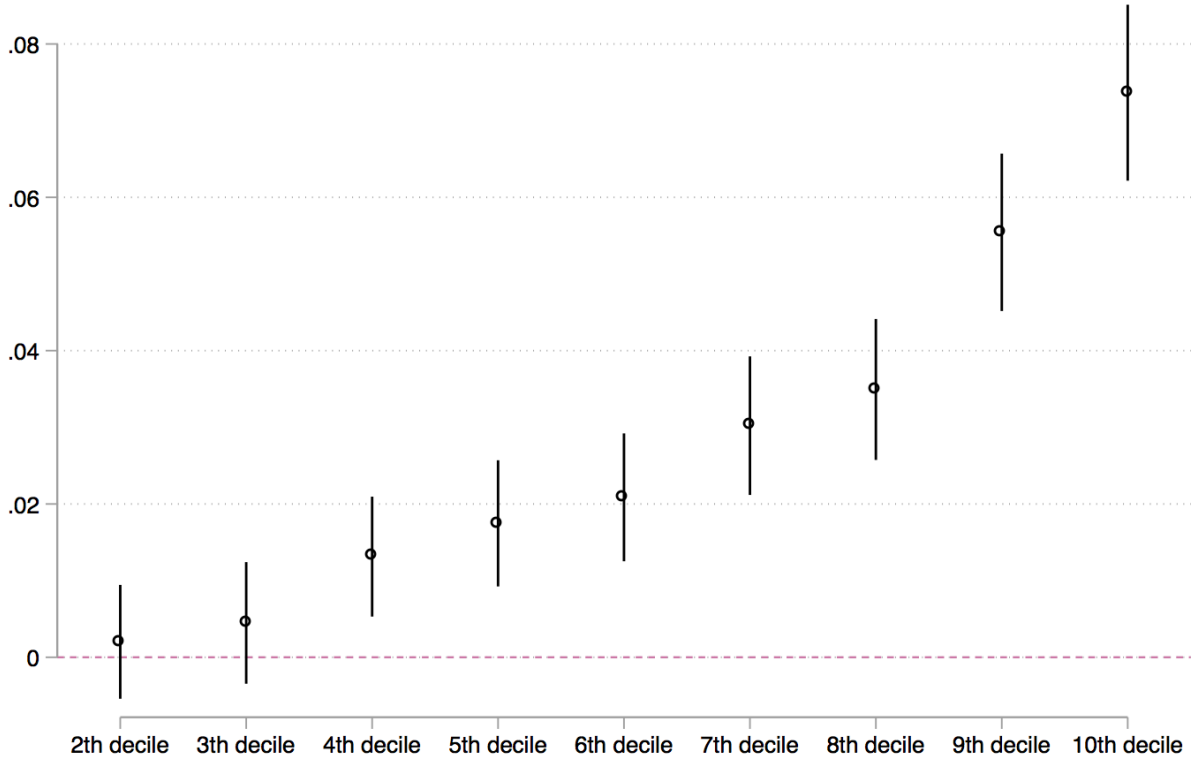
# Logistic regression model

$$ln\left(\frac{F(x)}{1-F(x)}\right) = \beta_0 + \sum_{j=2}^{10} \beta_j (scores)_i + \sum_{j=2}^{8} \beta_j (income)_i +$$
$$\beta_3 (School)_{is} + \beta_4 (hh)_i + \beta_5 (region)_r + \epsilon$$

