

Foreign Direct Investment & Major Choice

Evidence from Costa Rica

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WEAI ASHE Session

Motivation

- Economic growth is pushed forward by the accumulation of physical and **human capital** (Romer, 1990; Caballé and Santos, 1993; Barro, 1996, 2003)
- Developing economies have increasingly attracted more FDI in recent years 
- Evidence on how trade and educational attainment levels interact (Atkin, 2016; Blanchard and Olney, 2017)

This Project

Does the Presence of Multinational Corporations Influence Major Choice?

- Leverage industry-district-year variation in MNC presence to look at field-of-study choice effects for individuals

Empirical Strategy

- Create Gravity Model-inspired MNC Presence Index at industry-district-year level
- Group individual majors creating broad field-of-study categories
- Look at within field-of-study choices for more detailed analysis

Results Preview

- Heterogeneity in effects across industry and field-of-study
- Service industries are more relevant in the field-of-study choice
- Look at more narrow categories suggests sorting based on likely transferable skills

Contribution

- Contributes to literature on determinants of college major choice
 - Wages ([Carneiro et al., 2011](#); [Arcidiacono et al., 2012, 2020](#); [Beffy et al., 2012](#); [Carroll et al., 2014](#); [Kirkeboen et al., 2016](#); [Bleemer and Mehta, 2022](#))
 - Non-pecuniary ([Altonji, 1993](#))
 - Ability and Preference Sorting ([Arcidiacono, 2004](#); [Kinsler and Pavan, 2015](#))
 - Information Availability ([Jensen, 2010](#); [Kaufmann, 2014](#))
- Literature on larger trade/FDI effects: ([Feenstra and Hanson, 1997](#); [Atkin, 2016](#); [Blanchard and Willmann, 2016](#); [Alfaro-Ureña et al., 2021](#))

Context

- Public universities require applicants to list their 2 preferred majors when applying
 1. Helps construct a demand for major, rather than observing equilibrium enrollment outcomes
 2. Applicants submit relevant demographic information
- Costa Rica provides incentives for FDI inflows through their Free Trade Zone (FTZ) regime [▶ Graph](#)
 1. Firms are located inside an FTZ dedicated industrial park
 2. The FTZ regime has become a significant portion of all FDI entering Costa Rica (>60% of all FDI \$'s in the last 5 years) [▶ Graph](#)

Data

- Administrative university application data from 2007 to 2020
 - Preferred Major Choice
 - Age and Sex
 - Entry Score
 - High School Type
 - District-Canton of Residence
- Firm-level data from Costa Rica Foreign Trade Promoter
 - 68 unique ISIC4 4-digit Economic Activity Codes
 - 348 firms
 - Year-of-Entry
 - District-Canton of Operation
- 379,316 observations from 2007 to 2020[†]

MNC Presence Index

Using a Gravity Model approach, I construct a district-year MNC Presence Index as follows:

$$\Gamma_{djt} = \sum_{d'} \frac{S_{d'jt}}{\exp(\tau_{dd'})} \quad (1)$$

Subscripts

d = applicant district, d' = firm district, j = industry, t = year

- $S_{d'jt}$: Stock of firms in district d' of industry j in year t
- $\exp(\tau_{dd'})$: Distance (in km) between district d (applicant residence) to district d' (firm residence)