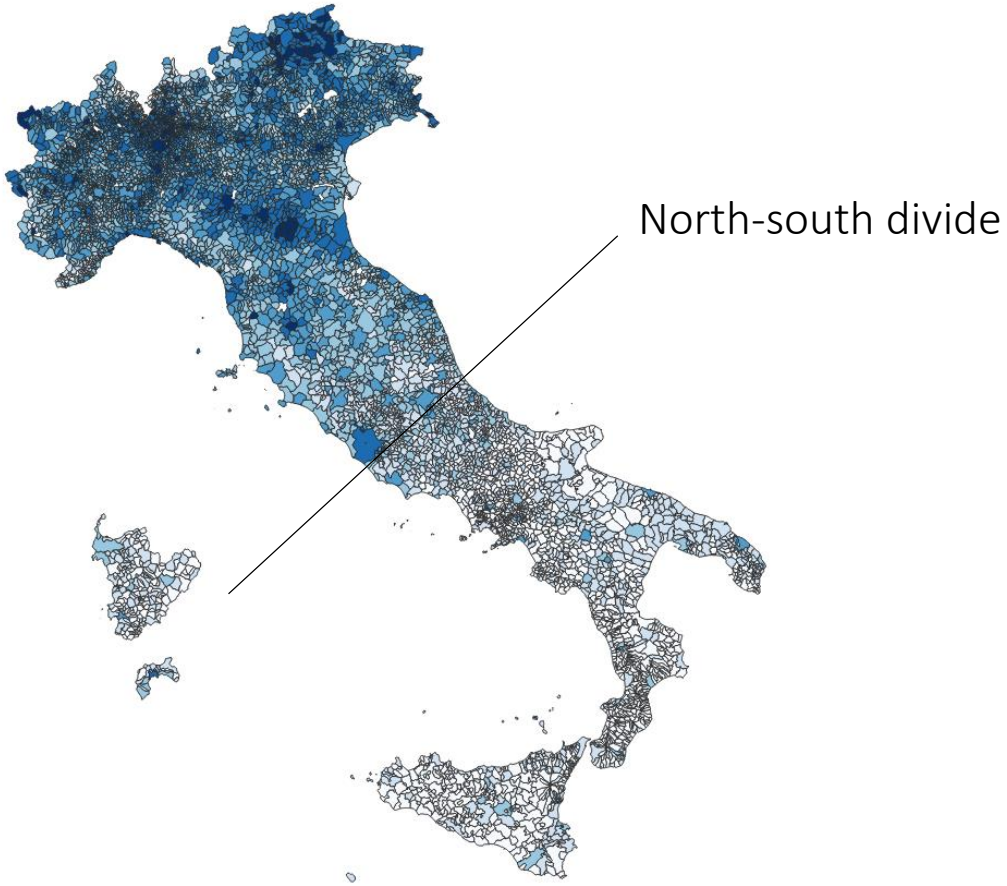
PRIN project 2022-2024

Economic development in Italy from the Middle Ages to today: A regional perspective

Presented by

Jacob Weisdorf

How deep are the roots of regional inequality?



Income per person by municipality today (2017)

PRIN: €680.000 to find answers – why?

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Traditional economic historians on going back beyond 1861:

- "We tried but we couldn't find any answers"
- "This will take several lifetimes to find out"
- "Don't open that door"
- "We will never know"
- "*No* answers are better than *wrong* answers"

New economic historians (*Cliometricians*):

- "*Wrong* answers are better than *no* answers"

Columbus: “Welcome to ~~India~~ America!”

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Traditional economic history mentality:

Columbus shouldn’t have gone!

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Traditional economic history mentality:

Columbus shouldn’t have gone!

New economic history mentality:

We learned from Columbus and now we are wiser

PRIN: €680.000 to find answers - what?

Our project turns to history for answers to *four* main questions:

1) How deeply rooted is regional income inequality in Italy?

2) What factors were important in inter-regional development?

3) Who were the regional winners and losers of Italy's unification?

4) What lessons can we take from history regarding Italy's future?

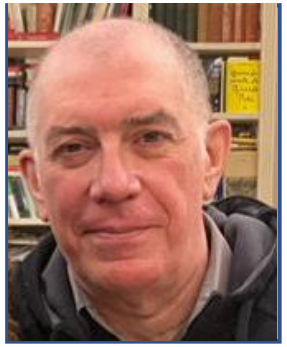
The four PRIN project units

UNI SAPIENZA (PI)

Michele Postigliano
(associate professor)

Mauro Rota
(full professor)

Donatella Strangio
(full professor)



Marco Teodori
(assistant professor)

Jacob Weisdorf - PI
(full professor)

NN
(Post doc)

NN
(Post doc)