# Logistic regression model

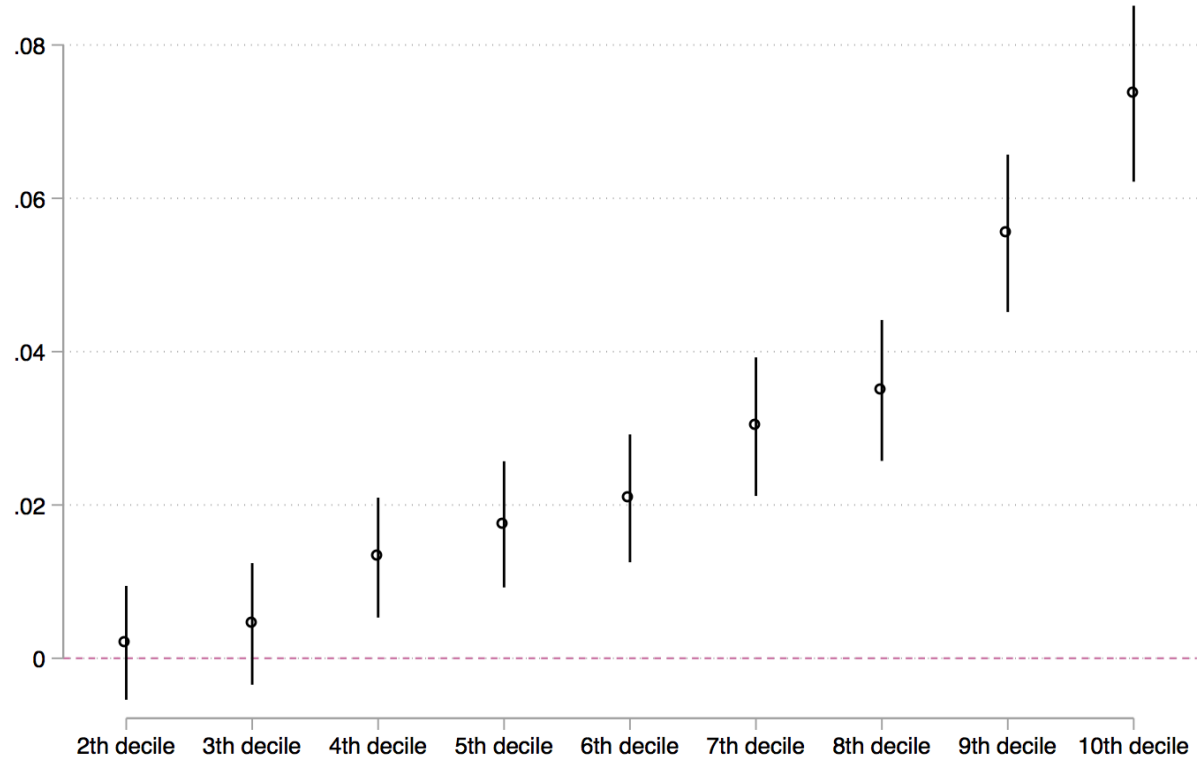
- Scores: math and language. Both are grouped in deciles, where decile 10 is the highest 10%.
- Income: measured in groups from 1 to 8. It was reported the day of the exam.
- School characteristics: 1) public or private and 2) focus on science and humanities or in professional skills.
- Household characteristics: 1) father education, 2) mother occupation and 3) mother occupation.
- Region: factor variable for the region of the country.
- Did not include History scores because of missing values (optional test)

# Marginal effects of language test scores



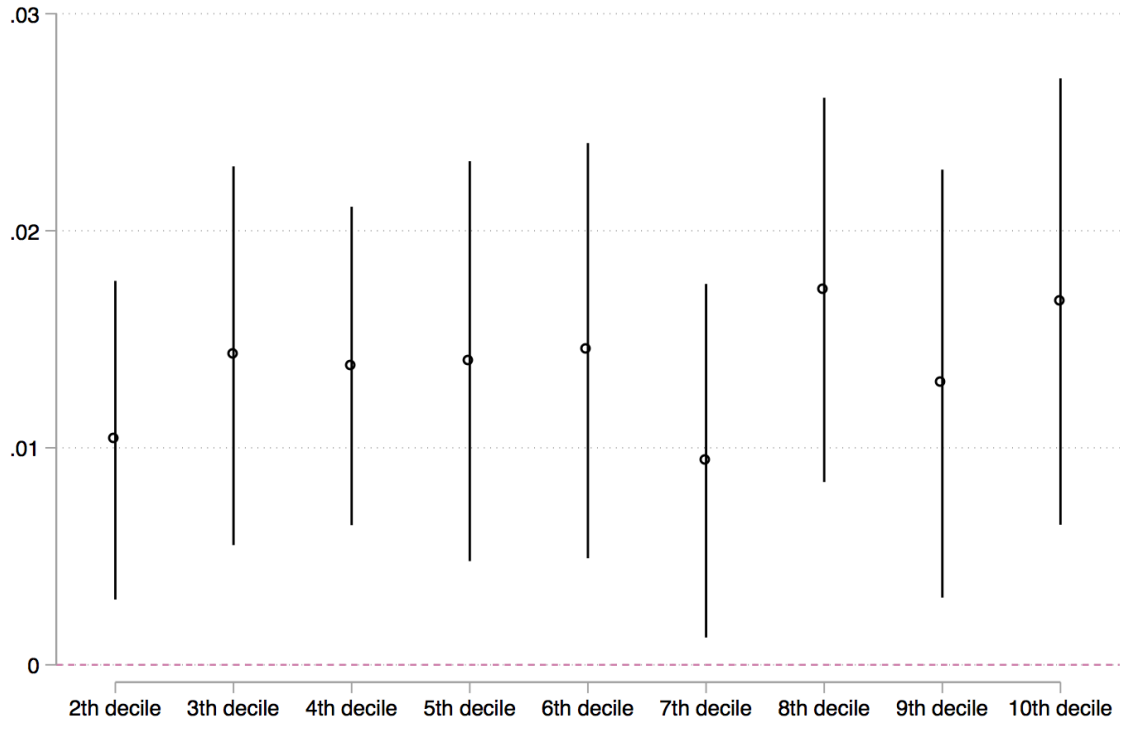

- Y-axes: probability of participate in the election.
- Omitted category: lowest 10%.
- All other covariates at the mean.

