# *Do GVCs make development easier?*

Ricardo Hausmann
Conference on European Economic Integration (CEEI) 2021
Vienna November 22, 2021

# Agenda

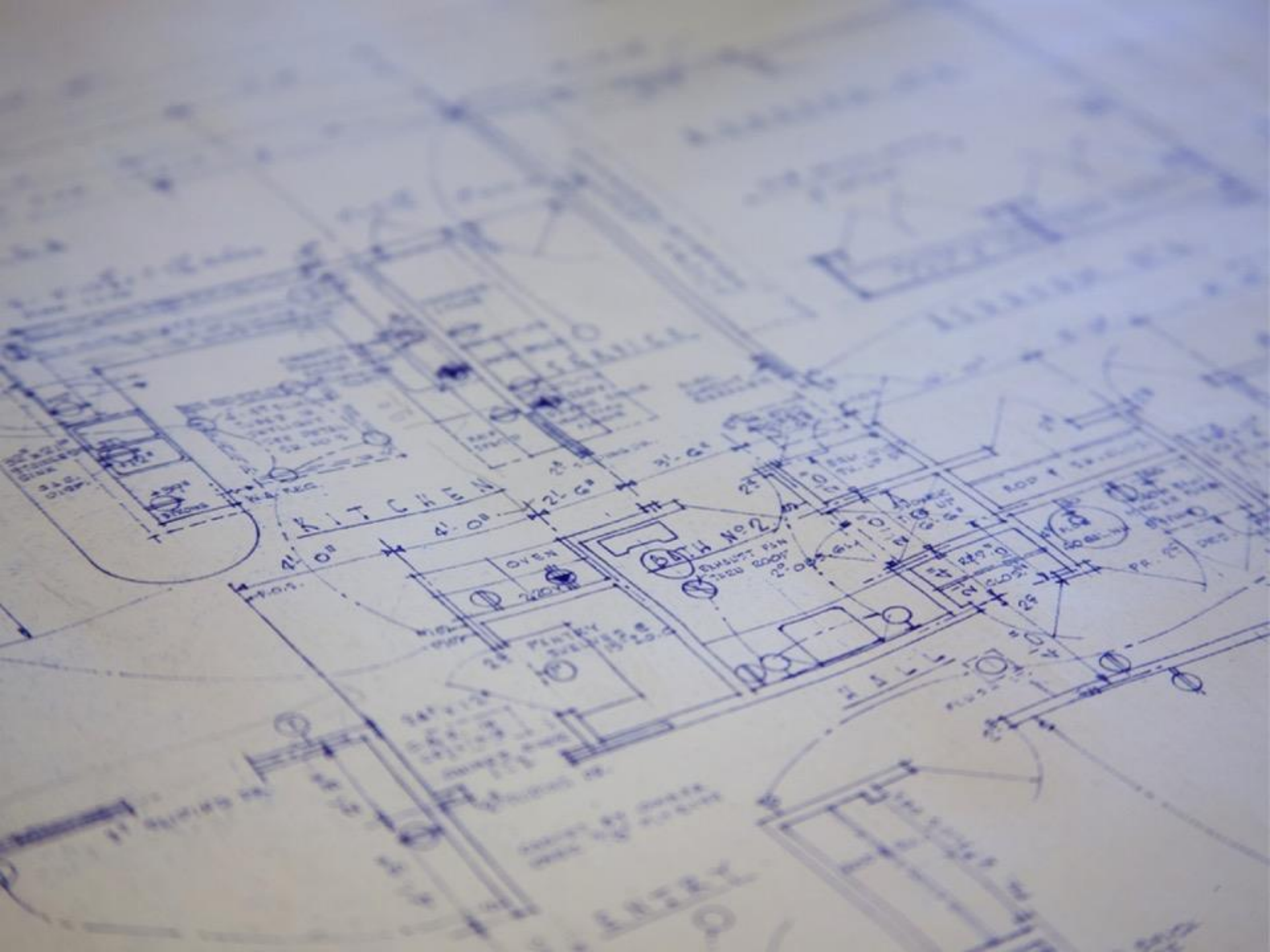
- Why do value chains arise?
- Do they make progress easier?
- For whom?
- Implications for Central and Eastern Europe

# The world as we found it, the world as we want it

S670

# What is technology?

Jordi Cayuela


KITCHEN
OVEN
PANTRY
BATH No. 2
HALL

# Knowhow – Tacit knowledge

Lufthan

# Division of knowledge

Butcher

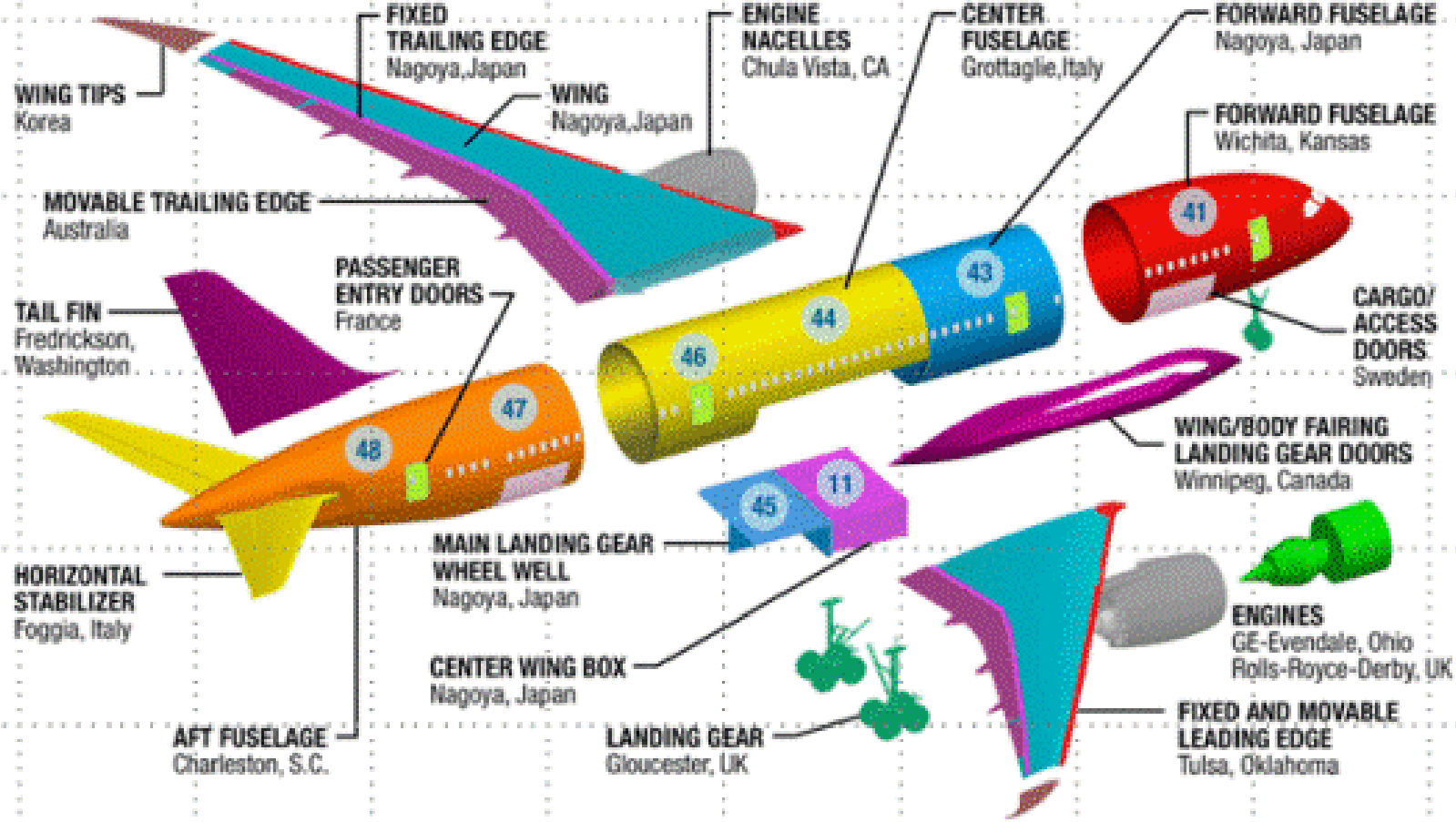
Baker

Candlestick maker

Nikon
D200
感謝キャン
プレゼ
CASHIER
Nikon
Nikon
D70s
Nikon
D70S
Yodobashi-Camera

## THE COMPANIES

| U.S. | CANADA | AUSTRALIA | JAPAN | KOREA | EUROPE |
|---|---|---|---|---|---|
| Boeing | Boeing | Boeing | Kawasaki | KAL-ASD | Messier-Dowty |
| Spirit | Messier-Dowty | | Mitsubishi | | Rolls-Royce |
| Vought | | | Fuji | | Latecoere |
| GE | | | | | Alenia |
| Goodrich | | | | | Saab |