UNI BOCCONI

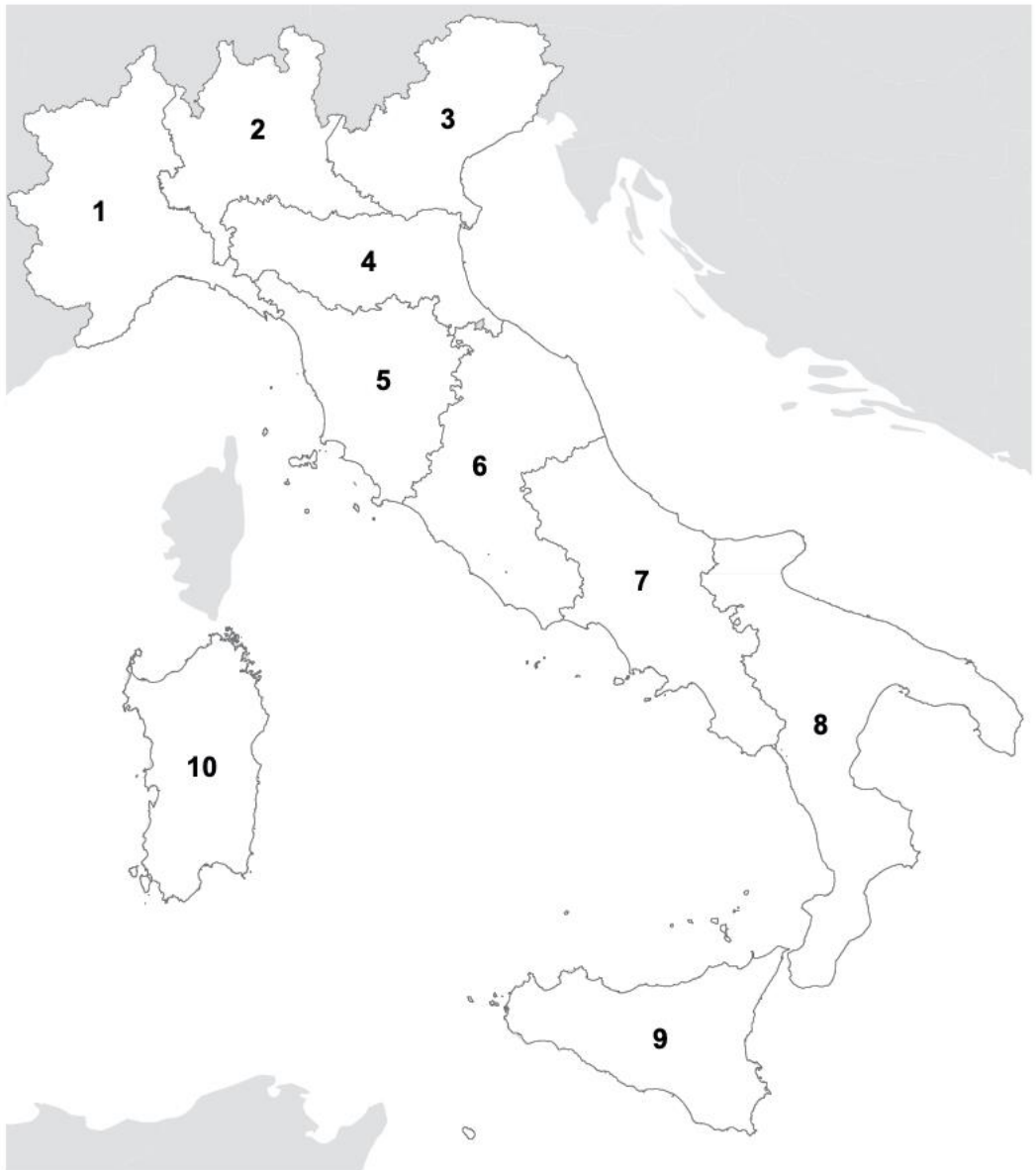
UNISI

SSSA

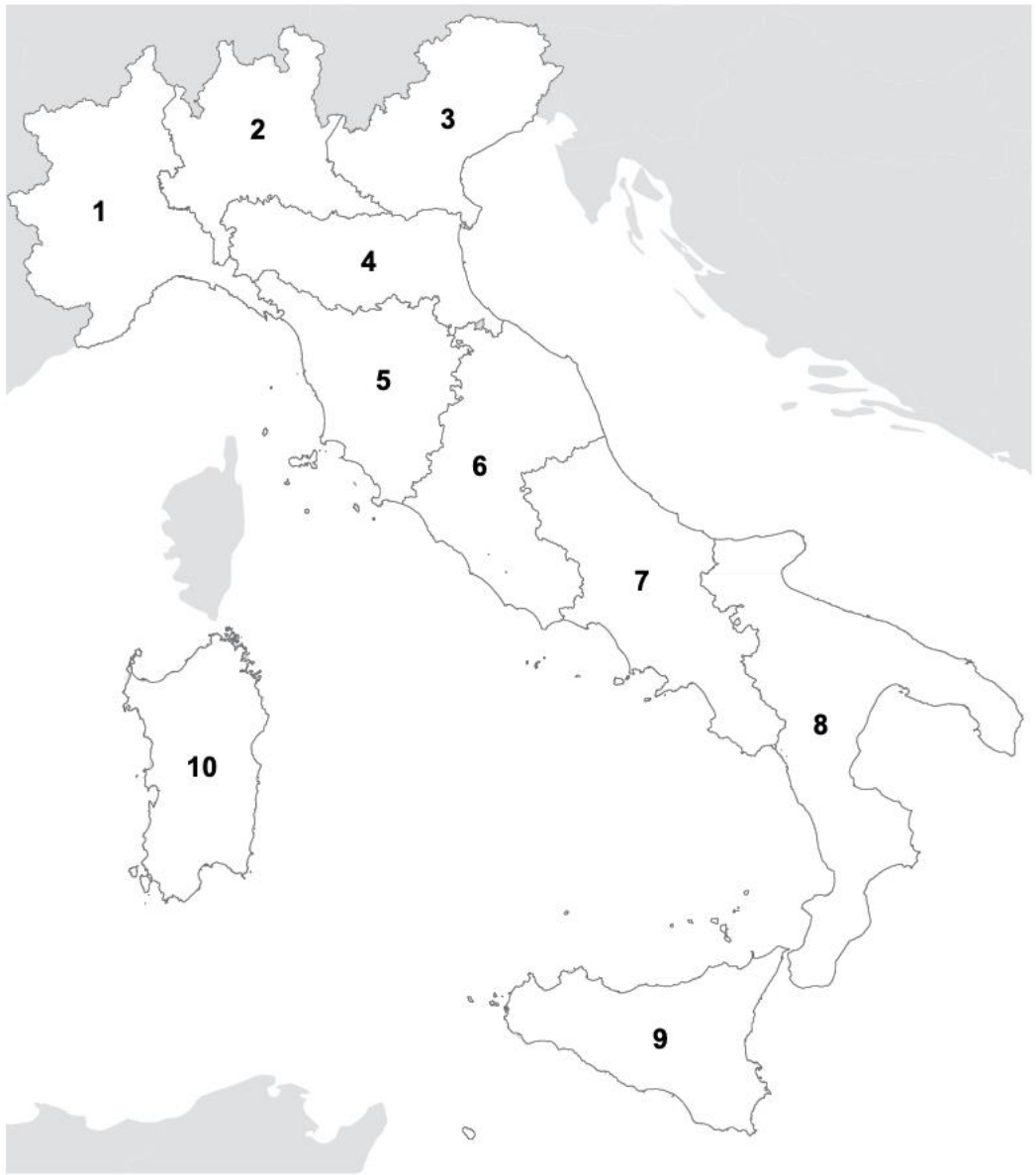
PRIN: €680.000 to find answers – how?

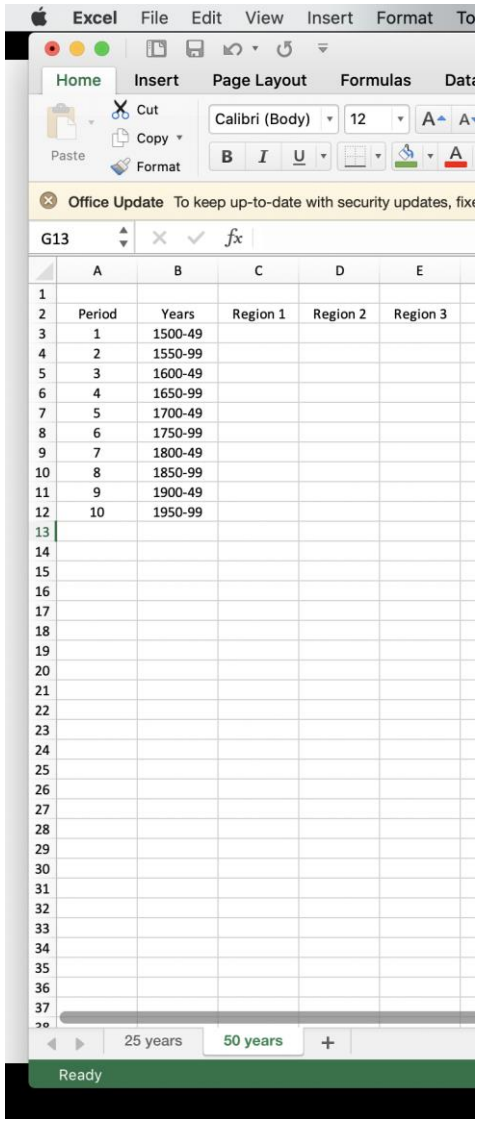
We plan to build a new database:

- Hope this can be done in three years (2022-24)
- First-ever historical database worldwide
- Period: 1500 to 2000
- Covering ten regions of Italy
- Main variables: the real wage of unskilled workers
- Growth fundamentals: geography, institutions, culture, and demography