# Marginal effects of math test scores



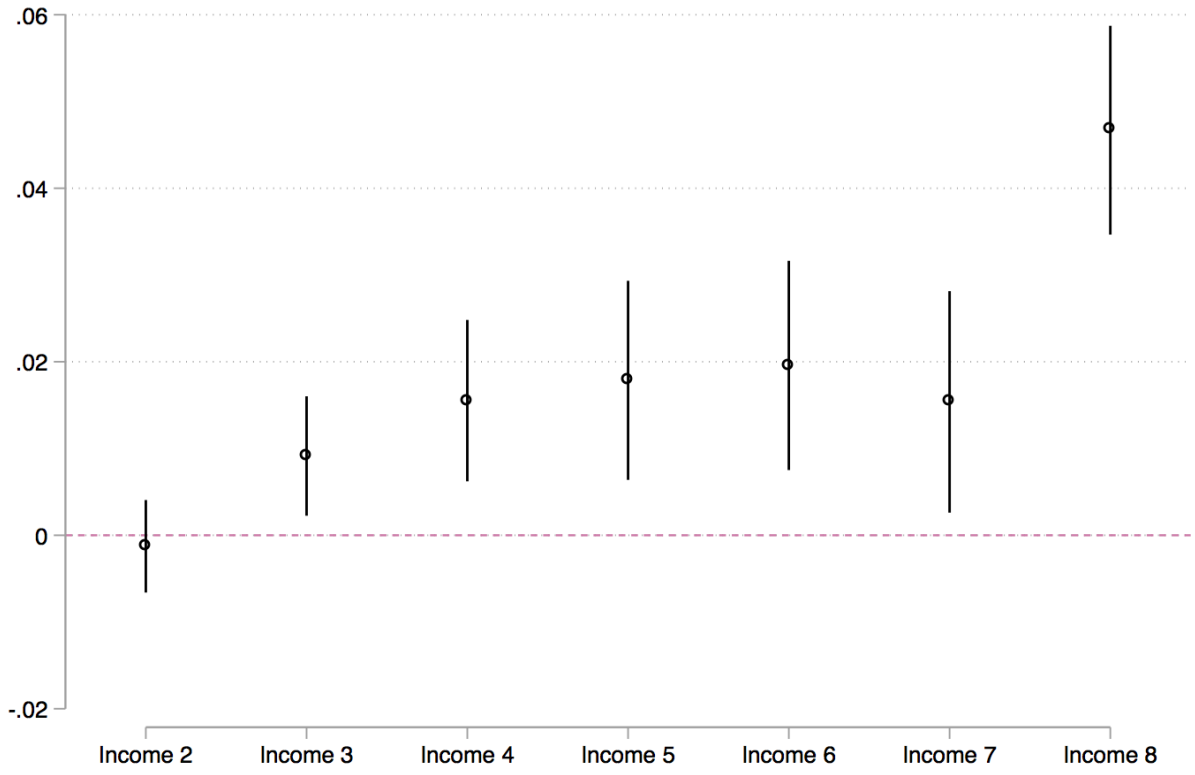

- Omitted category: lowest 10%.
- All other covariates at the mean.

# Marginal effects of grades




- Omitted category: lowest 10%.
- All other covariates at the mean.

# Marginal effects of income




- Omitted category: lowest income category
- All other covariates at the mean.

# What we learned

- Going from the lowest decile to the highest decile in language test scores increases the probability of participating in the election in 0.05 percentage points.
- Appears to be a jump at the two highest deciles of language scores.
- Consistent with the literature, not a significant effect of math.
- Positive, constant and noisy marginal effect of grades.
- Big jump in the marginal effect of income at the highest level.
- Is the 1%?.

# Conclusions

- For policy makers, it would be useful to target disadvantaged youngsters, since they are the ones that are participating less.
- For campaigns, it would be more efficient to target the wealthy, since they are the more likely voters.