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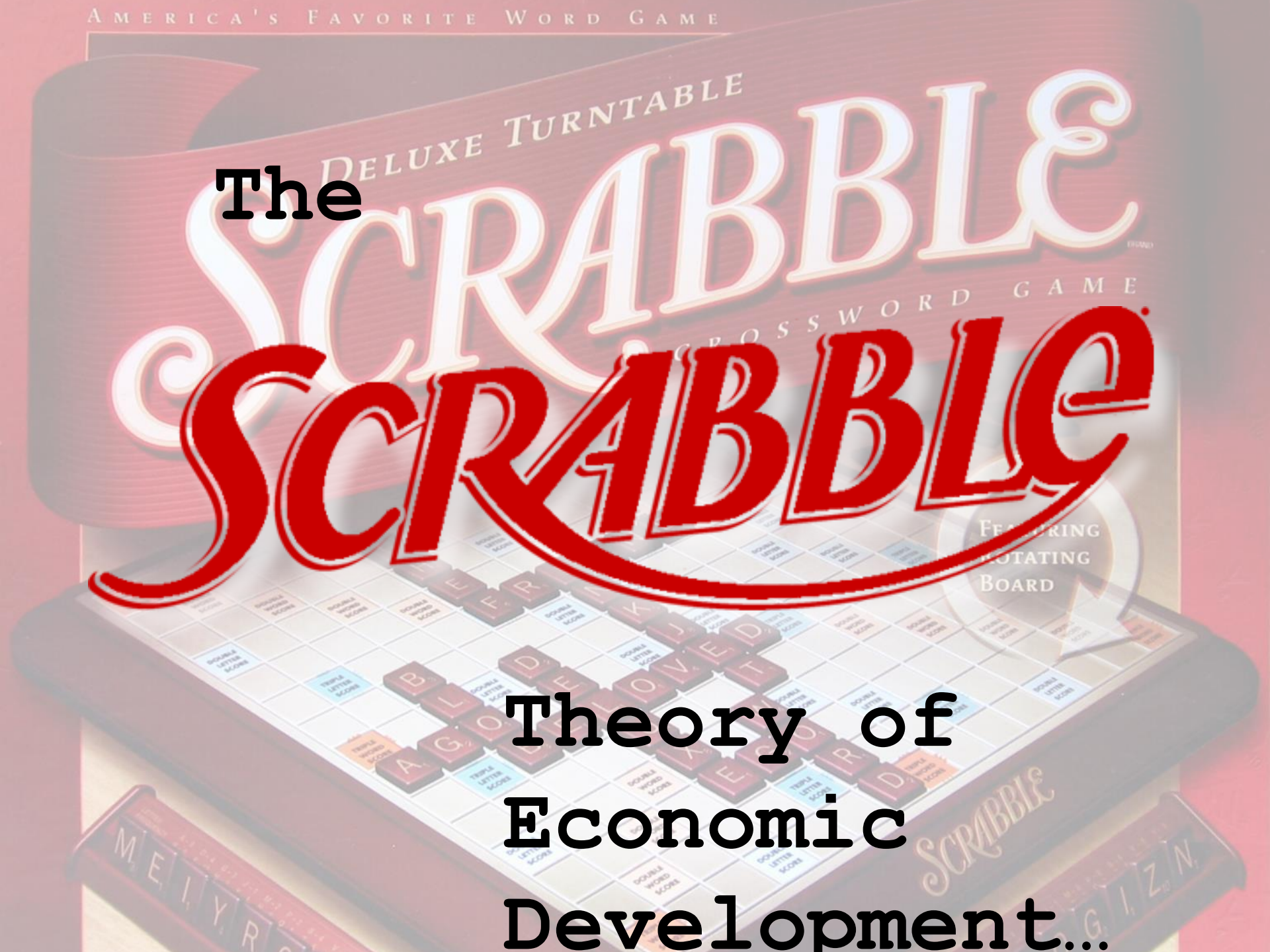



