

## WHAT MARKET FORCES DRIVE ITALIAN PROFESSORS TODAY?

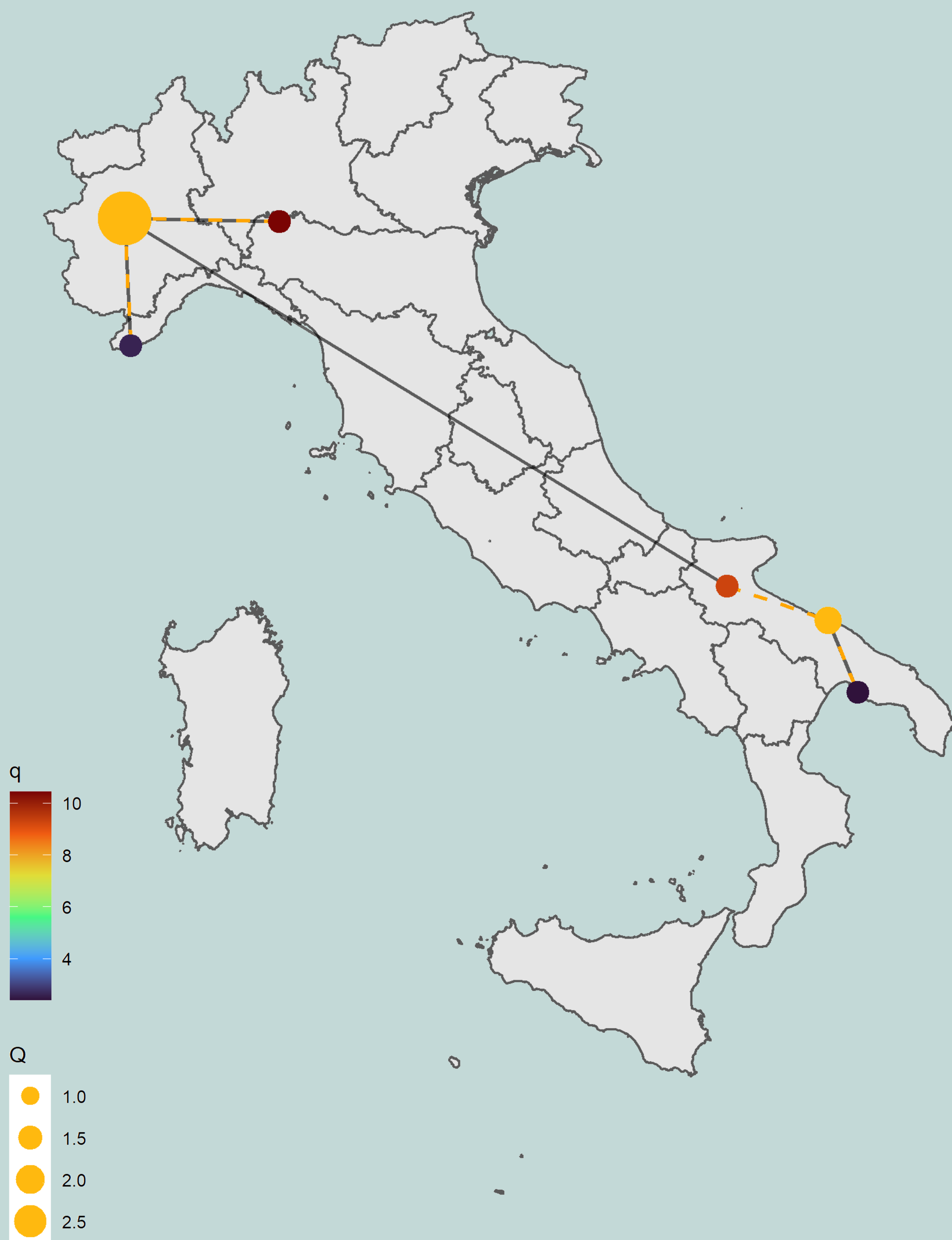
- ▶ GRAVITY → how far do professors travel to reach a university?
- ▶ AGGLOMERATION → are professors attracted to higher quality universities?
- ▶ SELECTION → do better professors travel longer distances?
- ▶ SORTING → do better professors value more the quality of universities?