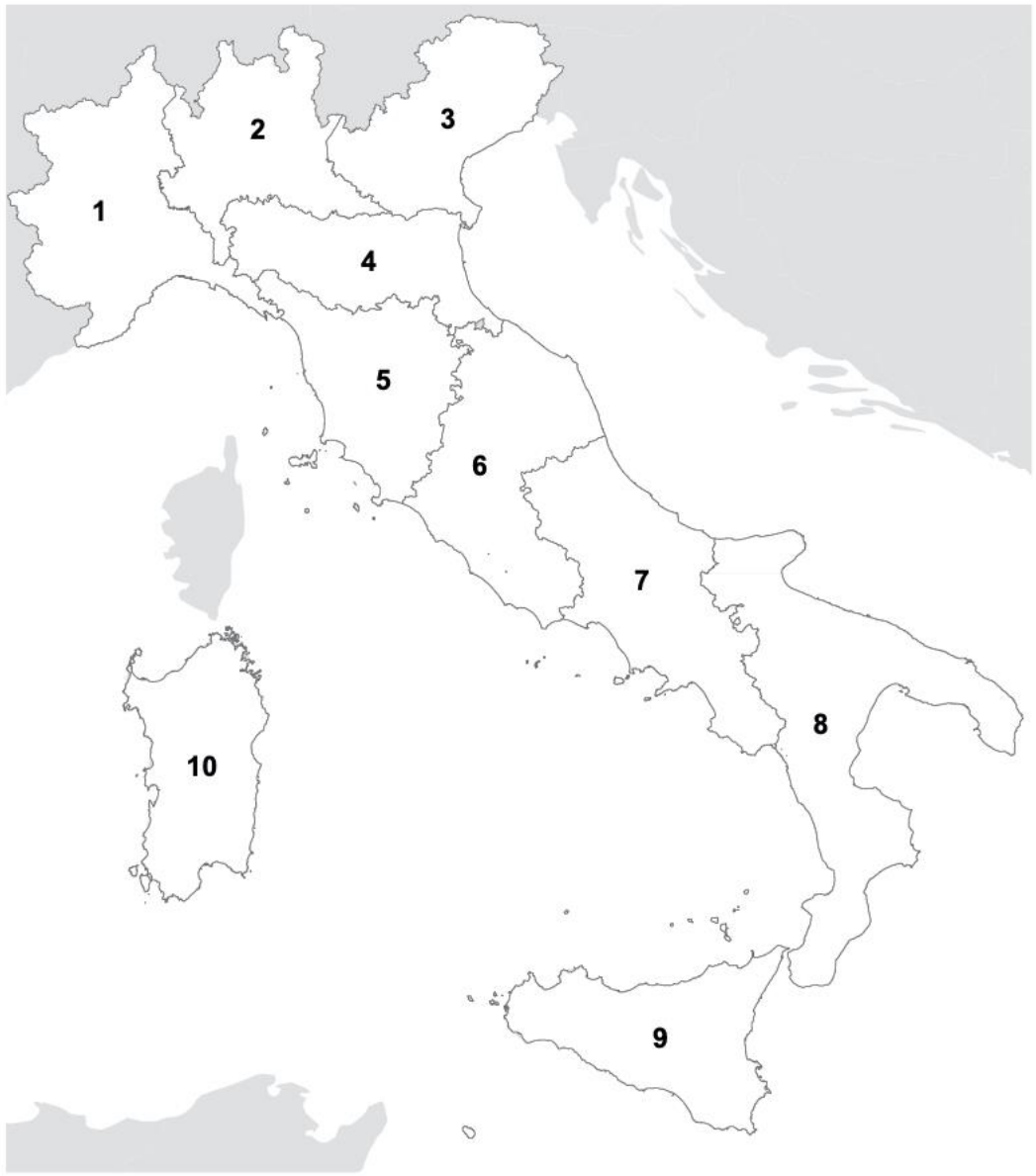
Panel structure:
10 regions

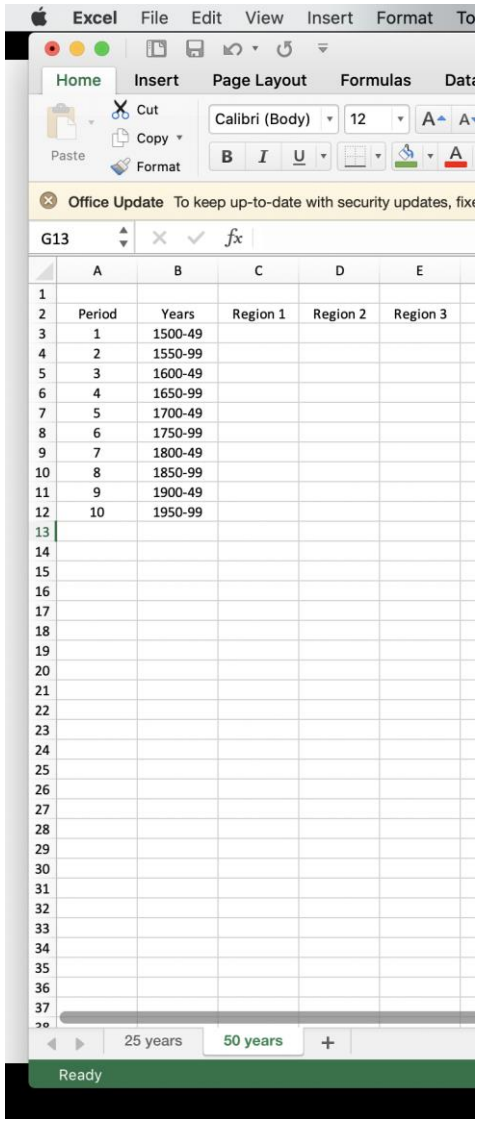




	A	B	C	D	E
1					
2	Period	Years	Region 1	Region 2	Region 3
3	1	1500-49			
4	2	1550-99			
5	3	1600-49			
6	4	1650-99			
7	5	1700-49			
8	6	1750-99			
9	7	1800-49			
10	8	1850-99			
11	9	1900-49			
12	10	1950-99			

Panel structure:
10 regions
10 time periods
= 100 observations
of each variables





Panel structure:

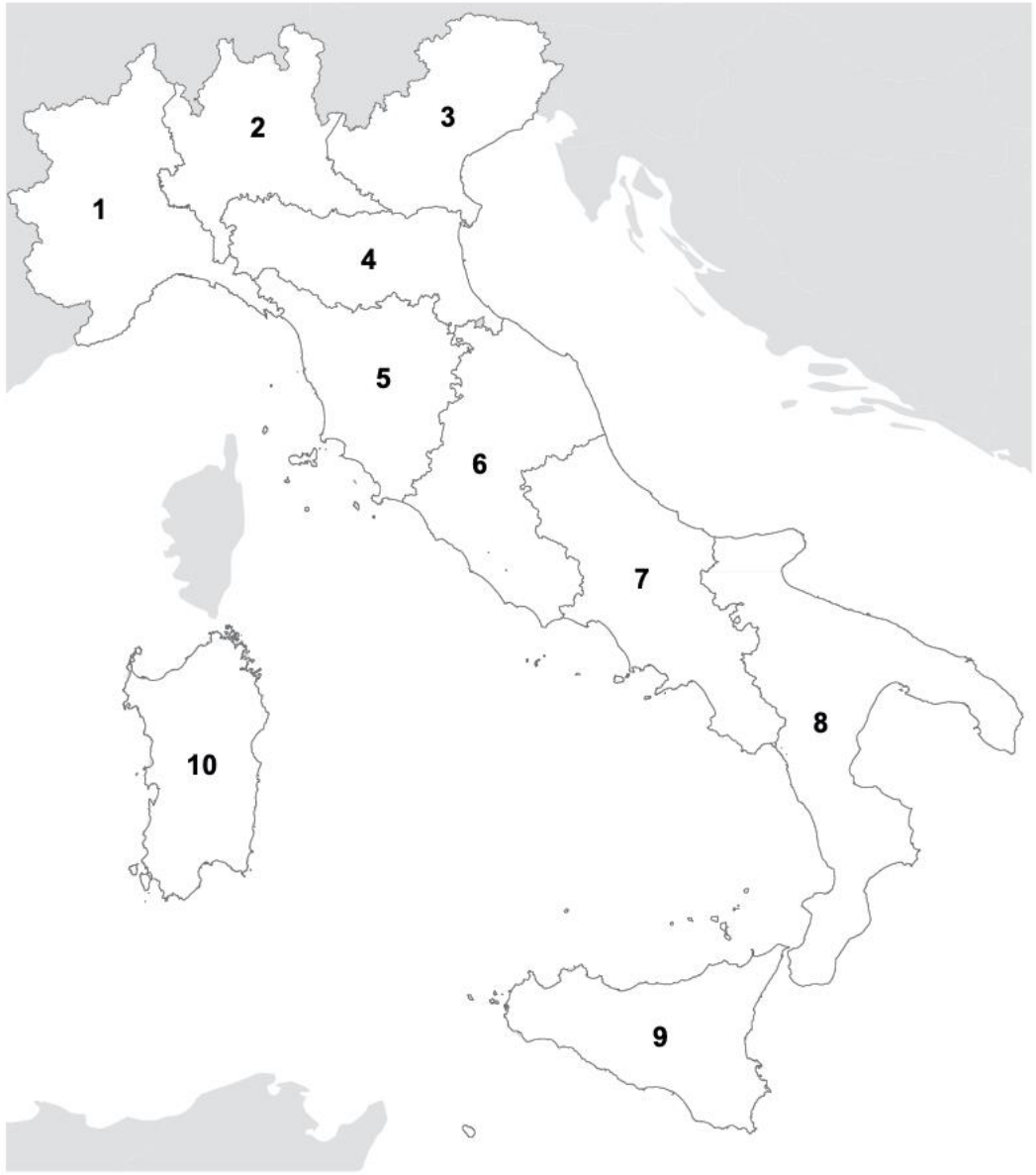
10 regions

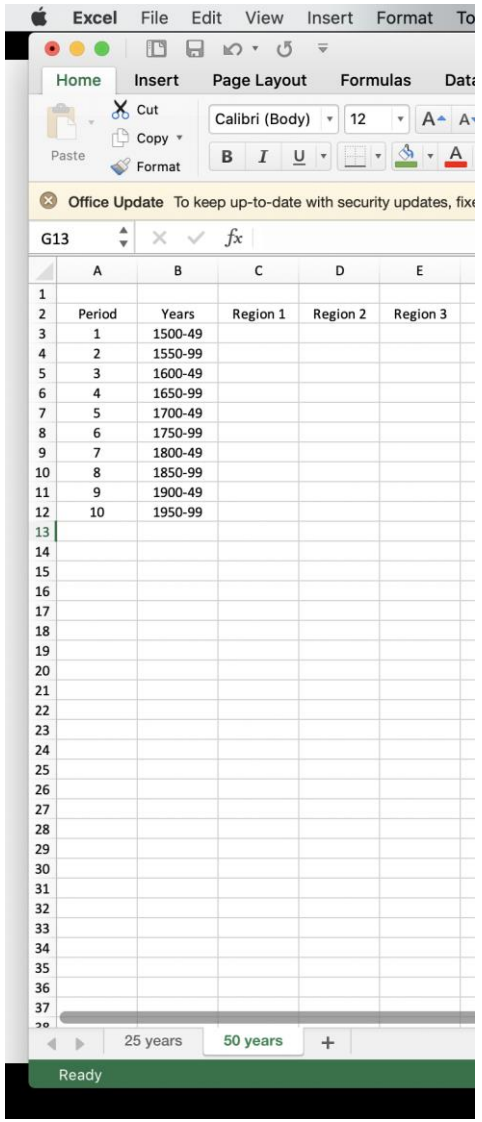
10 time periods

= 100 observations of each variables

Variables:

- Income data
- Geography
- Demography
- Institutional
- Culture





Panel structure:
10 regions
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= 100 observations
of each variables

Variables:

- Income data
- Geography
- Demography
- Institutional
- Culture

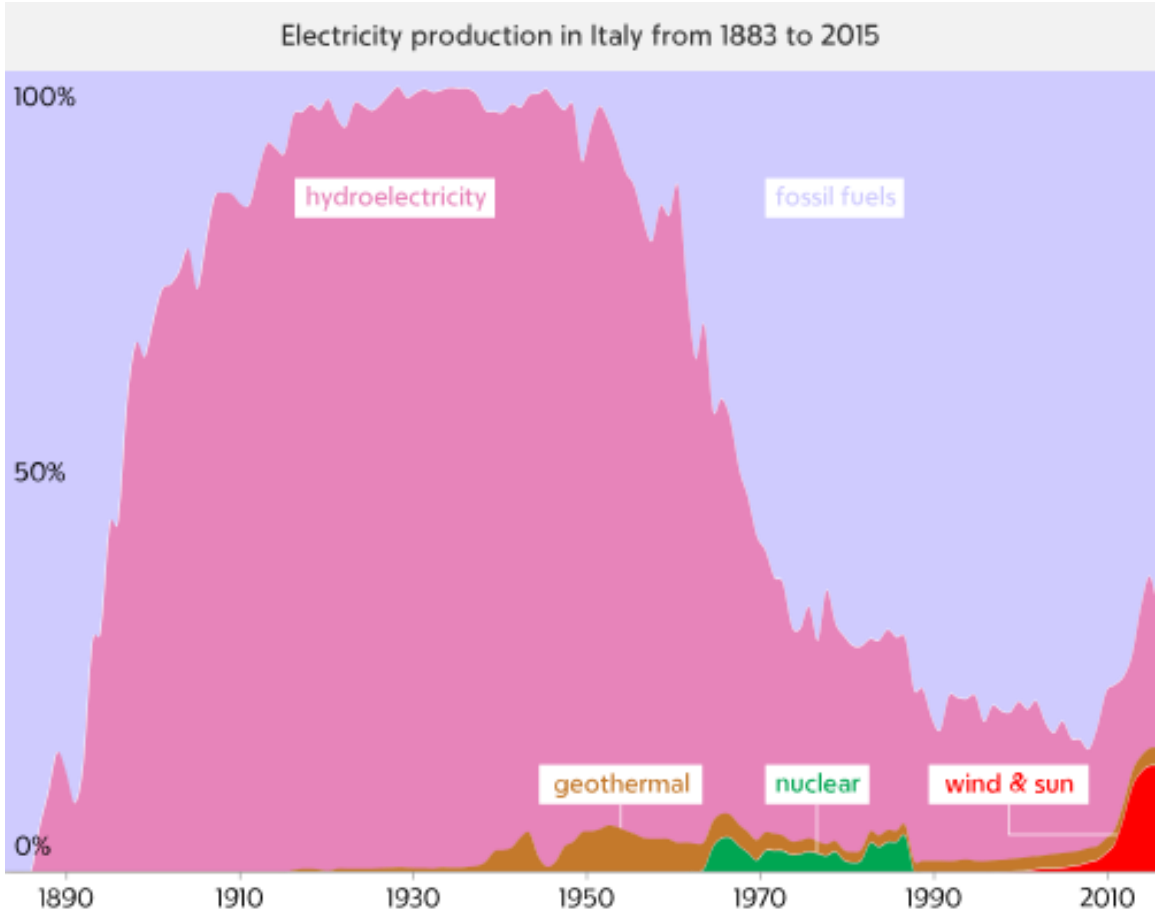
Examples:
Geography:
Hydro-electric potential

Example: Hydro-electric power potential

Industrialisation in Italy:

- England's industrialisation started c. 1750
- Steam-powered industry: cheap coal
- Italy had very few coalfields
- Coal expensive to import/transport
- Italy's industrialisation delayed
- Had to await electricity
- Emerged in the 1880s mainly from hydro power

Hydro-power hugely successful



Hypothesis: early hydro-location rich today

Locations with hydro-power plants potentially gained a head start:

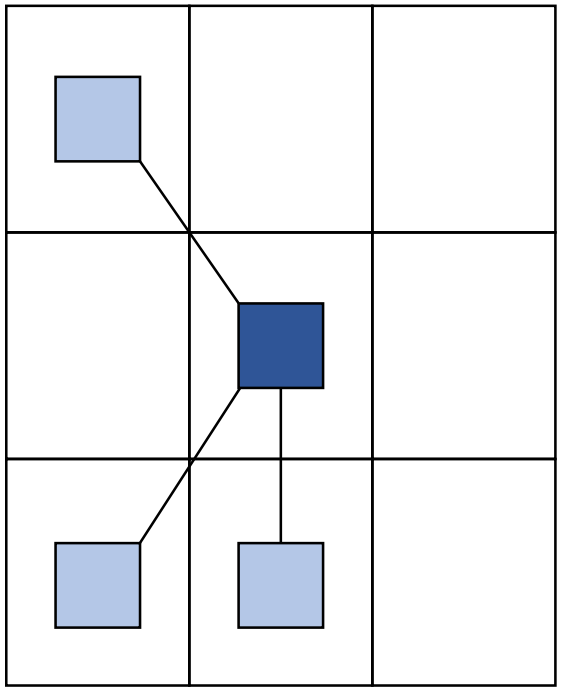
- First-mover advantage in industrialisation
- Non-hydro locations were set back relatively
- Setback areas began to catch up only after WW2
- Income gap between hydro and non-hydro areas still visible today

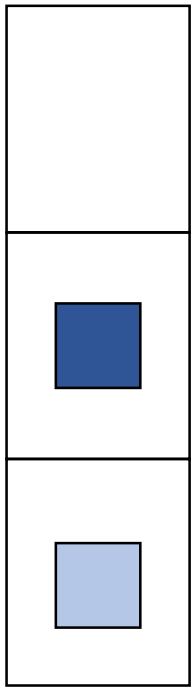
Data: early hydro-location rich today

Municipality-level analysis:

- Explained: income per person in 2017
- Explanatory: hydro plant prior to 1911 (yes/no)
- End before WW1: early start
- Alternative 1: Hydro plant buffer zone (30 km radius)
- Alternative 2: Electric generator (yes/no)
- Control: latitude or longitude

