

Opportunities and Entrepreneurship: Evidence on Advanced Labor Market Experience

Matthew Pecenco
Carlos Schmidt-Padilla
Hamilton Taveras

June 2, 2023

Introduction

Formal business creation plays a pivotal role in the economy:

- Introduces innovation, driving job growth (Haltiwanger et al., 2013)
- Big underground (informal) economy in developing countries → formal business growth is key focus for policymakers (La Porta and Shleifer, 2014)

Many interventions designed to foster the entrepreneurship:

- Microfinance (e.g., Banerjee et al., 2015), basic business training (Mckenzie and Woodruff, 2013), and advisory with hiring (Alfonsi et al. 2017)

Recent literature emphasizes the value of managerial job experience and targeting

- Both correlated with entrepreneurship (Liang et al., 2008)
- However, to date, a source of exogenous variation has been elusive

Research questions

In this project, we provide answers to two questions:

Question 1: *Does receiving a temporary managerial job increase business creation?*

Question 2: *How do we identify who is most likely to start firms as a result?*

- We specifically test whether individuals select into the program based on their propensity for business creation

Introduction

- We exploit a source of exogenous variation in management experience (a lottery) and study whether:
 - It promotes formal business creation
 - It supports the creation of future jobs
 - It increases the future income of individuals, among other outcomes
- This source is an **atypical government procurement scheme** for construction:
 - Deployed in Dominican Republic since 2006
 - To be eligible: be licensed civil engineer (or architect), registered state provider, others.
- Using the universe of engineers, we examine **how selection to the lottery drives the likelihood of future entrepreneurship** (uncovering each individual preferences).

Today

Introduction

Context and data

Sorteo de obras

Administrative + survey data

Descriptive statistics

Reduced-form effects

Lottery-based design

Heterogeneous effects

Selection effects

Conclusion

Today

Introduction

Context and data

Sorteo de obras

Administrative + survey data

Descriptive statistics

Reduced-form effects

Lottery-based design

Heterogeneous effects

Selection effects

Conclusion

A lottery event (Sorteo de Obras)

A single sorteo process (a lottery event) can allocate from one to hundreds of offered contracts.

- These contracts are split into mutually exclusive groups or blocks (a province). Within the block, typically there are multiple contracts offered.
- Individuals may choose one of these blocks (selection).
- Within the lottery event-block group, randomly selected winners receive only one contract (same probability for everyone). The contract value is also random.
- Winners will receive blueprints from the contracting agency and they can only enter again to the sorteo just after receiving the final payment (contract accomplishment).

The moment of truth



Source: Ministry of Education, DR

A lucky winner



Source: Ministry of Education, DR

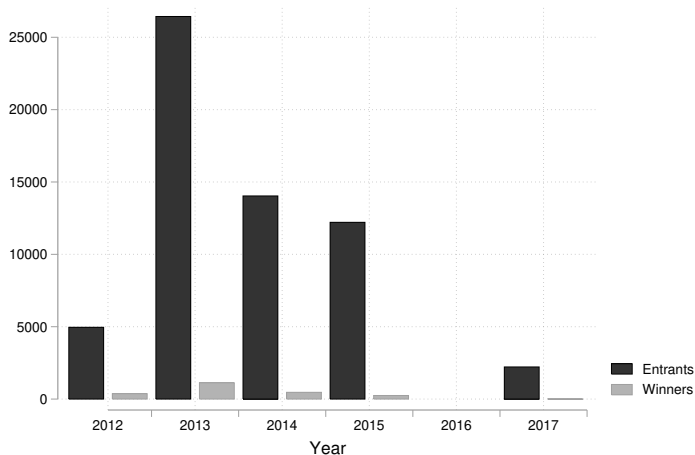
Administrative + survey data

We gather the following data:

1. Public procurement data, 2007-2018
 - Basic information on all public contracts
 - Entrants + winners for the *sorteos*
2. Firm ownership and Tax authority records, 2007-2018
3. Engineering certification records (Universe)
4. 2019 survey → measure mechanisms
5. Other administrative records

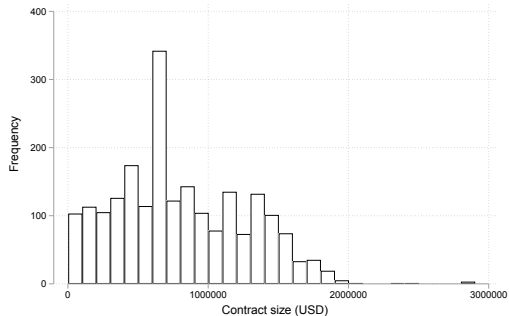
Distribution of entrants and winners per lottery event

- On average for each lottery event, there are almost 22 entrants per winner.
- Our analysis is made with the 2012 and 2013 events. We follow entrants and winners 5 years after the lottery event.