## MARKET FORCES IN ITALY: an example

Take as an example **Italy** with **two universities** (orange bubbles – the bigger the bubble, the better the university), and **four professors** (other bubbles – the more red the bubble, the better the professor).

$Q$  defines the quality of universities,  $q$  defines the quality of professors.

The *dashed orange lines* show in which university professors go when market forces are weak. *Solid black lines* show where professors go when market forces are strong.



The presence of **positive sorting** leads top scholars to work together with other high-quality professors. In turn, with strong **complementarity in skills**, this can create possible virtuous cycles, where more notable universities, with the best professors, attract more and more high-quality scholars (Kremer, 1993).

## DATA SAMPLING

- ▶ **Unique data set**
- ▶ Observations → RePEc lists of current Italian scholars in economics and related fields as of December 2020
  - ▶ **Location data:** birthplaces matched with geographical coordinates
    - ▶ birthplaces found in CVs, institutional/personal web pages, and direct emails
  - ▶ **Affiliation data:** matched with geographical coordinates
    - ▶ only “standard” affiliations: no telematic universities and no research centres
- ▶ Quality
  - ▶ **Notability  $Q$ :** Past indicator from RePEc ranking of December 2010
  - ▶ **Human Capital  $q$ :** Principal Component Analysis with eight bibliometric indicators (RePEc score, Worldcat works and library holdings, Google Scholar citations, H-index and i10-index, WoS H-index, Scopus H-index)

## FINDINGS

- ▶ **Standard Multinomial Logit Model** shows:
  - ▶ strong *gravity* effect
  - ▶ strong *agglomeration* effect, but driven by city wealth, not by universities’ quality
  - ▶ strong *positive selection* effect
  - ▶ weak *positive sorting* effect
- ▶ **Additional analyses:**
  - ▶ Gender analysis: no gender differences
  - ▶ Private & Public analysis: **nested logit model** shows that professors who have higher expected utility teaching in *private universities* have a higher average human capital (of 4.76) than those who prefer teaching in *public universities* (average human capital of 4.02).

## ROLE OF SORTING THROUGHOUT HISTORY

I compare today’s features of the Italian academic market with those of the past using a sample of professors who worked in Italy from 1348 to 1800.

Column (1) considers the time span from the Black Death to the rise of Protestantism, column (2) from Protestantism to the revocation of the Edict of Nantes, column (3) from this revocation to 1800, and column (4) involves present data (2020).

*Gravity* and *selection* effects are strongly present in every specification. The *sorting* effect is the most fluctuating across time. *Agglomeration* variables are not comparable between past and present times.