# The Theory of Economic Development…

If you have only one letter…

… there aren’t many words

If you have three letters

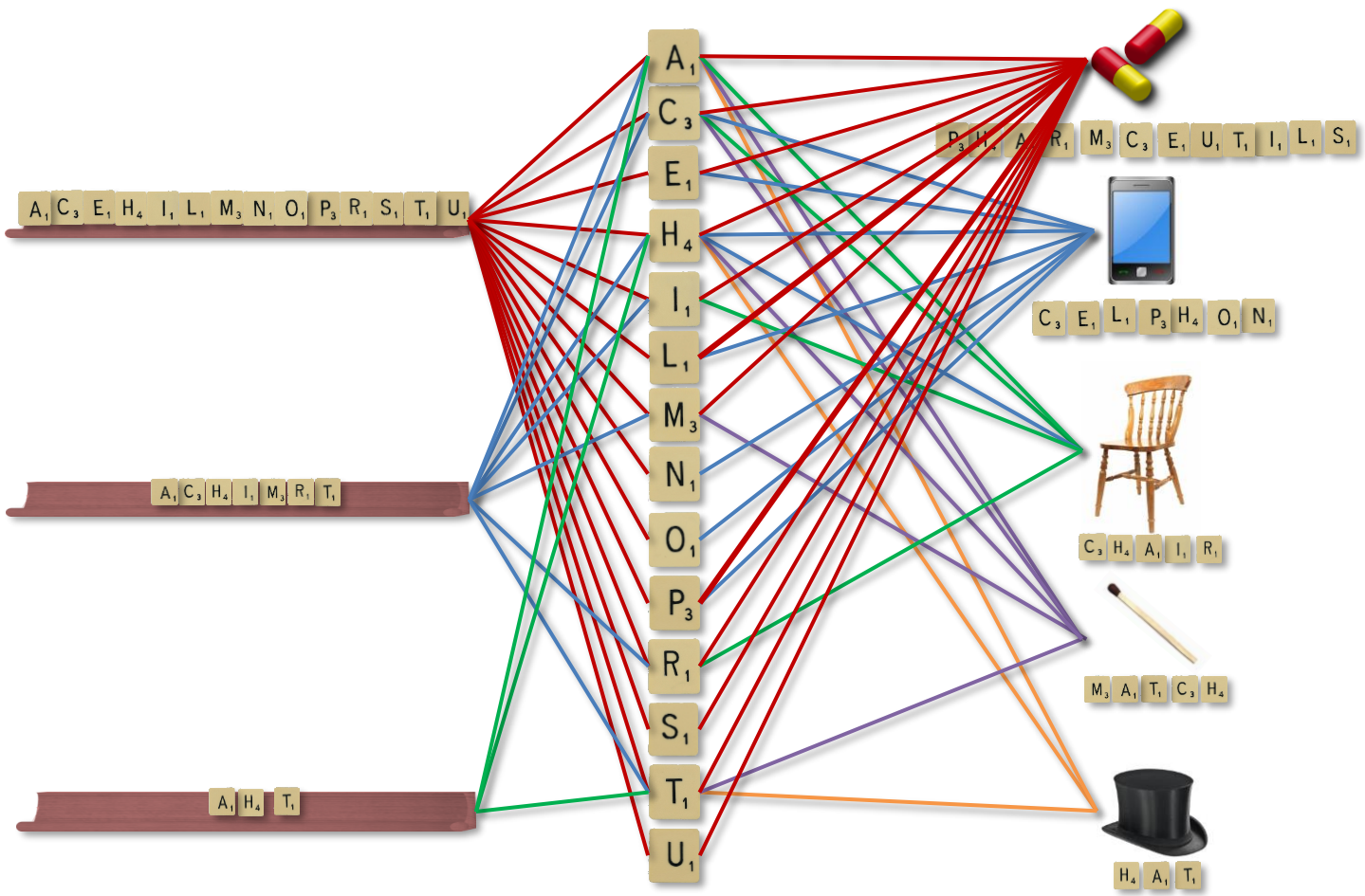
You can write 4 words

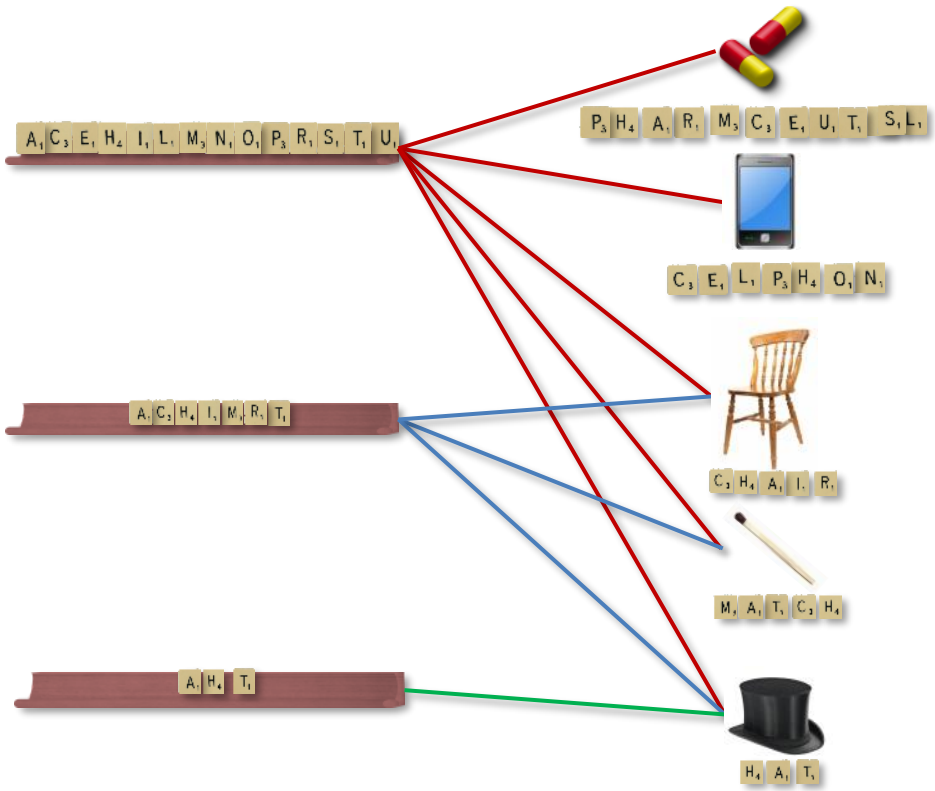
Now you have four letters

You can write 9 words

Think about all the words you could write with

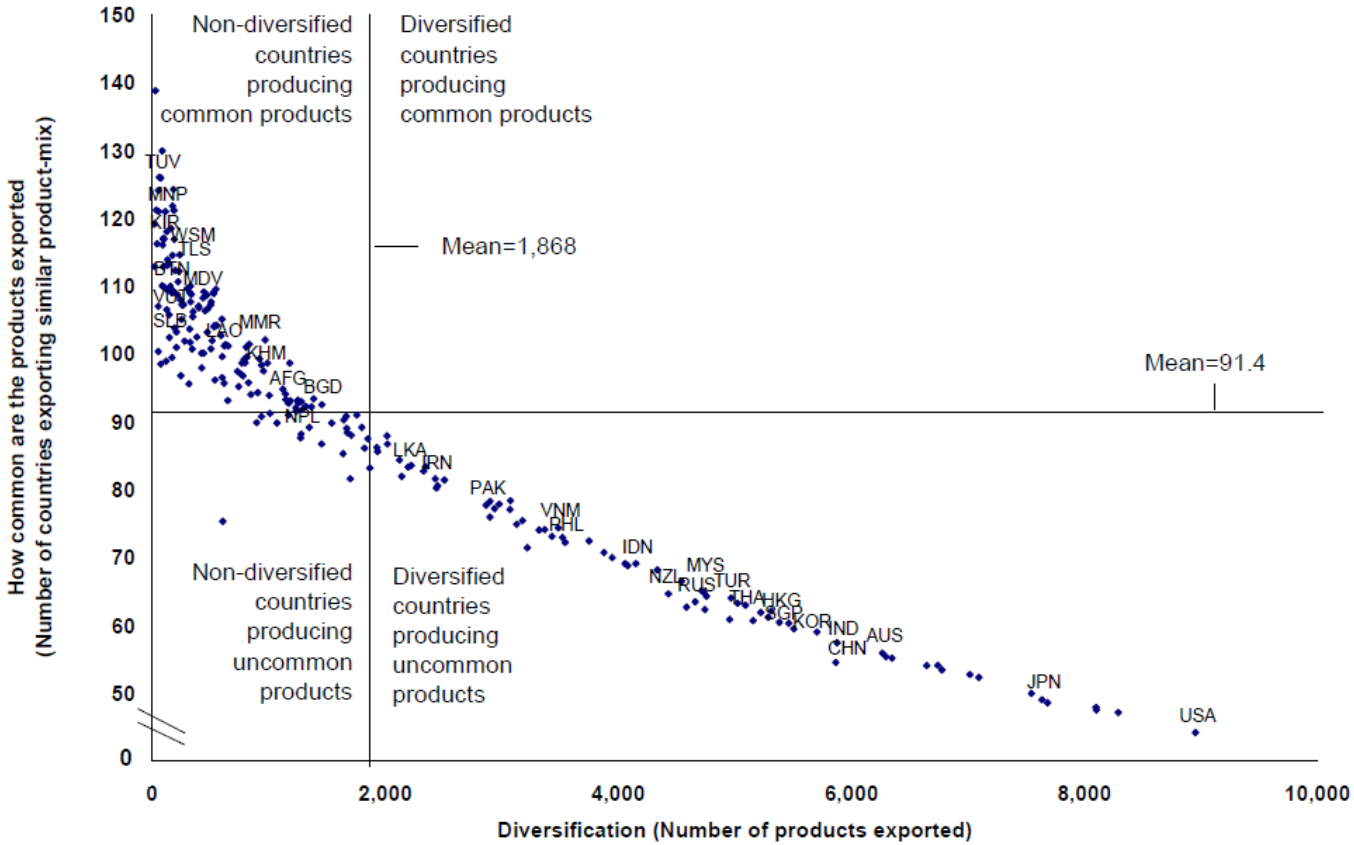
You could write 595 words


Places
Capabilities
Products
A1 C3 E1 H4 I1 L1 M3 N1 O1 P3 R1 S1 T1 U1
A1 C3 H4 I1 M3 R1 T1
A1 H4 T1
A1 C3 E1 H4 I1 L1 M3 N1 O1 P3 R1 S1 T1 U1
P3 U1 A1 R1 M3 C3 E1 U1 T1 I1 L1 S1
C3 E1 L1 P3 H4 O1 N1
C3 H4 A1 I1 R1
M3 A1 T1 C3 H4
H4 A1 T1


A1 C3 E1 H4 I1 L1 M3 N1 O1 P3 R1 S1 T1 U1
A1 C3 H4 I1 M3 R1 T1
A1 H4 T1
P3 H4 A1 R1 M3 C3 E1 U1 T1 S1 L1
C3 E1 L1 P3 H4 O1 N1
C3 H4 A1 I1 R1
M3 A1 T1 C3 H4
H4 A1 T1

# Diversification vs. Ubiquity

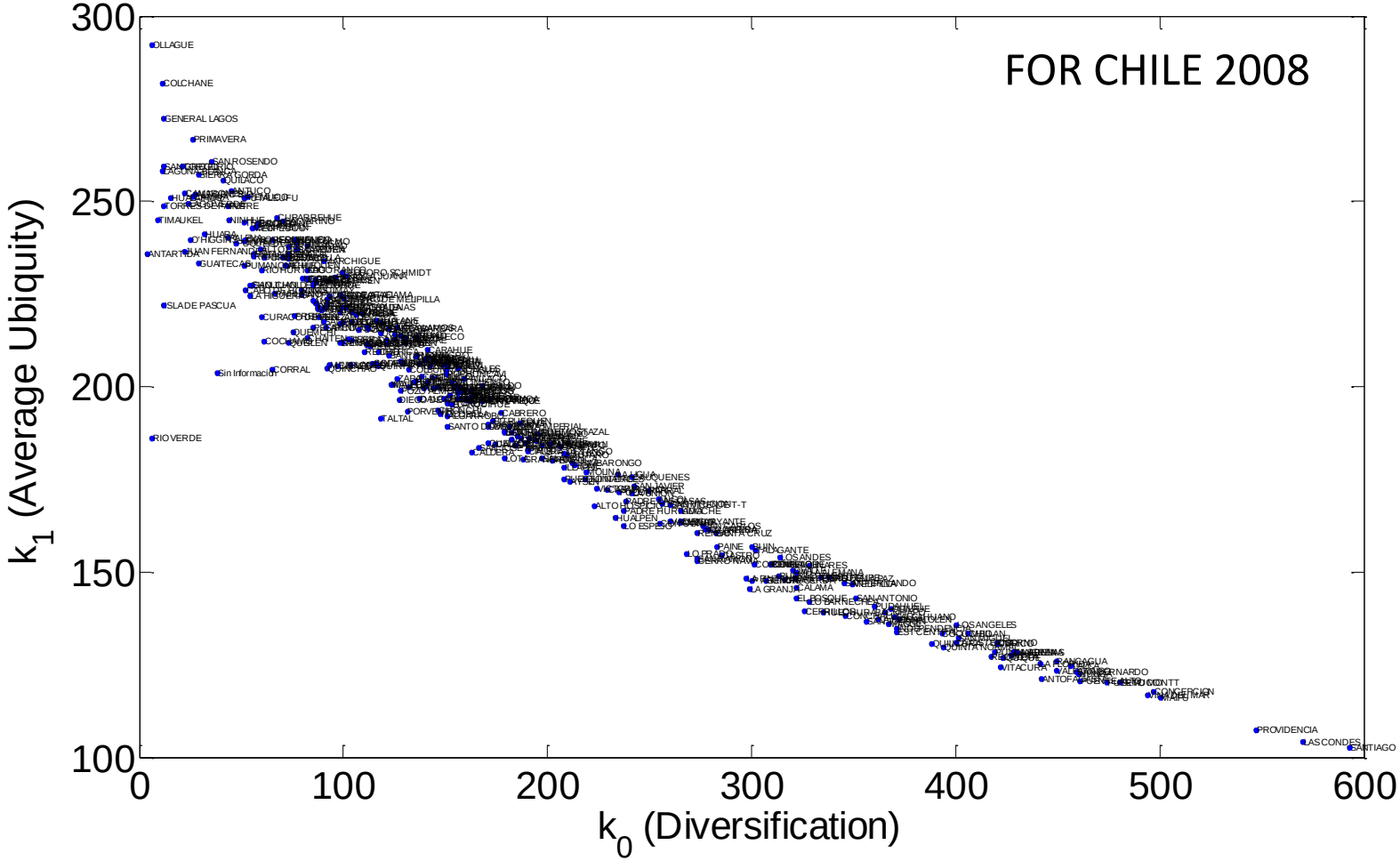
(2009)