Illustration: Early electricity distribution



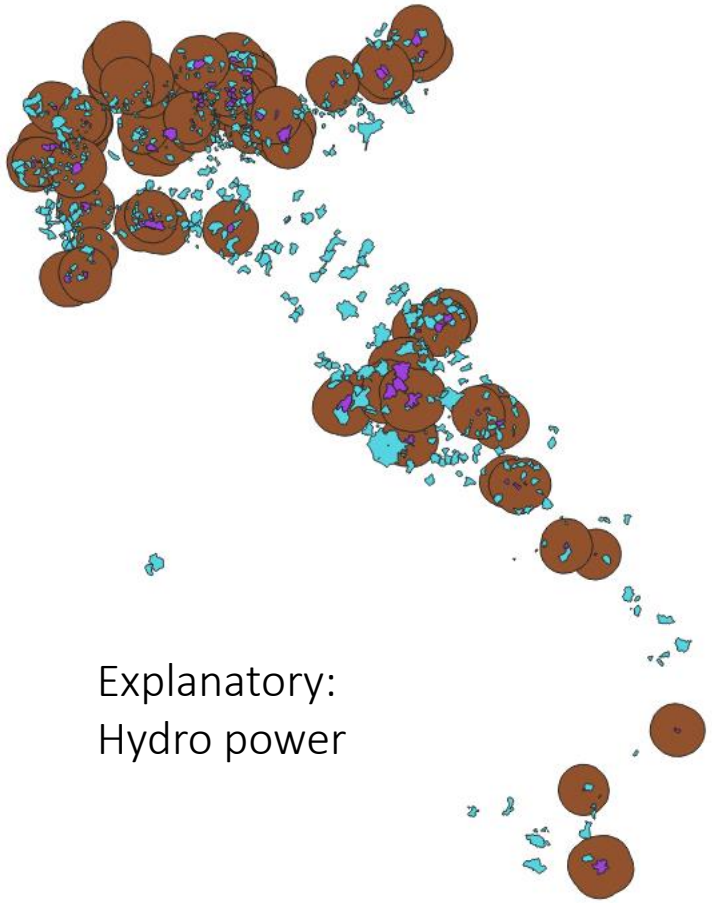


Municipality nearby power plant

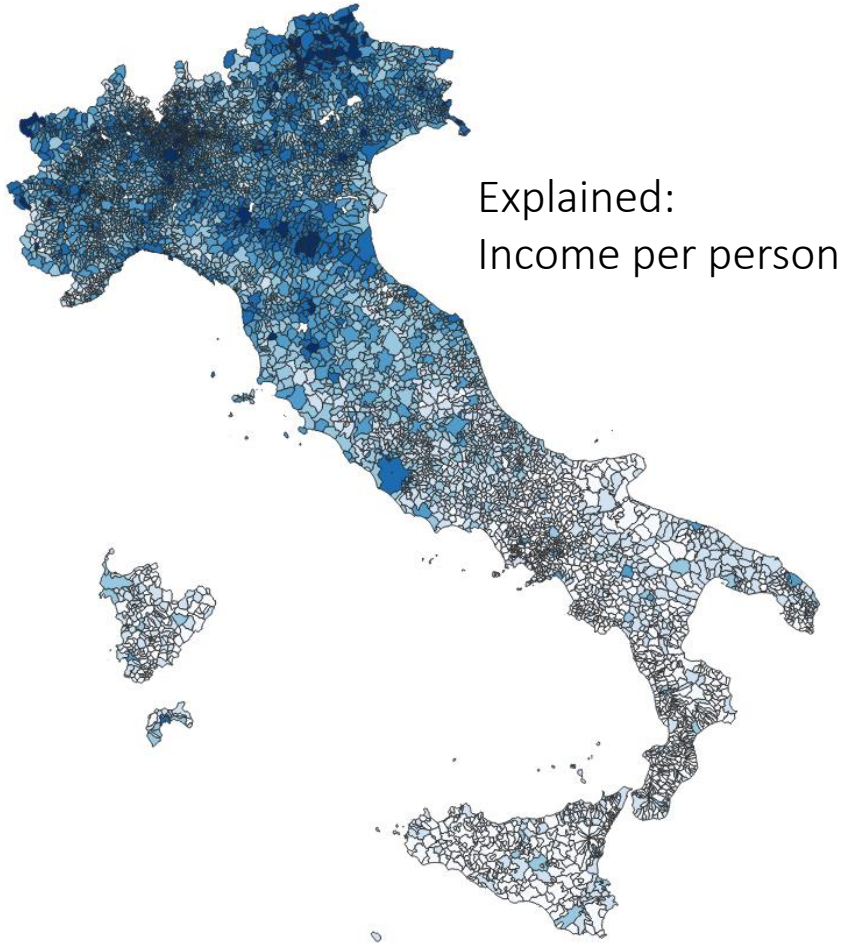
Municipality with power plant

Municipality with electric generator

Hydro, nearby (30 km), and generators

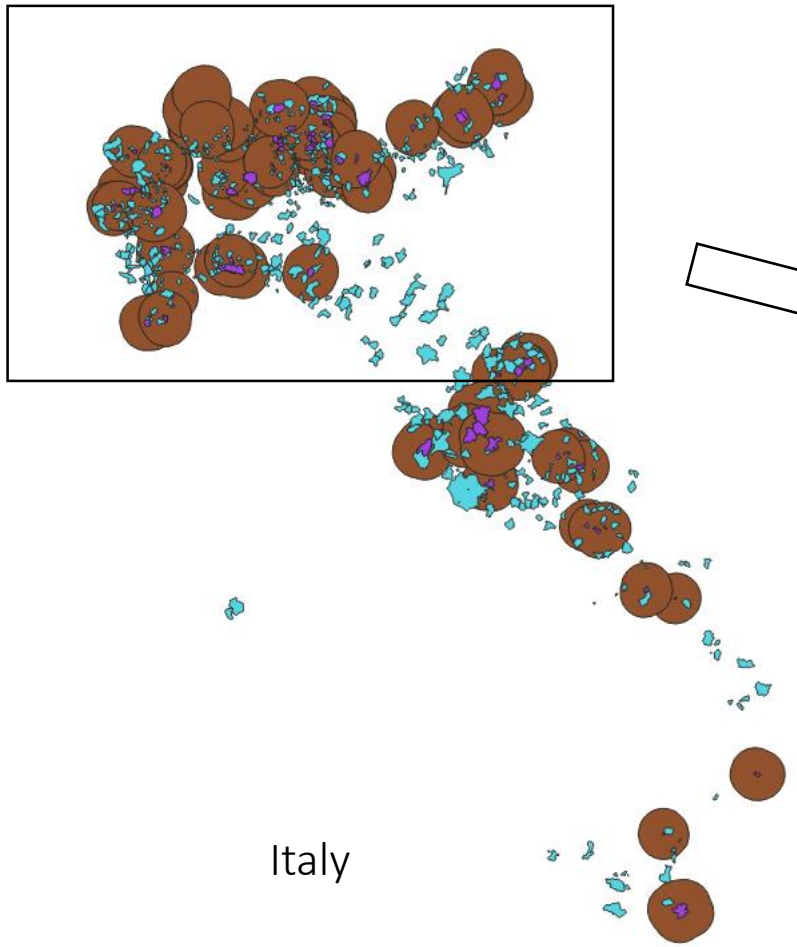


Explanatory:
Hydro power

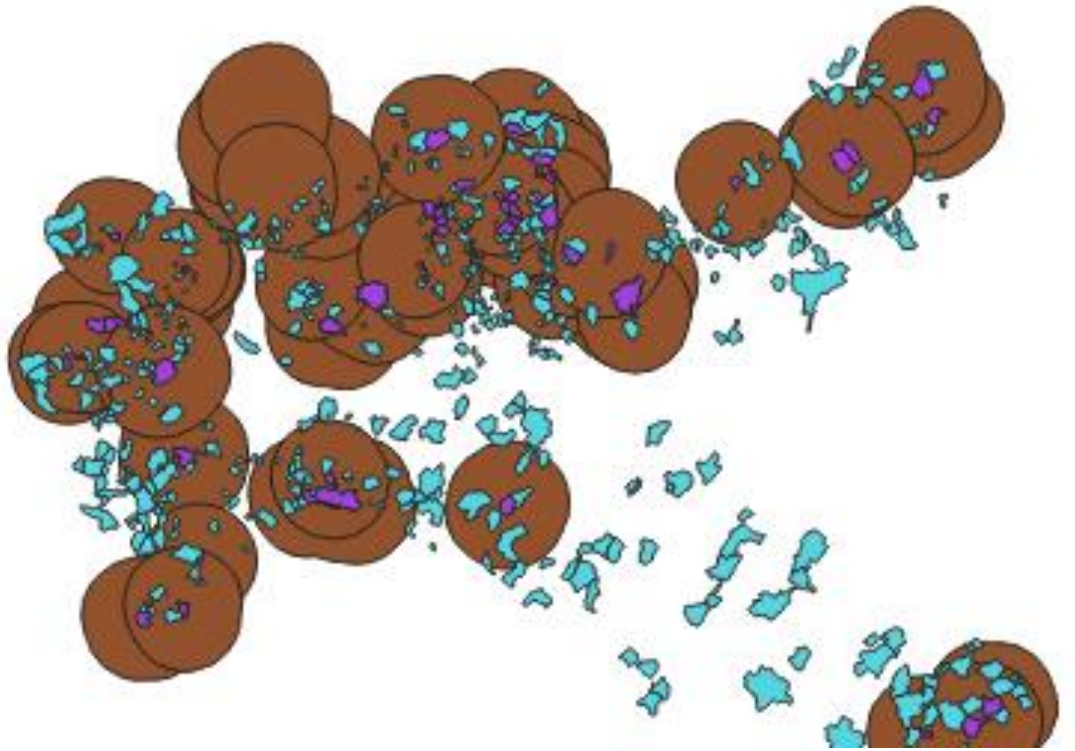


Explained:
Income per person

Hydro, nearby (30 km), and generators



Italy



North of Italy

Are municipalities with hydro richer today?