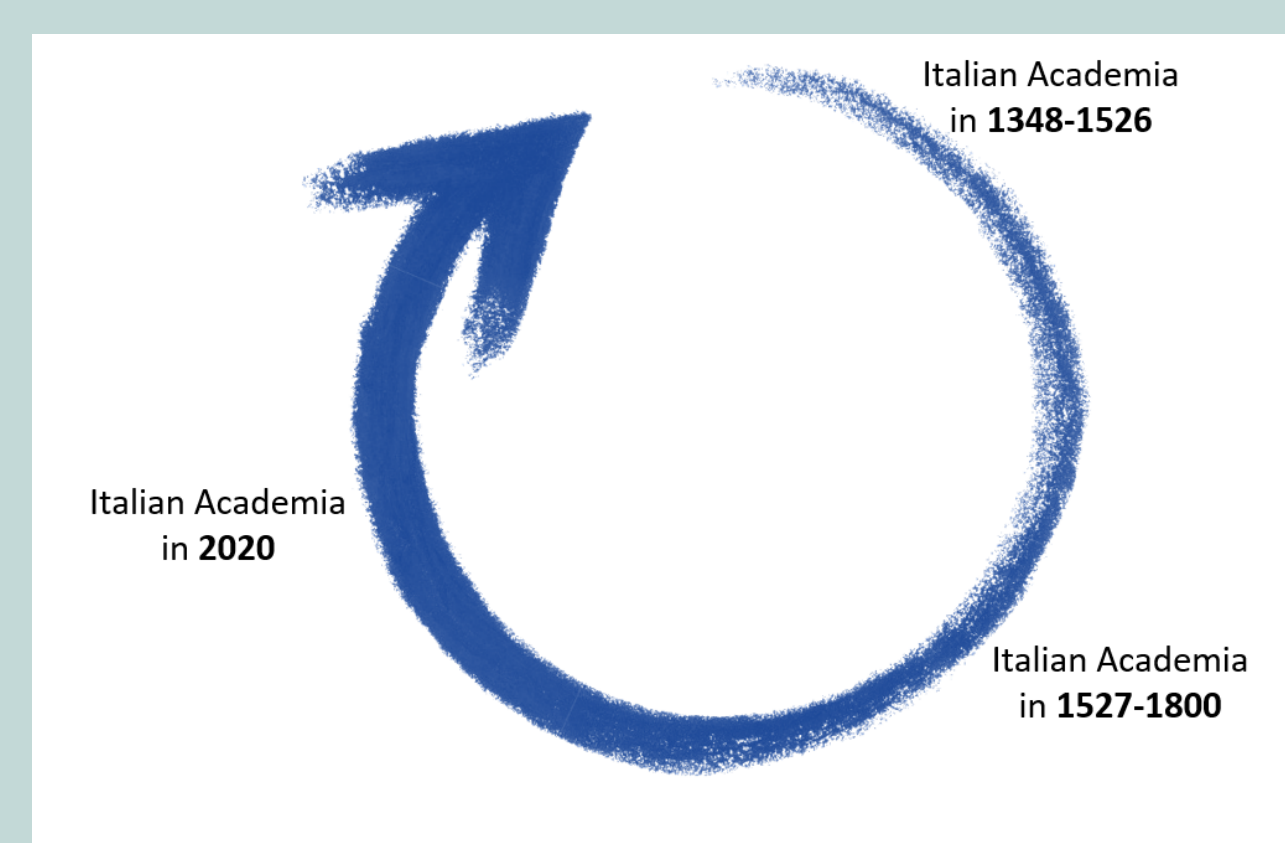
Standard Multinomial Logit Models in different time periods

	(1) (1348-1526)	(2) (1527-1685)	(3) (1686-1800)	(4) (PRESENT)
<b>Distance:</b>				
$\ln d$	-1.360*** (0.022)	-1.609*** (0.022)	-1.598*** (0.032)	-0.916*** (0.069)
<b>Selection:</b>				
$\ln q \ln d$	0.090*** (0.010)	0.097*** (0.009)	0.056*** (0.013)	0.043*** (0.013)
<b>Sorting:</b>				
$\ln q \ln Q$	0.014*** (0.005)	-0.0002 (0.004)	-0.010 (0.006)	0.032* (0.019)
Obs.	4472	4643	2314	815
R <sup>2</sup>	0.346	0.416	0.435	0.161

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## I. CONCLUSIONS – COMPARISON WITH THE PAST

- ▶ 1348 – 1526 Italian Academia with the strongest sorting effect
- ▶ 1527 – 1800 Italian Academia with no sorting effect
- ▶ 2020 Italian Academia with a weak sorting effect.



## II. CONCLUSIONS

- ▶ AGGLOMERATION today is driven by cities’ wealth → public policy has room for improving the attraction force of universities’ quality.
- ▶ POSITIVE SELECTION is a powerful force in the Italian academic market both today and yesterday.
- ▶ POSITIVE SORTING is weaker today than at the origins of Italian Academia → it is the most fluctuating market force, and it may reflect the position of the Italian Academia in the human capital accumulation cycle.