# This pattern also holds subnationally:

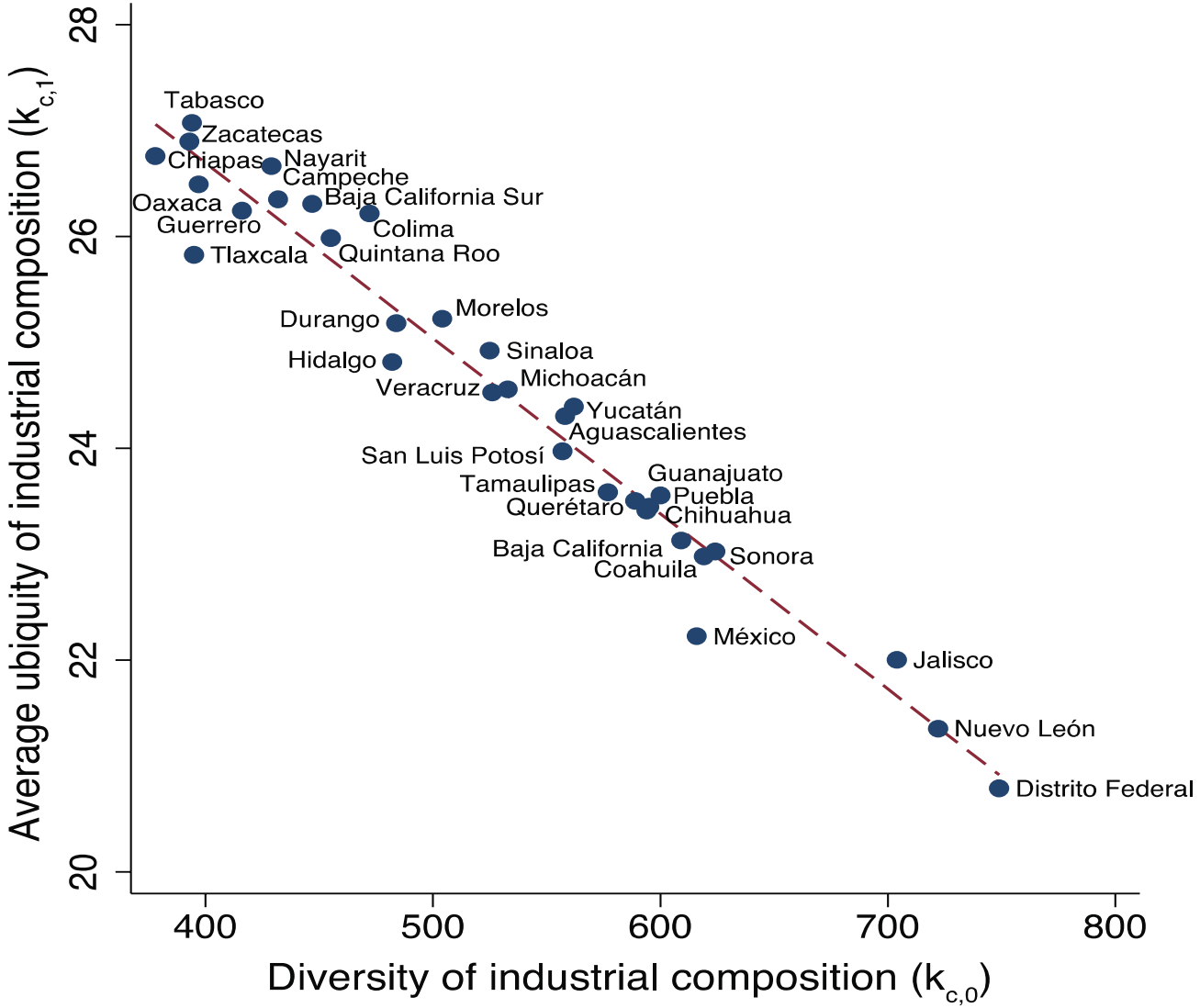
# Municipalities in Chile

## Diversification vs. Ubiquity



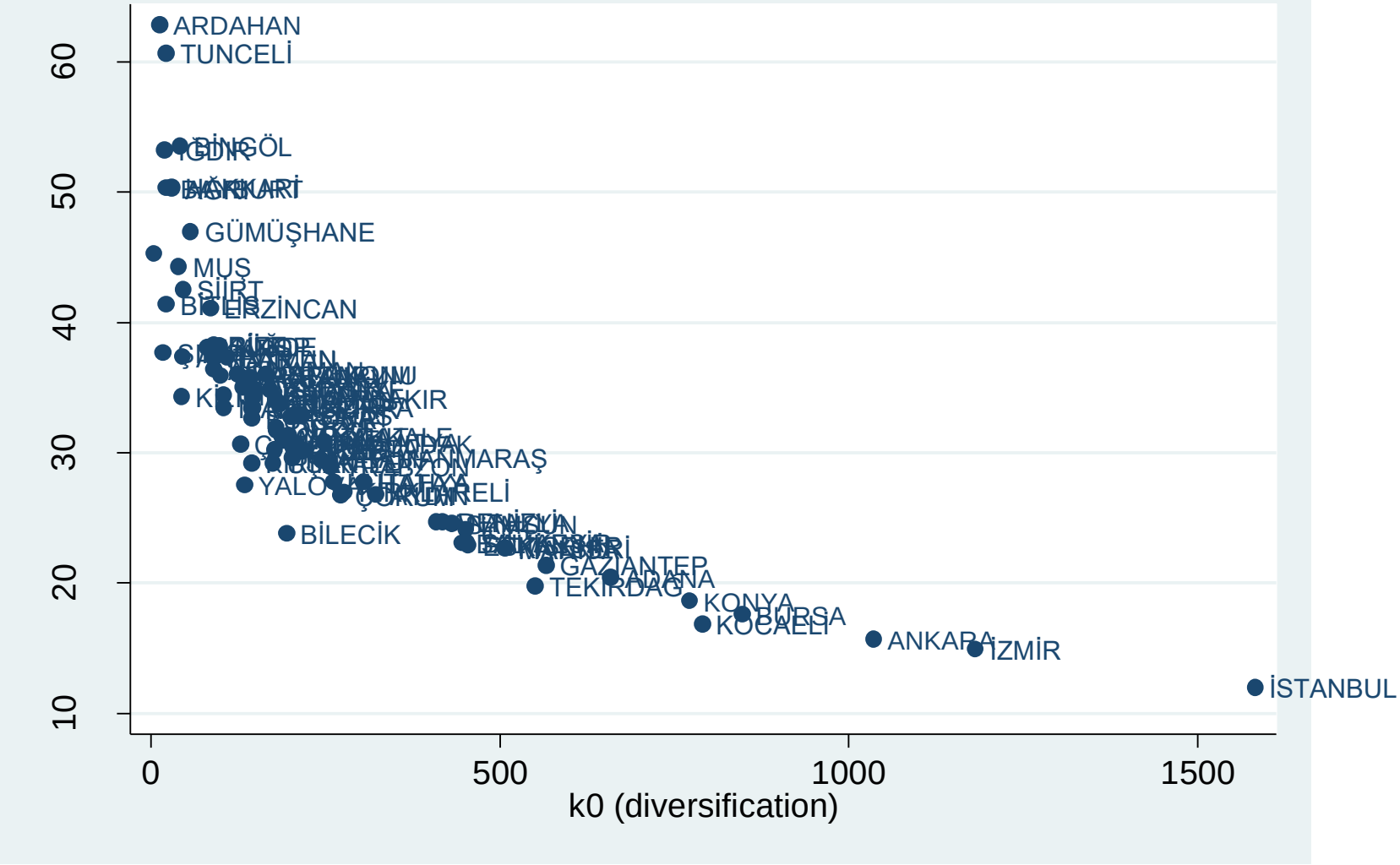
# States in Mexico

## Diversification vs. Ubiquity

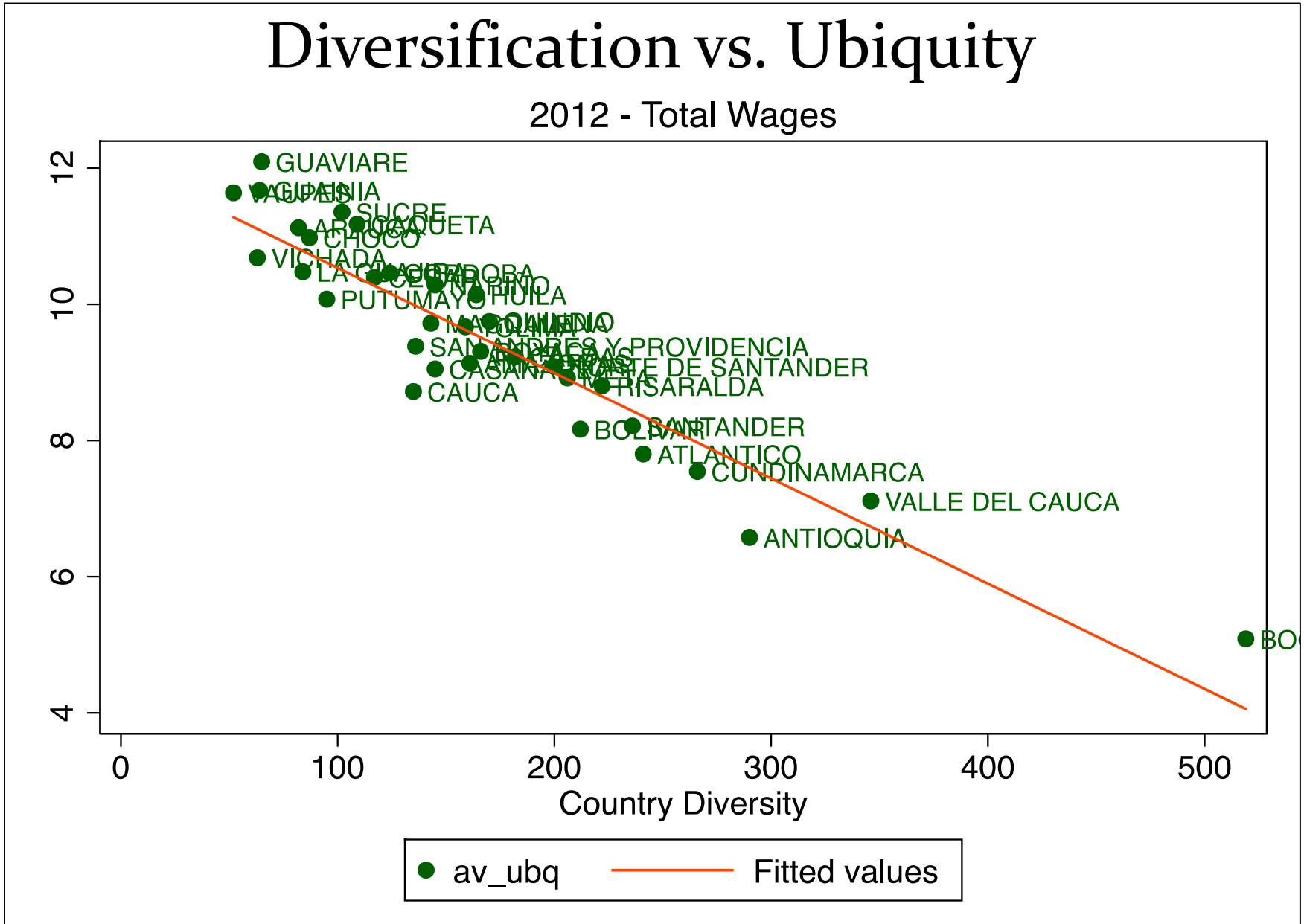