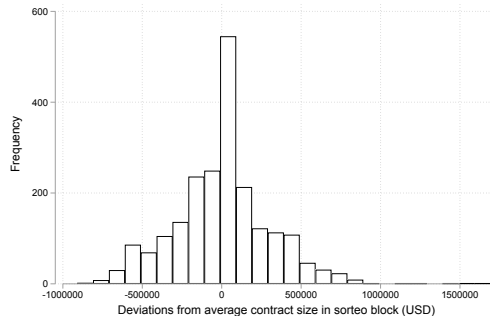


Contract value

(a) Unadjusted contract value



(b) Deviations within lottery event-block



Today

Introduction

Context and data

Sorteo de obras

Administrative + survey data

Descriptive statistics

Reduced-form effects

Lottery-based design

Heterogeneous effects

Selection effects

Conclusion

Effects of lottery winning

We leverage the random allocation of government contracts and estimate:

$$y_{iebt} = \beta \mathbb{1}[\text{winner}]_{ieb} + \gamma_{eb} + \varepsilon_{iebt}$$

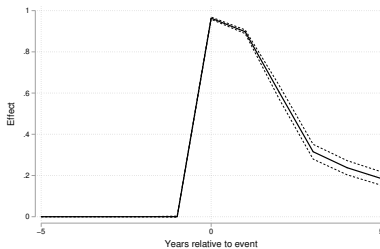
for individual i , event e , block b , time period t .

Considerations:

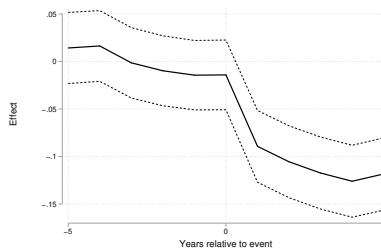
- Time periods t relative to lottery event
- Estimates are intent-to-treat (ITT)
- Most commonly, individuals are working prior (salaried employees)
- Winners and Non-Winners are similar on observable characteristics.

Individual effects

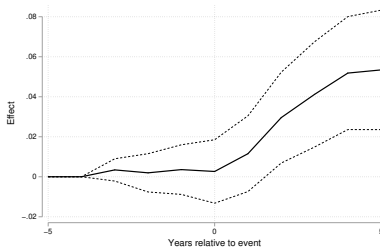
Open contract



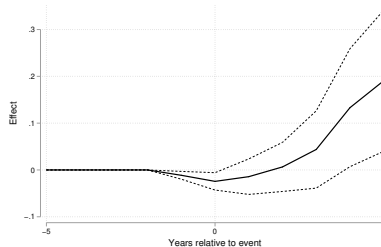
Wage employment



Number of firms owned



Owned firm employees



Additional results and mechanisms

Also:

- On average winners are 8 pp more likely to create a business than Non-winners.
- People see large increases to income (non-differential after 5 years) [Table](#)
- Have managed more temporary employees and subcontractors [Table](#)
- Firms created by lottery winners are more likely to hire, survived compared to non-winner firms [Table](#)

Try to disentangle managerial experience effects on business creation from other drivers:

- Randomly assigning more income (via contract size) → no effect on entrepreneurship. Young, not capital-constrained individual.
- Around 60 % declared winning the sorteo provided valuable work experience.
- No evidence, start firms to reduce liability on randomized contract, access more government contracts [Table](#), co-owner connections [Table](#) [In block](#)

Contract size

	Entrepreneurship (2018)			Income (Cum.)	Management
	(1) Owner	(2) Firm income	(3) Firm size	(4) Indiv. net	(5) Days in contract
Winner	0.099*** (0.038)	7189.8** (3414.3)	0.38*** (0.14)	-1932.9 (8073.9)	1068.4*** (47.6)
Winner * Size (\$200k)	-0.0065 (0.010)	-930.4 (830.3)	-0.067** (0.030)	11002.6*** (2672.1)	5.14 (12.6)
Control Mean	0.35	7223.98	0.39	65368.54	0.00
N	16855	16855	16855	16855	16855