(2) Standard errors clustered by province

	(1) Income 2017	(2) Income 2017	(3) Income 2017	(4) Income 2017
Power plant	0.102***	0.109***	0.00610	0.0349
	(0.0213)	(0.0292)	(0.0245)	(0.0264)
Latitude			0.0858***	
			(0.00432)	
Longitude				-0.0652***
				(0.00566)
Constant	9.366***	9.366***	5.646***	10.13***
	(0.00336)	(0.0297)	(0.189)	(0.0685)
r2	0.00189	0.00179	0.626	0.469
N	6659	6644	6644	6644

Standard errors in parentheses
† p<0.15, * p<0.10, ** p<0.05, *** p<0.010

No, not when we add longitude or latitude

Are municipalities *nearby* hydro richer today?

(2) Standard errors clustered by province

	(1) Income 2017	(2) Income 2017	(3) Income 2017	(4) Income 2017
Power coverage 30km	0.165***	0.150***	-0.00851	-0.00130
	(0.00603)	(0.0358)	(0.0153)	(0.0217)
Latitude			0.0865***	
			(0.00439)	
Longitude				-0.0653***
				(0.00591)
Constant	9.294***	9.294***	5.623***	10.13***
	(0.00462)	(0.0345)	(0.192)	(0.0756)
r2	0.0889	0.0758	0.626	0.469
N	7714	6644	6644	6644

Standard errors in parentheses
† p<0.15, * p<0.10, ** p<0.05, *** p<0.010

No, not when we add longitude or latitude

Municipalities with electric generators richer?

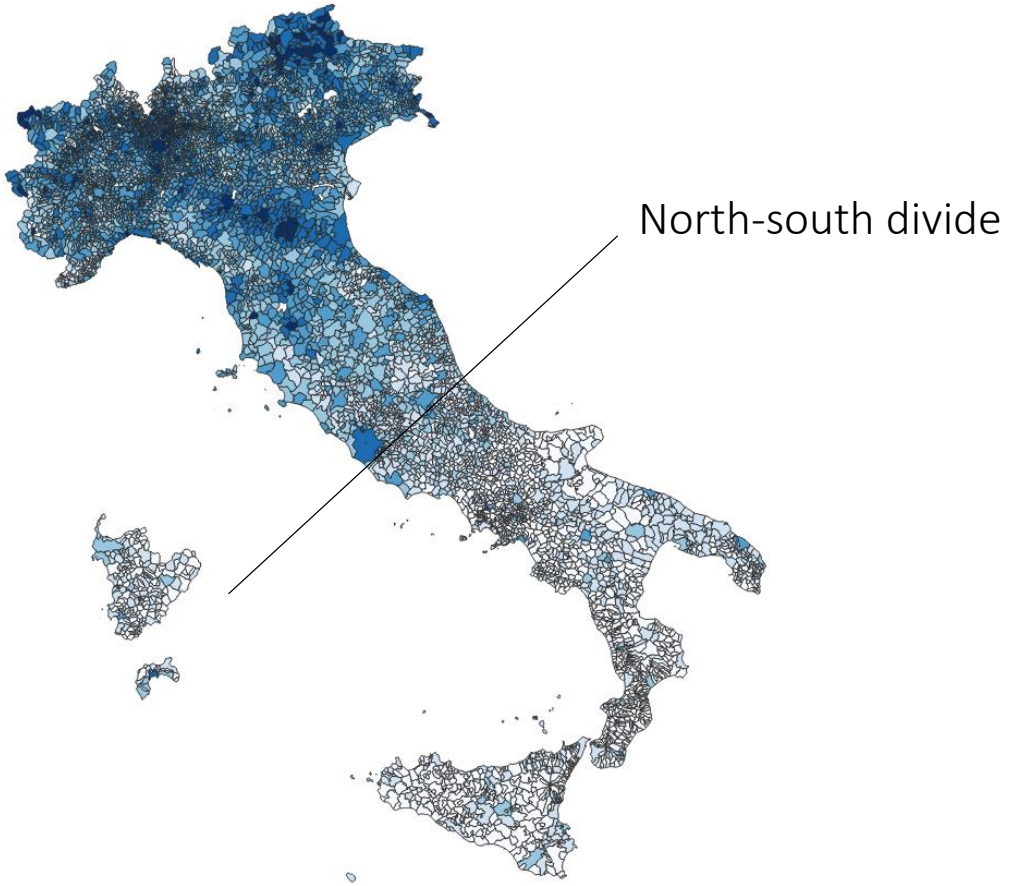
(2) Standard errors clustered by province

	(1) Income 2017	(2) Income 2017	(3) Income 2017	(4) Income 2017
Electric generator	0.140***	0.140***	0.0463***	0.0544***
	(0.00848)	(0.0214)	(0.0104)	(0.0131)
Latitude			0.0852***	
			(0.00429)	
Longitude				-0.0645***
				(0.00563)
Constant	9.354***	9.354***	5.670***	10.12***
	(0.00354)	(0.0305)	(0.188)	(0.0681)
r2	0.0218	0.0218	0.628	0.472
N	6644	6644	6644	6644

Standard errors in parentheses
† p<0.15, * p<0.10, ** p<0.05, *** p<0.010

Yes, even when we add longitude or latitude:
Municipalities with generators are 5% richer today on average

Thank you for your attention!



Income per person by municipality today (2017)

Thank you!

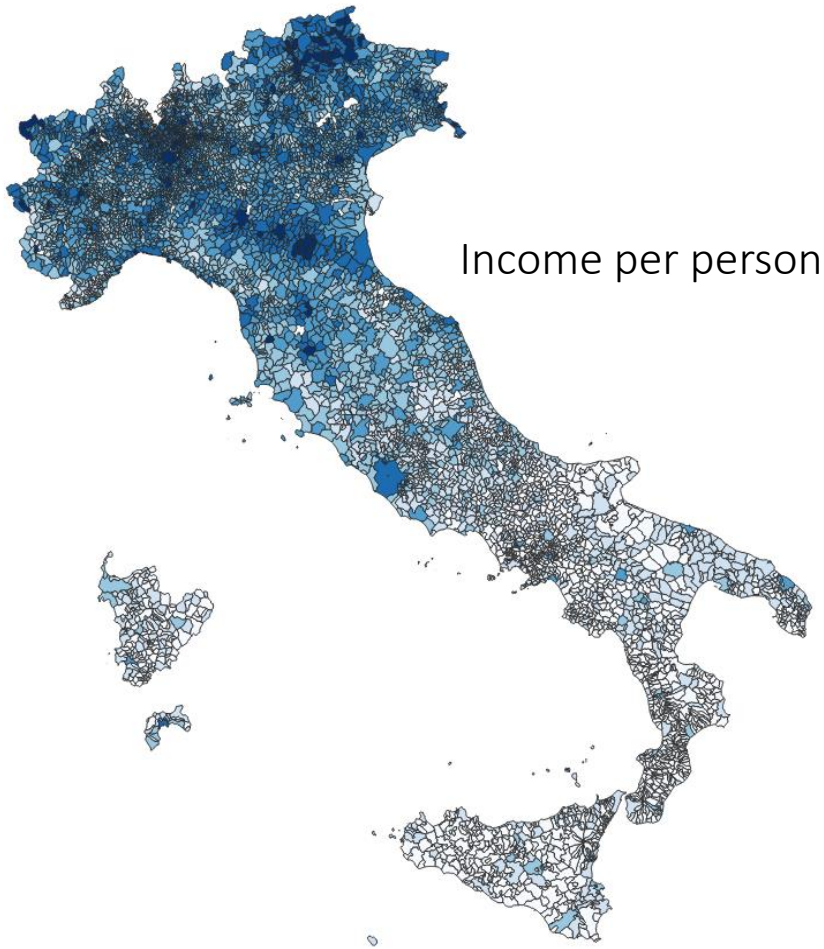
Hypothesis: lost opportunity?

1) Can we predict hydro-power potential?
2) If yes, can we then compute income loss of not building a plant?