# Cities in Turkey

## Diversification vs. Ubiquity

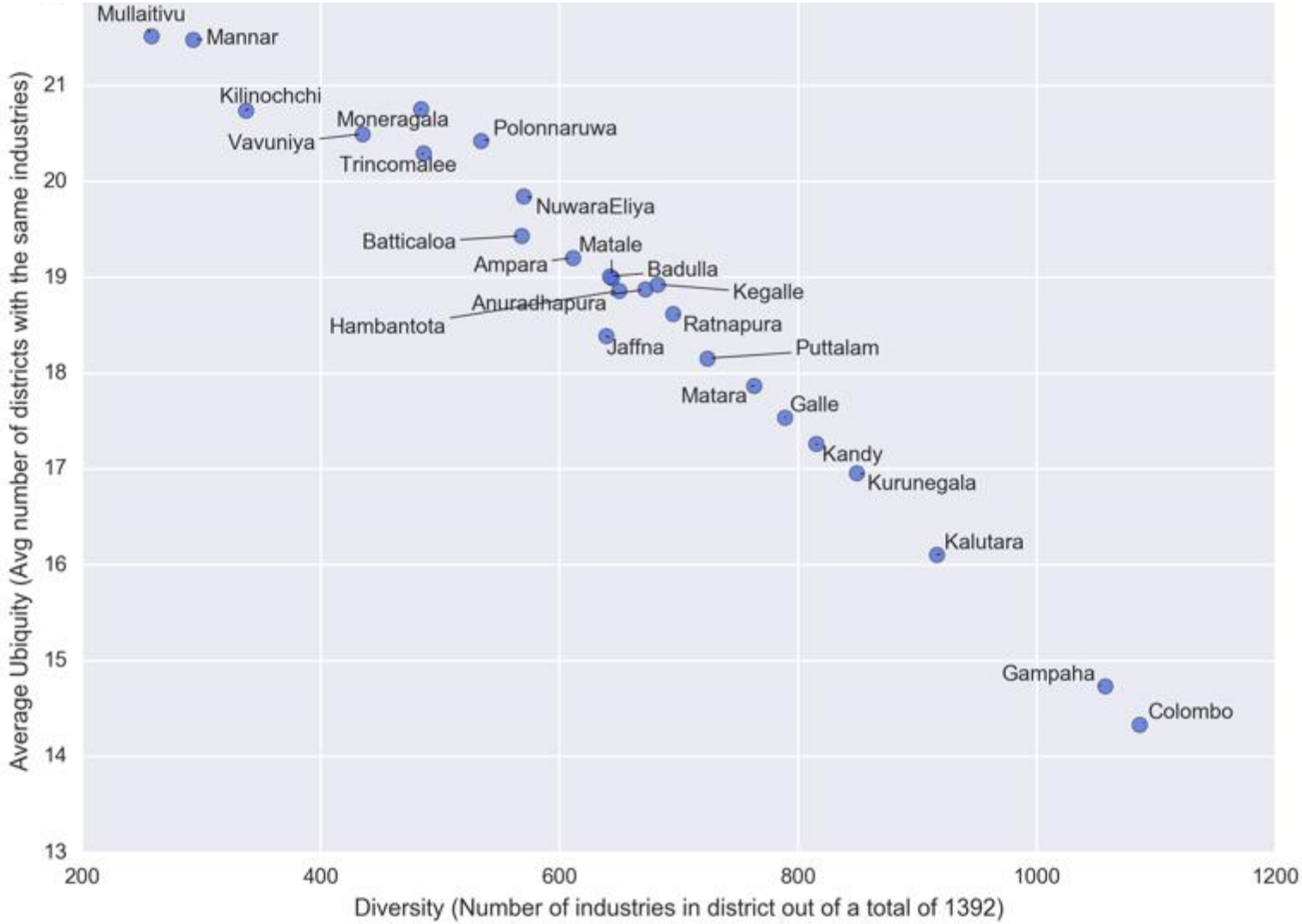


# Departments in Colombia



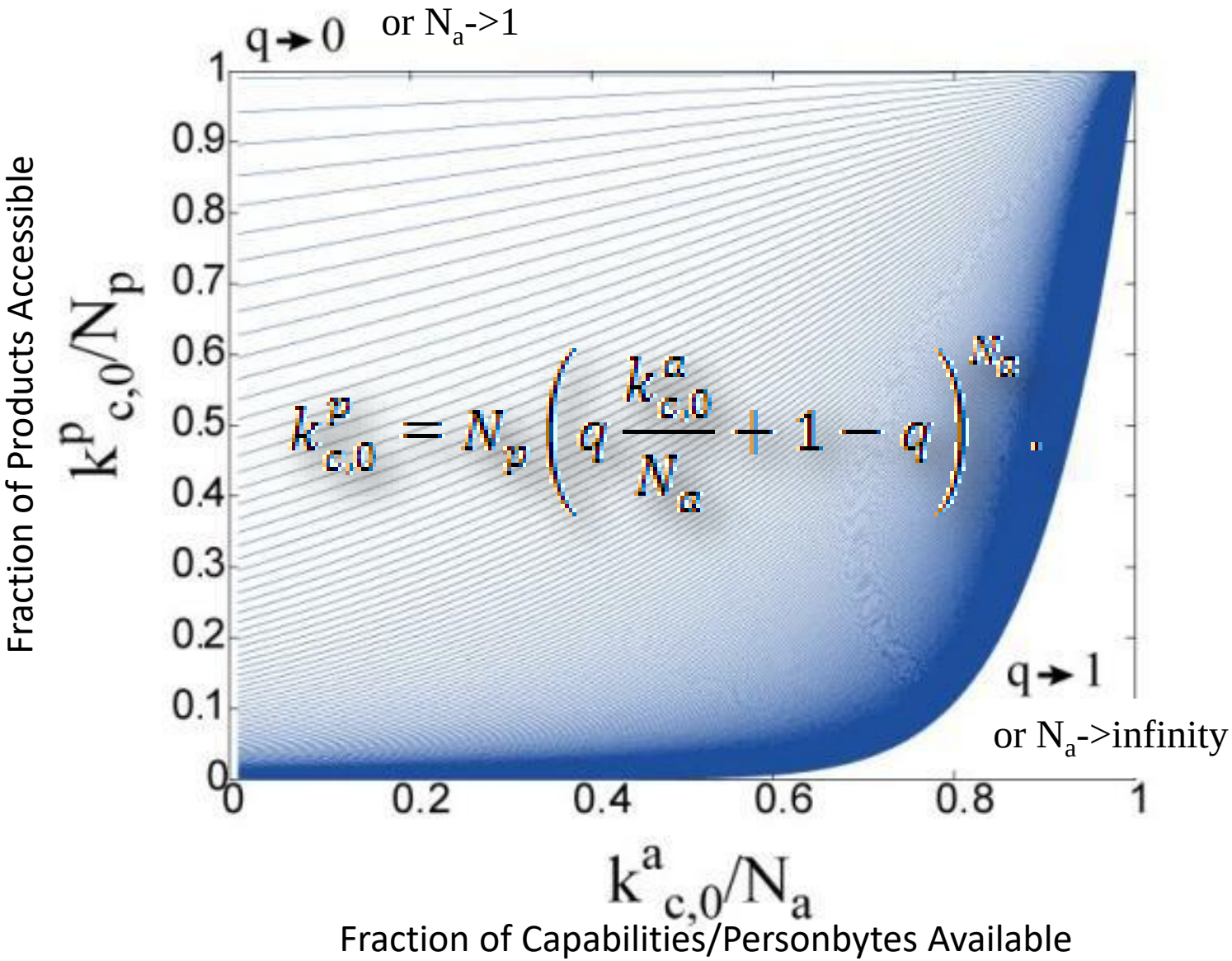
# And Districts in Sri Lanka

## Diversification vs. Ubiquity



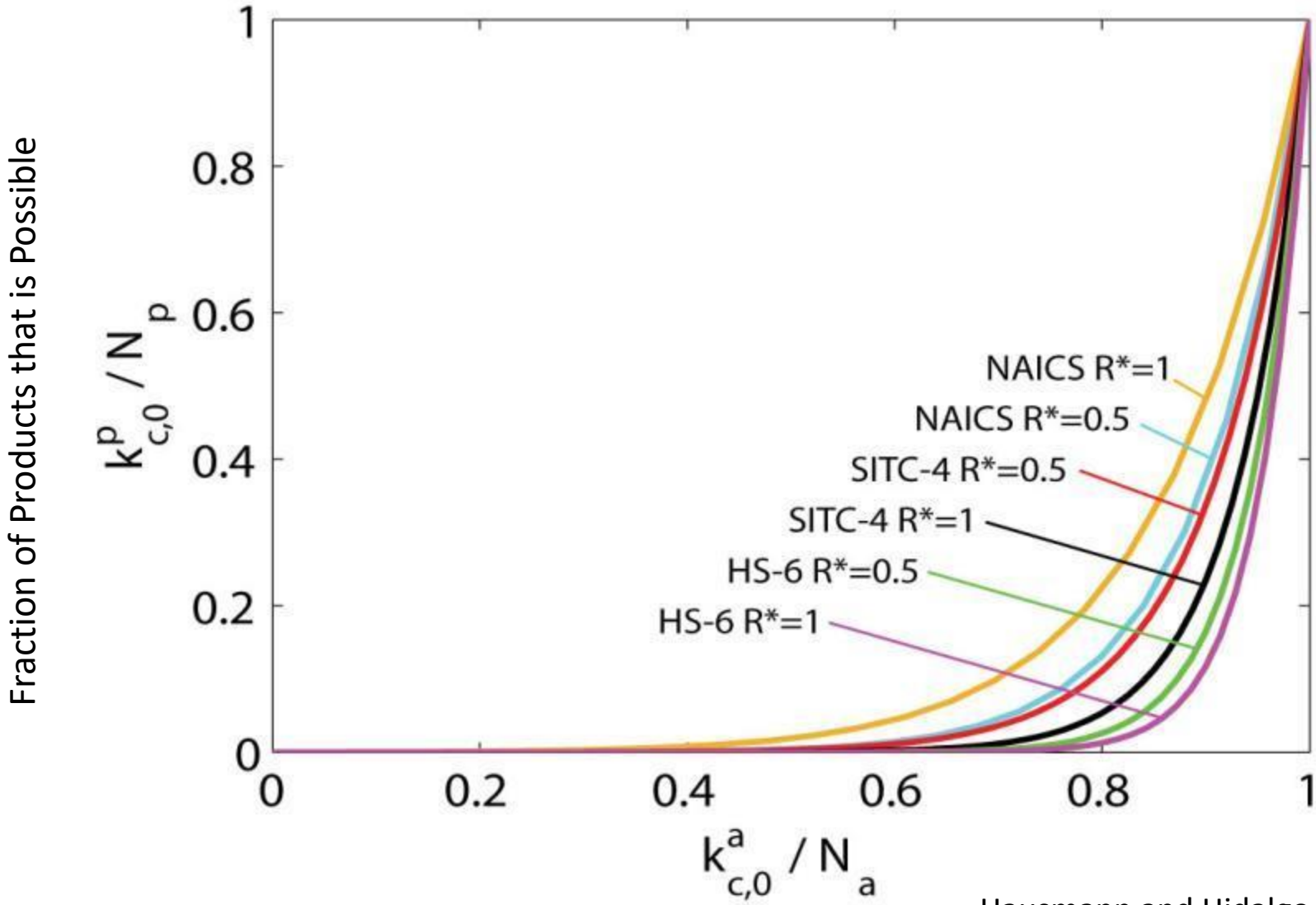