Sample is individuals. We assign contract size as 0 for control individuals and do not control for contract size. Controls include lottery event-block fixed effects. Standard errors clustered at the individual level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Age is the main heterogeneous variable

	Control Mean	Separate Interactions	Joint Interactions
Age	42.84	-0.006*** (0.001)	-0.007*** (0.001)
Female	0.28	0.022 (0.040)	0.001 (0.040)
Ln income, t-1	10.62	-0.003 (0.003)	0.001 (0.004)
Formal employed, t-1	0.55	-0.040 (0.034)	-0.064 (0.040)
From capital	0.45	-0.033 (0.035)	0.002 (0.036)
N			16418

Column (2) are coefficients of the interaction terms *Winner * Variable* estimated in separate regressions. Column (3) are the same interaction terms estimated jointly. Controls in all regressions include the full set of interacted variables and lottery event-block fixed effects. Standard errors clustered at the individual level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Today

Introduction

Context and data

Sorteo de obras

Administrative + survey data

Descriptive statistics

Reduced-form effects

Lottery-based design

Heterogeneous effects

Selection effects

Conclusion

Generalizing treatment effects

We have seen business creation effects for a particular set of entrants

Two additional questions:

- Do individuals select in based on their relative likelihood to start businesses?
Motivation
- Are the age-based results a function of differential selection across age groups?
Motivation

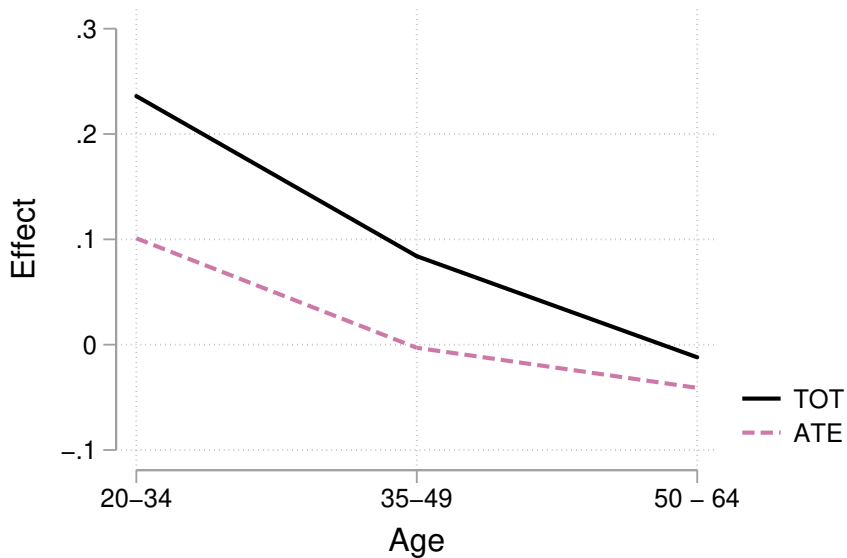
Need preferences and treatment effects along the distribution of preferences

- Not common on experiments, there are multiple choices (events-block) engineers could participate (selection).
- Estimate a selection model using a two-step control function approach.

Model estimates

	Became owner	
	(1) Non-winners	(2) Winner effect
Constant	.29*** (.004)	.06 (.041)
Age	-.0073*** (.0018)	-.022*** (.0078)
Age Sq.	.000031 (.00002)	.00016* (.000084)
Female	-.078*** (.0097)	.05 (.044)
Employed	.055*** (.0071)	-.053 (.035)
Income (10K USD)	.0054*** (.00097)	-.00032 (.0036)
Prev. owner	.16*** (.013)	-.075 (.064)
θ^*	.0086*** (.0017)	.024* (.014)

Distributional effects by age



Today

Introduction

Context and data

Sorteo de obras

Administrative + survey data

Descriptive statistics

Reduced-form effects

Lottery-based design

Heterogeneous effects

Selection effects

Conclusion

Conclusion

Find large increase in entrepreneurship:

- Individuals create new, better firms (important for developing countries)
- Results are more consistent with increasing experience

Results suggest a potential market failure in the provision of managerial jobs:

- Many programs focus on low-skill employment, worth thinking about greater skill accumulation

Targeting in entrepreneurship programs can be important:

- Find effects are driven by the young and individuals with (unobservably) high desire.

Thank you!