Social background inequalities in school dropout

Luana Marotta
lmarotta@stanford.edu

Abstract

Motivation
- Brazil has one of the highest dropout rates in Latin America.
- School dropout disproportionately affects students from lower social backgrounds.
- Wage differences between high school graduates and dropouts have increased.

Conceptual Framework
Raymond Boudon's distinction between 'primary' and 'secondary' effects:
- Students from diverse social backgrounds have different probabilities to drop out of school because they have distinct levels of academic performance—**primary effects**.
- Students from diverse social backgrounds have different probabilities to drop out of school even when their level of performance is held constant—**secondary effects**.

Research questions
1. To what extent do different measures of academic performance mediate the relationship between students' social background and dropout?
2. Do the primary and secondary effects of social background on dropout vary by grade level?

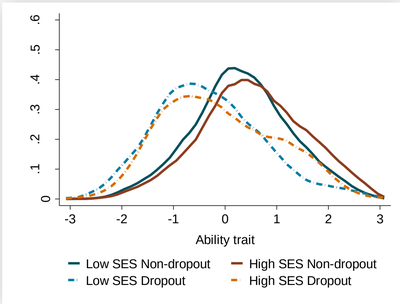
Data
C-IDEAS data, from the Department of Economics at the University of São Paulo (FEA-USP). Focus on the cohort of students who, in 2008, were enrolled in grade 8 in state schools from São Paulo.

Method
Karlson, Holm, and Breen (KHB) decomposition method.

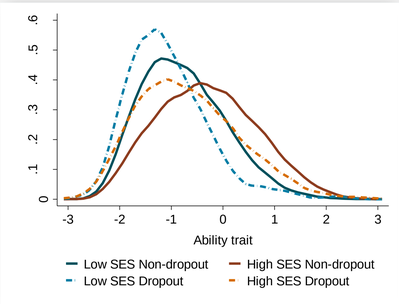
Performance measures

Academic performance can be measured in different ways:

Student grade in school transcripts



Student score in standardized tests



Sample: Grade 8 students from state schools who participated in the SARESP 2008
Note: SES stands for Socio-Economic Status

- The distribution of school grades is more skewed to the right than the test score distribution.
- School grades discriminate better between dropout and non-dropout students; whereas the difference between low and high SES students is more evident in the test score distribution.

Disentangling primary effects

Are differentials in school dropout explained by differences in academic performance between students from lower and higher social background?

Yes. In 8th grade, 80% of the SES inequalities in dropout seem to be associated with **primary effects**—performance differences—and 20% with **secondary effects**.

Which measures of academic performance are more relevant to primary effects?

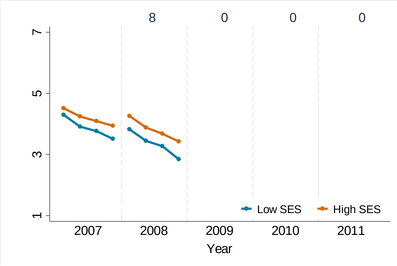
	Contribution to primary effects (%)
School grade	57.5
Relative school grade	28.4
Test scores	3.1
Bad student (parent perception)	1.0
Bad student (student perception)	10.0

Note: the percentages in light gray are not statistically significant.

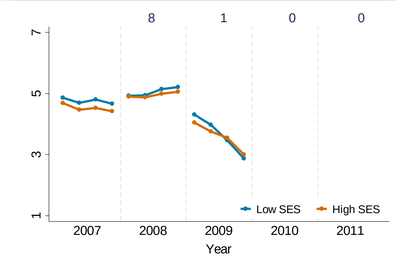
School grade trajectory by SES

What is the trajectory of students' school grade by socioeconomic background?

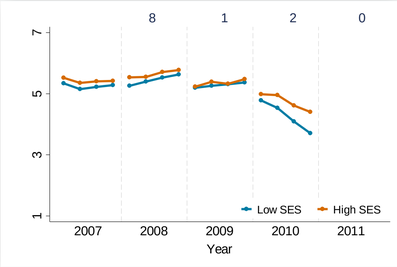
Dropped out in grade 8



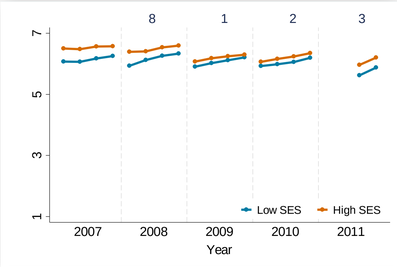
Dropped out in the 1st year of HS



Dropped out in the 2nd year of HS



Didn't drop out

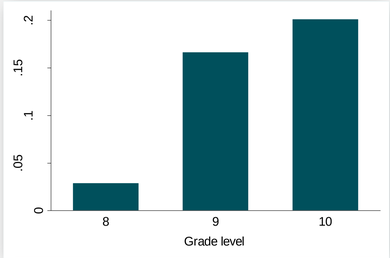


Note: the numbers on top of each plot represents grade levels (grade 8, 1st, 2nd, and 3rd year of high school) or dropout ("zero"). In 2007 students may be in grade 7, 8 or out of school. In 2011, only data for the last two quarters are available.

- School grade drops drastically over the year prior to dropout.
- The difference in school grade between lower and higher SES students decreases in high school.

Primary and secondary effects by grade level

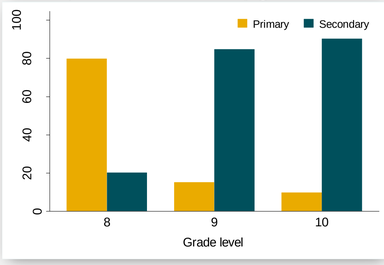
The relationship between social background and dropout strengthens over time.



Note: the y-axis shows the regression coefficient of social background on dropout.

Primary and secondary effects of SES on dropout changes over time.

Decomposition of effects by grade level (%)



Conclusions

- Previous studies might have underestimated the magnitude of primary effects by using a single measure of academic performance.
- Multiple measures of academic performance were found to be relevant to estimate primary effects: school grade, relative school grade, students' perception of their ability.
- The relationship between social background and dropout strengthens over time.
- Socioeconomic inequalities in dropout at the end of middle school are more associated with differences in performance among SES groups.
- During high school, these inequalities seem to be explained by secondary factors (e.g. costs and earning forgone of pursuing further education).

Acknowledgements:

I thank the Center for Innovative Design and Evaluation of Anti-Poverty Solutions (C-IDEAS / FEA - USP), in particular prof. Ricardo Madeira, for kindly sharing the data used in this study.

I also thank profs. Michelle Jackson and Martin Carnoy for their valuable feedback, and the Lemann Center for the financial support.