# WHAT IS THE RELATIONSHIP BETWEEN LETTERS AND WORDS, GIVEN TODAY'S TECHNOLOGIES

# Relationship between letters and words




Hausmann and Hidalgo (2011) JOEG

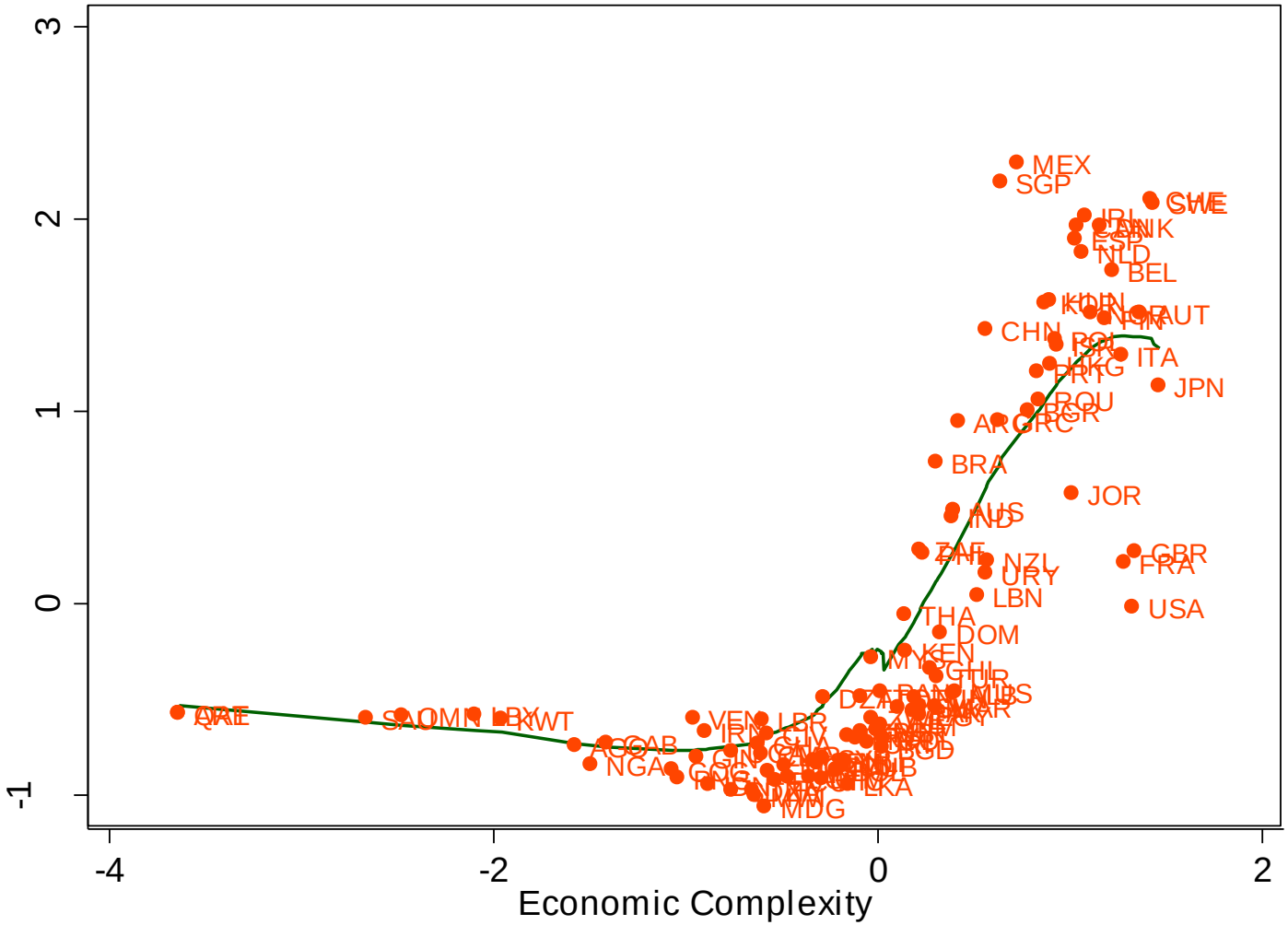
# An estimate of how convex is our world