How to proceed:

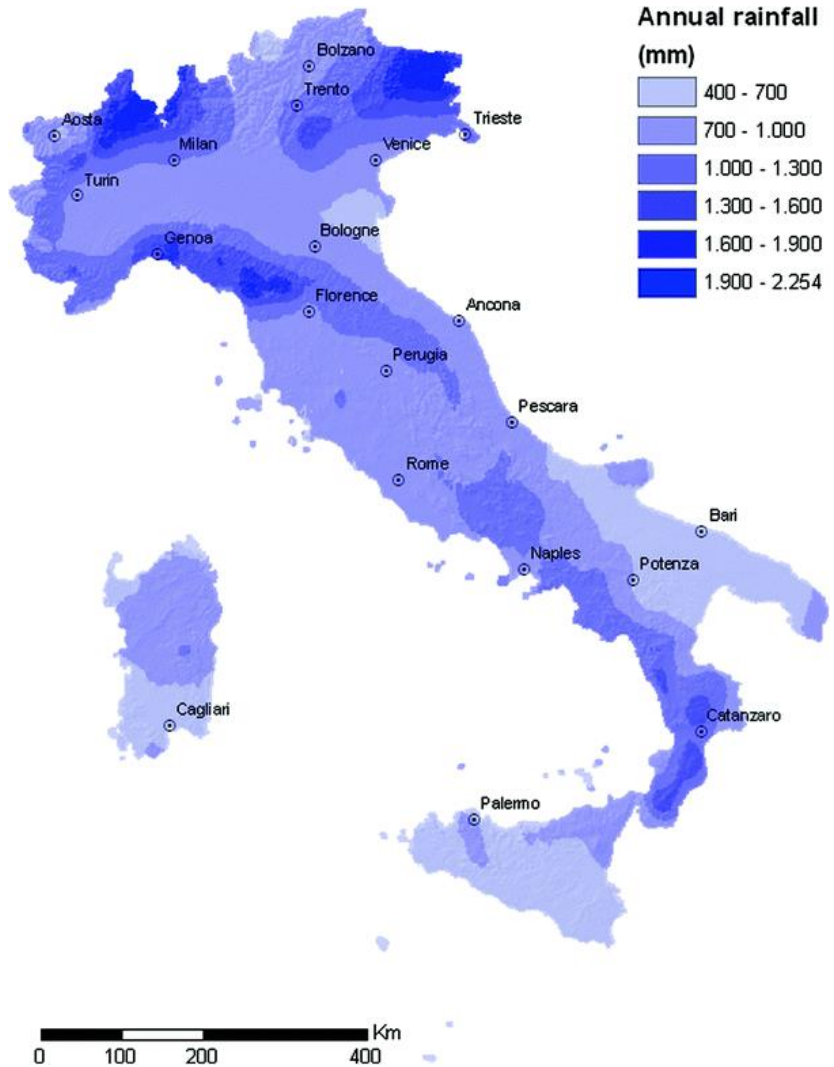
a) Identify municipalities with water streams
b) Identify municipalities with power potential (slope)
c) Identify municipalities with rainfall potential

