

## Motivation

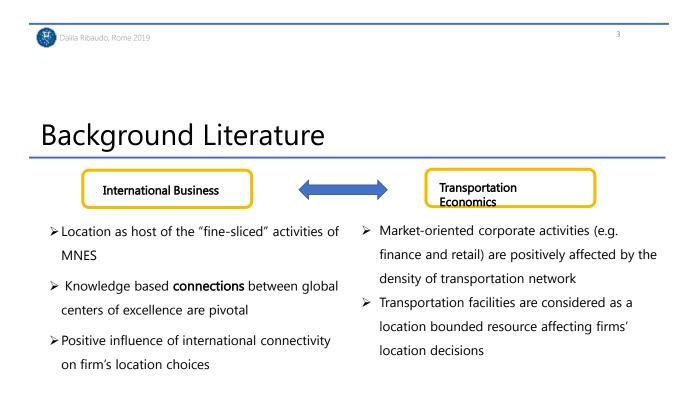
- > Transportation infrastructures make cities and regions closer, allowing firms to face lower transport costs, better access to local market and potentially higher levels of **connectivity**  $\rightarrow$ 
  - > "Intensity with which people, goods, capital, and knowledge flow across space" (Belderbos, 2018:11)
- > Firm location patterns are driven by multiple factors, including changes in accessibility brought about by transportation infrastructures
- > Scarce evidence on the influence of accessibility on location decisions of MNEs engaged in manufacturing and R&D activities at the city level
- > IB literature shows the positive impact of international connectivity in firm's location choices, though there is scarce empirical evidence on how urban mobility affects those choices

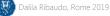


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## Aim of this paper

- Disentangle MNEs' location choices in cities focusing on transportation infrastructures facilities as location's drivers.
- > Get a better grip on the investment's location in a between-cities perspective
- Evaluate how different functions of the value chain, i.e. Manufacturing, Logistics and R&D respond to different degrees of accessibility, allowed by the quality and extension of hard infrastructures





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### Data

**FDi Markets**  $\rightarrow$  commercial online database provided by the Financial Times and contains information on cross border investments.

For each project, FDi Markets reports information on the industry and main business activity involved in the project, the location where the investment takes place (host country, regions and cities), as well as the name and location of the investing company (home).

**Urban Mobility Tools UT-DAT (World Bank)**  $\rightarrow$  city – level dataset which contains information on city's mobility characteristics for 92 cities in 2011

#### Resulting database →

- > 7. 947 International Investments Projects from 2012 -2015
- ➤ 70 cities
- > 4.701 MNEs

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### Cities





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## Cities

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# Methodology

Estimated Model → Conditional Logit Model (McFadden, 1974)

- > Dependent Variable  $\rightarrow$  binary variable with value 1 if a given project *i* made by the firm *f* at time *t* is located in the city *j*, 0 otherwise.
- ➤A vector of covariates X including connectivity factors both within and between cities and other controls
- Tested for the aggregate sample and for distinct functions of the value chain (Manufacturing, R&D, logistics).



### Variables

#### Main Explanatory Variables → city level mobility characteristics, UT-DAT

#### Getting Around (Intra connectivity) →

- > Average Time to Work (all modes; Redding & Turner, 2014)
- Average trip by car (km)
- > Total Number of Public Transport Vehicles excluding trains and regional railways

#### Getting There (Inter Connectivity) →

- > Presence of a Port Dummy 0,1 (both sea and river ports; Kawamura, 2001, 2018; Chin et al., 2005)
- > Total Number of Public Mass Transit Vechicles including trains and regional railways

#### Moderating Factors →

- > Daily Boardings in Public Transport, both within city and across cities
- Road Density (KM)
- Population Density
- Public Transport Energy Use in MJ/Pax KM)

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### Results

	Manufacturing	Logistics	Research & Development	
Getting Around (Intra Connectivity)				
Average time of journey to work (minutes)	-0.00921***	-0.0100*	-0.0109***	
Average trip length by car (km)	-0.0659***	-0.0277***	-0.0228***	
Log Tot. Number of PT Vehicles - Excluding Railways	0.210***	0.108**	0.451***	
Getting There (Inter Connectivity)				
Presence of a Port - Dummy 0,1	0.697***	0.312***	0.422***	
Log Tot. Number of PT Mass Transit Vehicles - Including Regional Railway	0.160***	0.132***	0.0483***	
Control Variables				
Log Road Length Density	-0.363***	-0.219***	-0.470***	
Log Daily Tot Million Boardings in Public Transport	0.0533	0.223*	0.403***	
Log Daily Tot Million Boardings in Mass Transit	-0.0433**	-0.0148	-0.0740***	
Log Population Density (KM)	-0.0970*	-0.0979	0.0601	
Public Transport Energy Use (MJ/ Pax km)	-0.645***	-0.542***	-1.279***	
Log City Area (KM2)	0.223***	0.0626	0.211***	
Minimum Hourly Wage rate (PPP \$ 2007)	-0.143***	0.00823	0.152***	
Log of Stock Inward FDI 2003-2011				
Observations	142,756	48,576	114,980	

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## Conclusion

- Preliminary findings reveal that the external (inter-city) accessibility of a city is positively associated with the location of MNE activities. At the same time, the extension and effectiveness of the urban mobility system (intra-city transport infrastructure) also affects the attractiveness of a city to MNEs, especially for those engaged in R&D activities. Lower time to work journeys and a capillary public transport network makes a city more attractive, while longer average trip by car within cities dampen their attractiveness.
- Also, the preliminary findings show that MNEs engaged in distinct function of the value chain may exploit different mobility facilities. While Logistics is more attracted by interconnectivity measure (getting there), R&D activities enjoy higher level of intra connectivity.

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## Steps ahead

- However in order to deepen our current understanding and to strengthen the empirical analysis we will further control:
  - > city dummy for cities where the port is considered as a urban mobility mean
  - Industrial sector, since the location may be driven by the specialization degree of a certain place, e.g. Palo Alto as a global center of excellence
  - > Control for maintenance costs to avoid overestimation
  - Cope with unobserved heterogeneity and implement a random coefficient model to identify and explore firm heterogeneous effects.
  - > Estimate the magnitude with which each kind of connectivity attracts FDI

## Thank you for the attention!

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