Hausmann and Hidalgo (2011) JOEG

**WE CAN ALSO ESTIMATE FOR EVERY COUNTRY, HOW MANY “LETTERS” IT HAS AND HOW EASY IT WOULD BE FOR IT TO DIVERSIFY ADDING LETTERS**

# 1978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Economic Complexity
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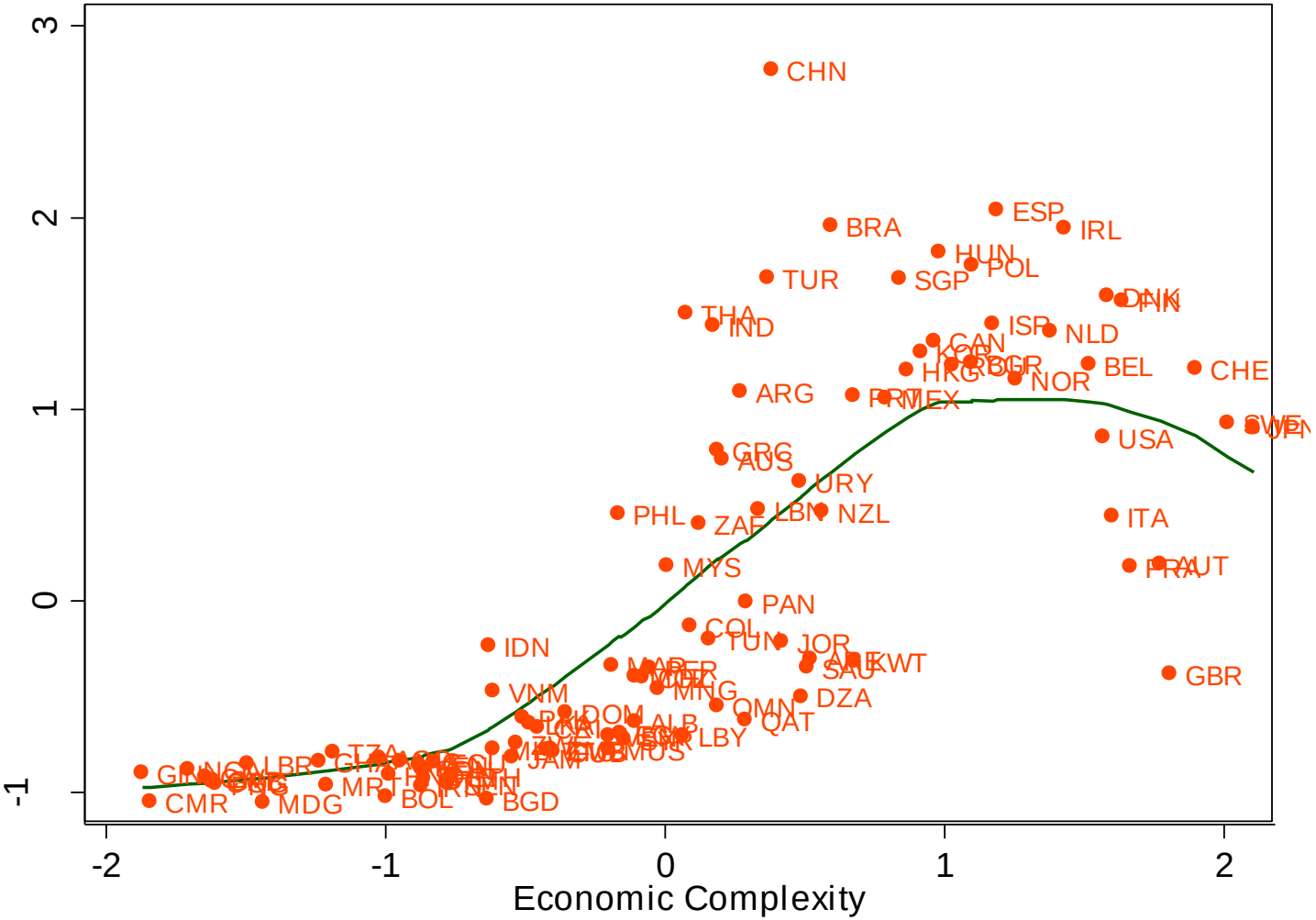
MDG

# 1988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ITA
MYS
PAN
COL
TUN
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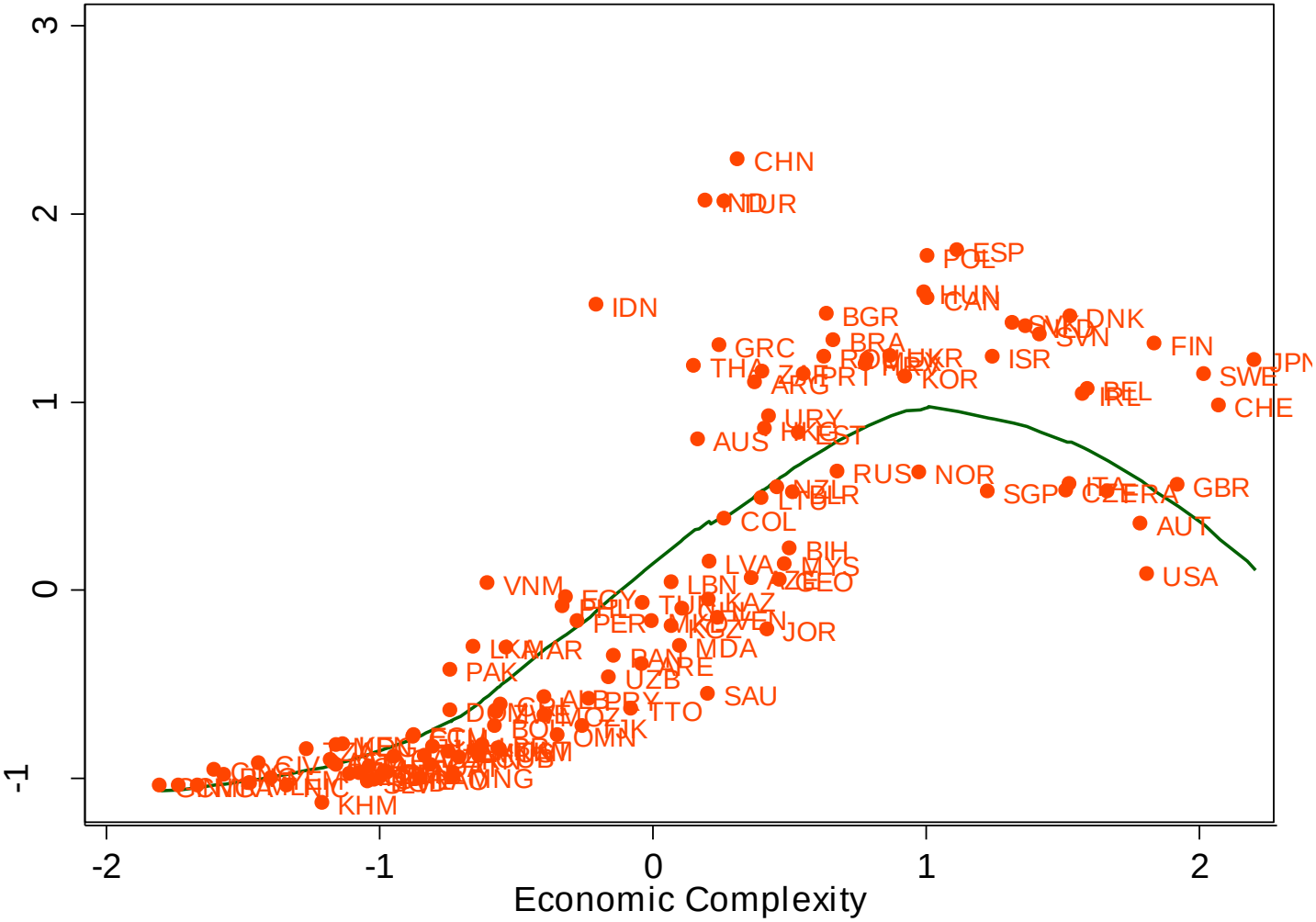
# 1998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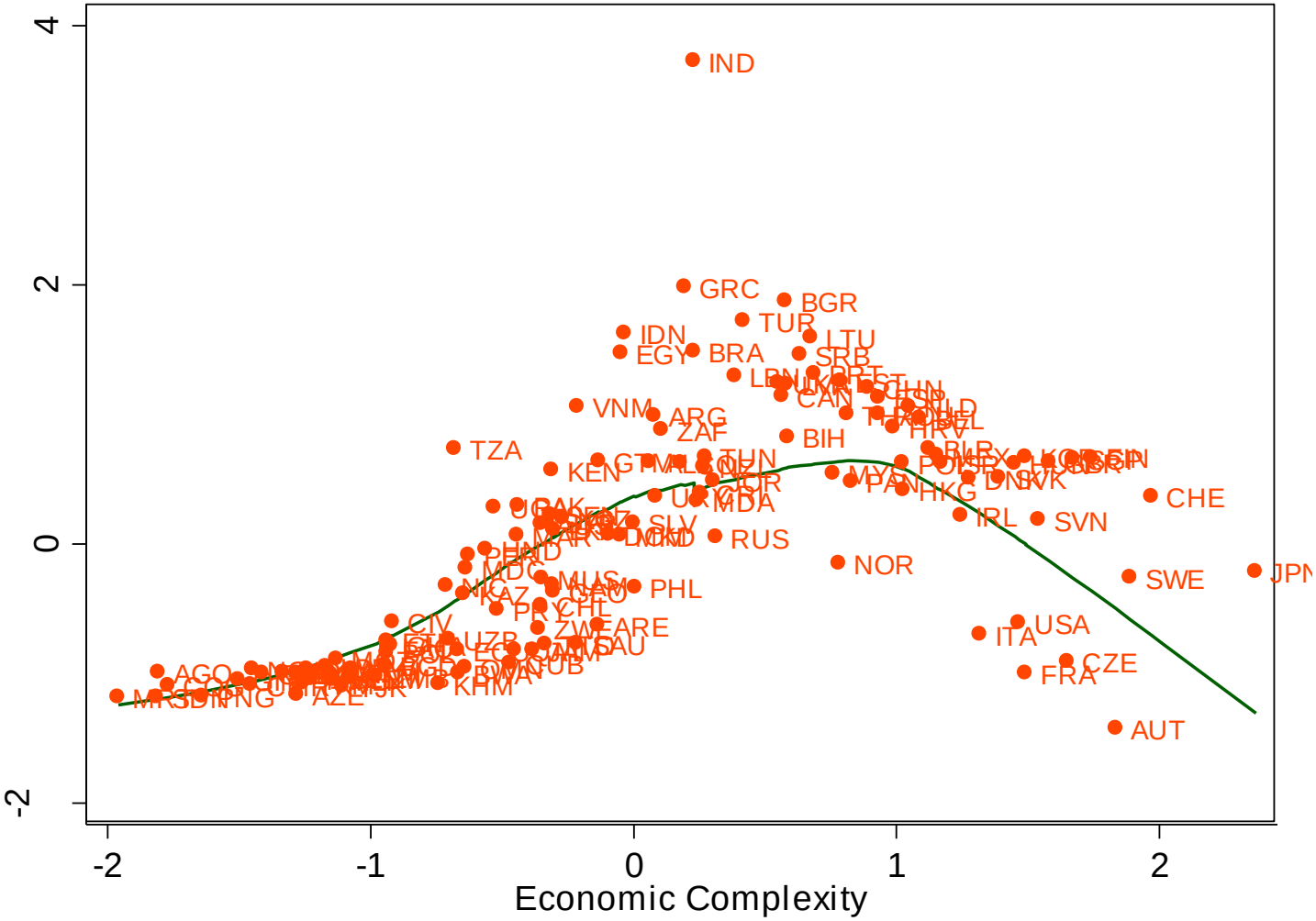
KHM