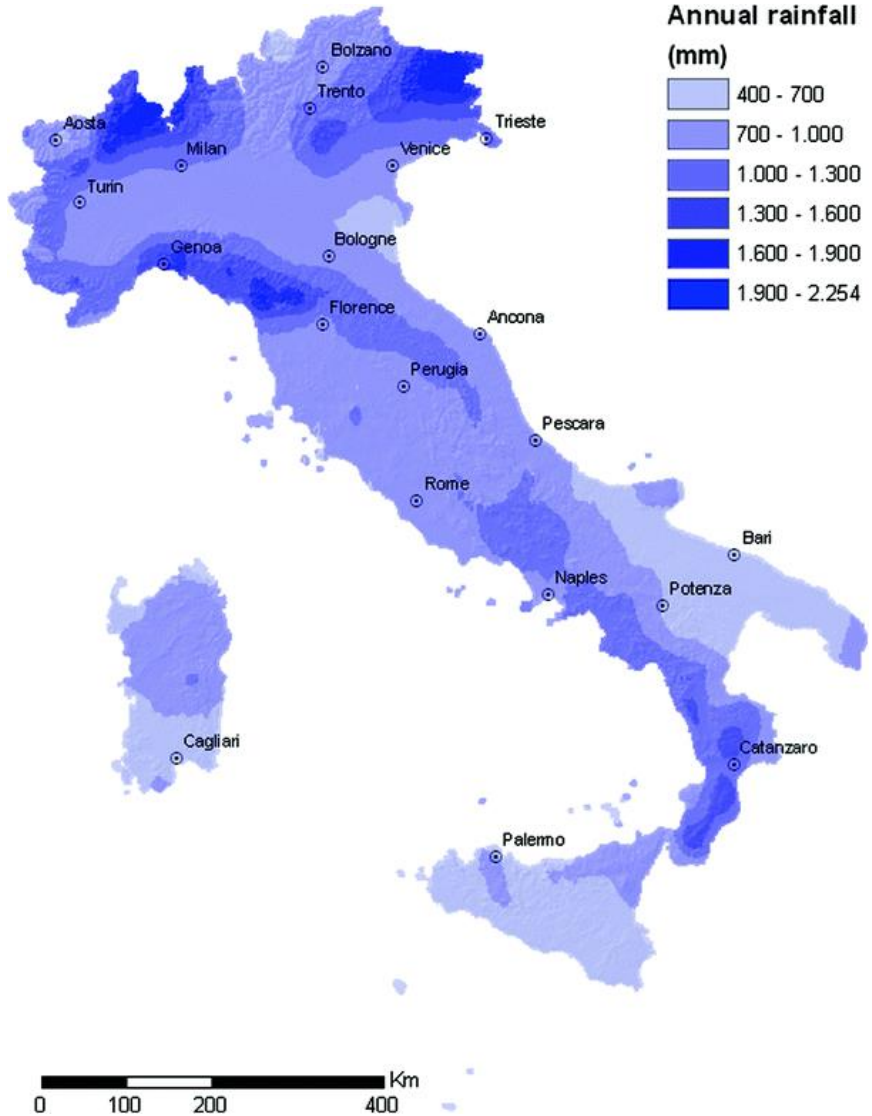
Water streams



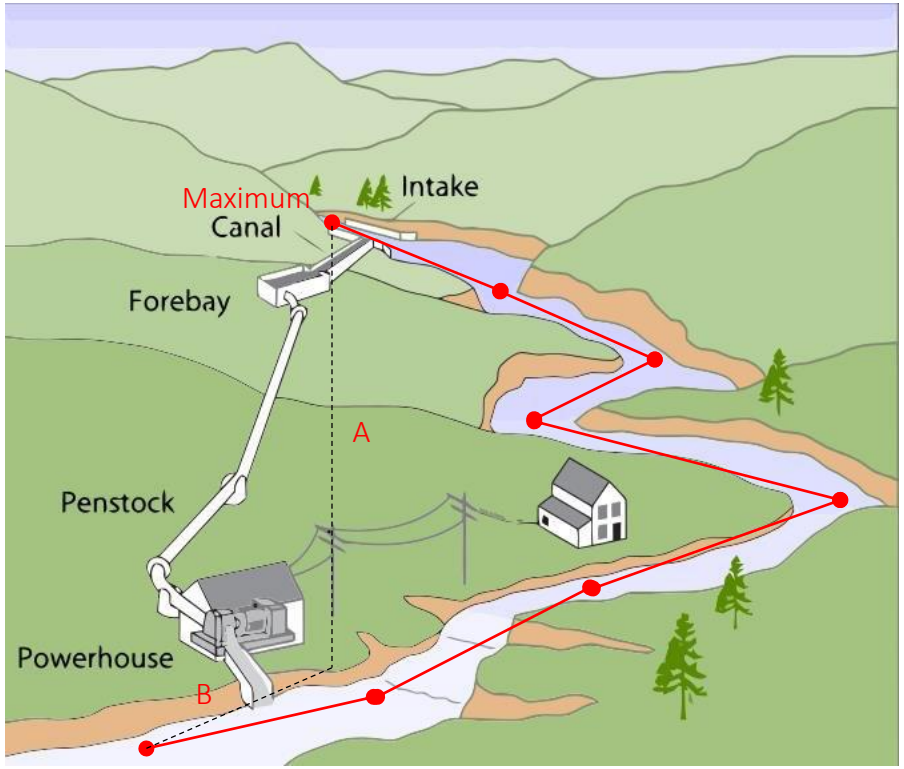
Income per person

Water streams

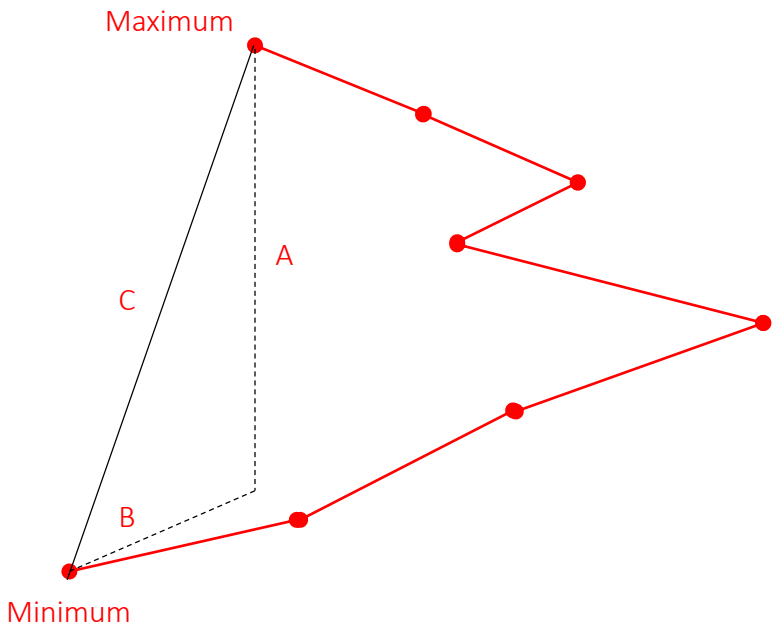



Annual rainfall
(mm)
400 - 700
700 - 1.000
1.000 - 1.300
1.300 - 1.600
1.600 - 1.900
1.900 - 2.254
Bolzano
Trento
Aosta
Trieste
Milan
Venice
Turin
Genoa
Bologne
Florence
Ancona
Perugia
Pescara
Rome
Bari
Naples
Potenza
Cagliari
Catanzaro
Palermo
Km
0
100
200
400

Hydro-power possibility



Hydro-power possibility

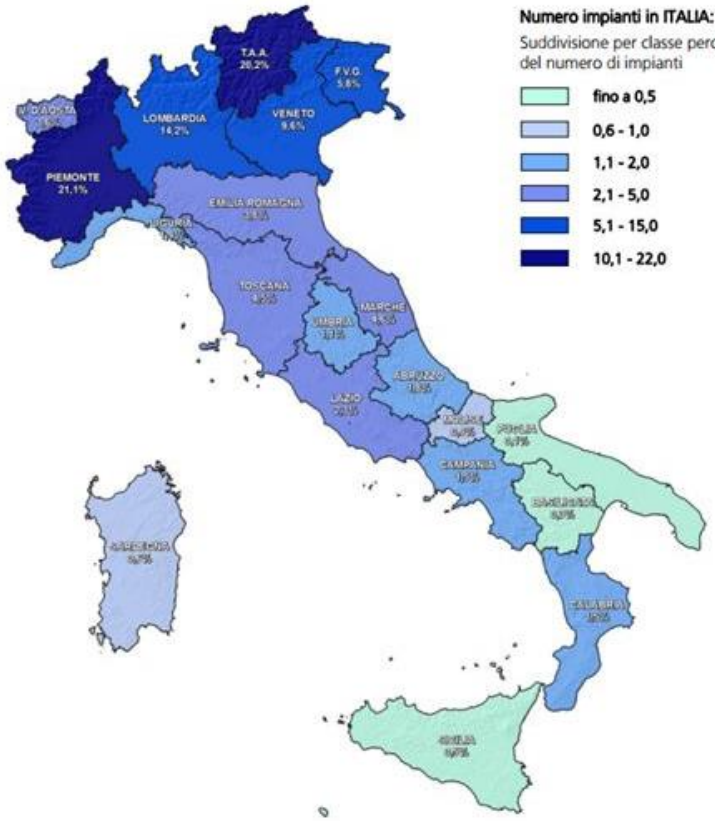


In each municipality:

1) Compute maximum height difference in municipality (A)
2) Compute distance between the two points (B)
3) Calculate slope C = A/B
4) If several water streams, use max slope (first-best)

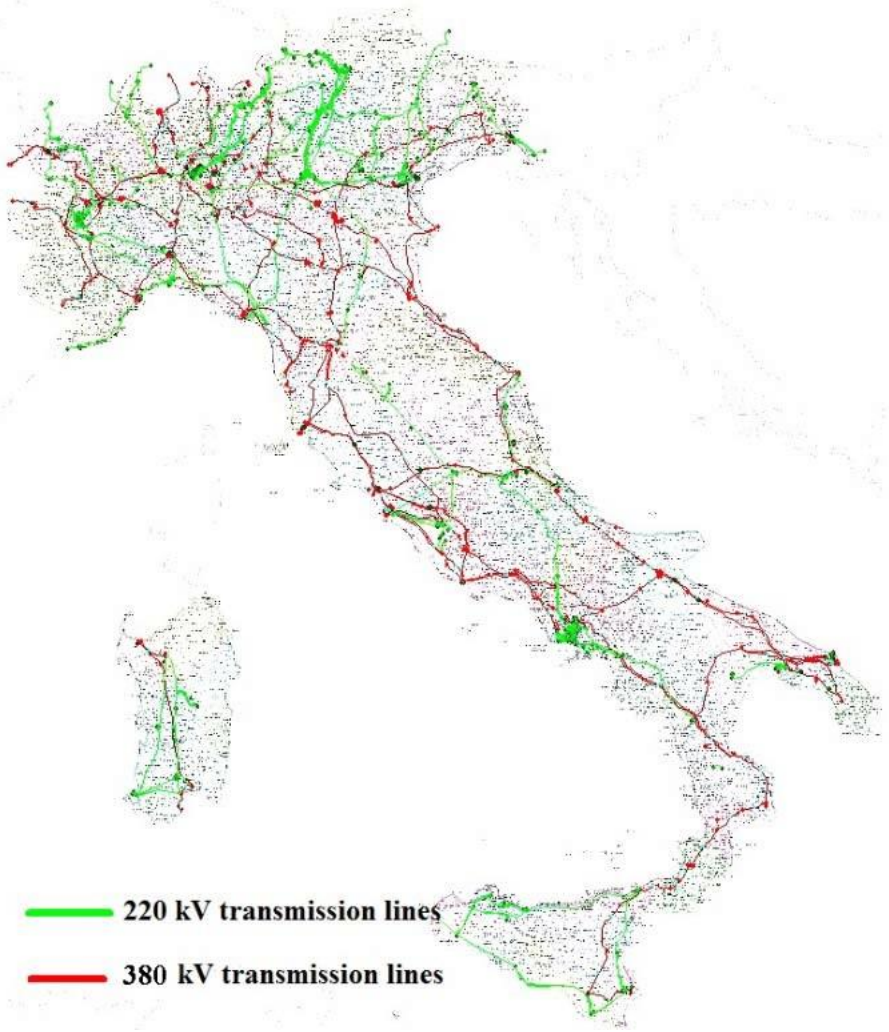
2) What factors were relevant?

Regional distribution of the number of hydro power plants at the end of 2013

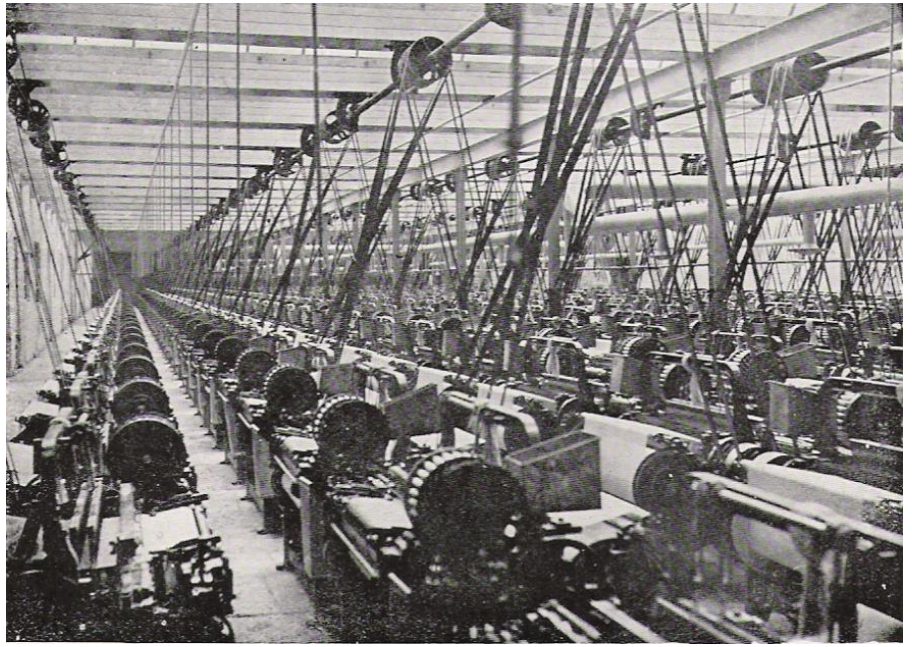


3,250 hydro power plants – 55.5% in the North

2) What factors were relevant?



Water



Shafts

Steam

Electricity