# 2008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Economic Complexity
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ARG
ZAF
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TZA
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TUN
MDA
RUS
SLV
PHL
NOR
IRL
SVN
CHE
SWE
JPN
USA
ITA
CZE
FRA
AUT
CIV
ZWE
ARE
AGO
KHM
AZE

# A puzzle

- Production is about putting “letters” together
- Technology has developed more letters and made products more complex, i.e. longer words
- So the world should be getting more convex
  - i.e. only the ones that have all the letters can get into business
- So what happened?
  - Global value chains
- GVCs imply trade in syllables, not words

# Why does it make progress easier?

- Because you don’t need to have all the letters required by the product to participate in production
  - You only need to make a syllable, not a whole word
  - You can get into production with fewer letters
- You can then add letters more parsimoniously

# A stylized story

# MOVING TECHNOLOGY:
# TOOLS, CODES AND KNOWHOW

HANJIN

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Deutsch

# Lift (force)

From Wikipedia, the free encyclopedia

*For other uses, see Lift (disambiguation).*

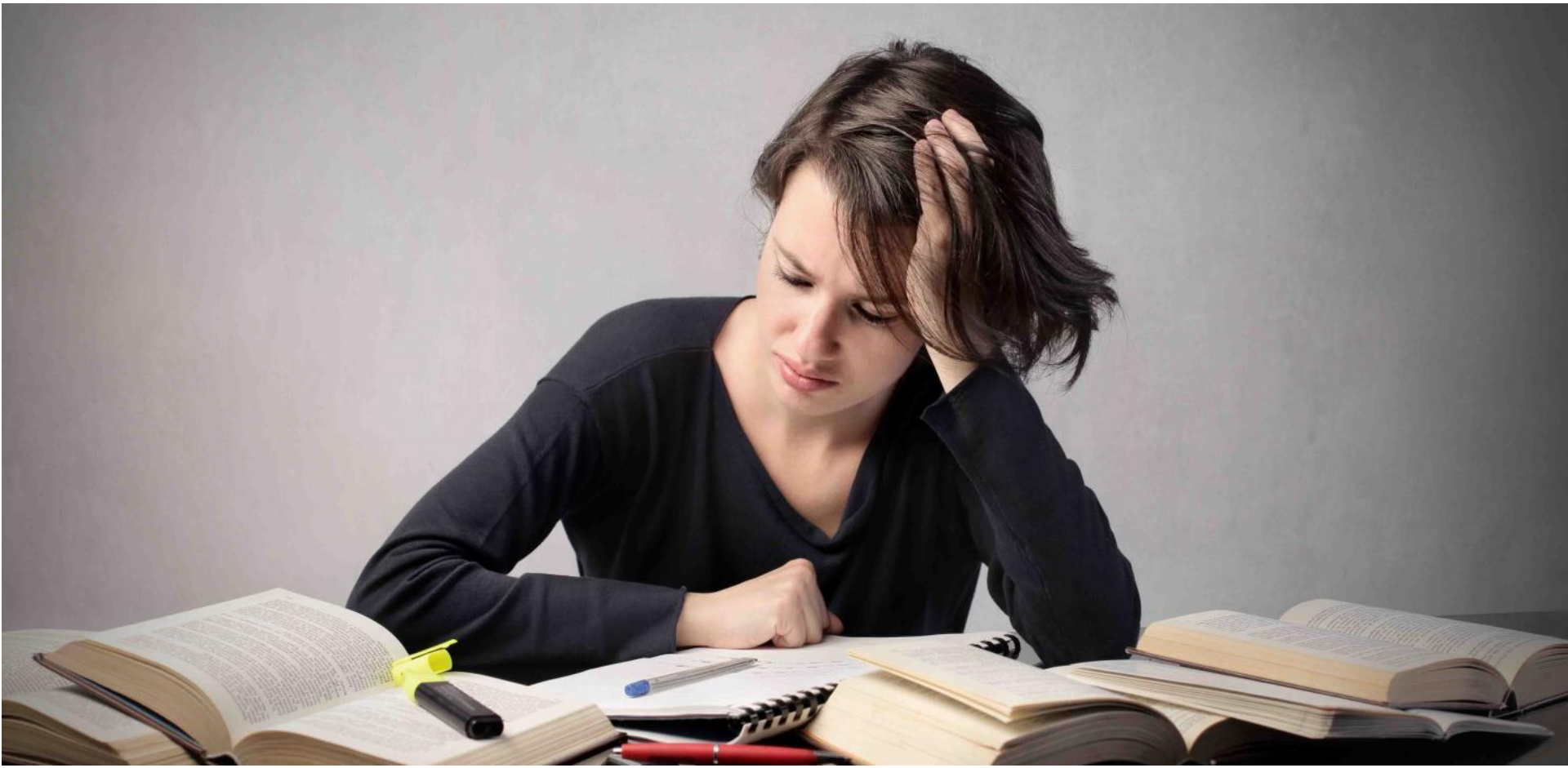
A fluid flowing past the surface of a body exerts a force on it. **Lift** is the component of this force that is perpendicular to the oncoming flow direction.[1] It contrasts with the drag force, which is the component of the surface force parallel to the flow direction. If the fluid is air, the force is called an aerodynamic force. In water, it is called a hydrodynamic force.

Boeing 747-8F landing

**Contents** [hide]

1 Overview
2 Simplified physical explanations of lift on an airfoil
2.1 Flow deflection and Newton's laws
2.1.1 Limitations of deflection/turning
2.2 Increased flow speed and Bernoulli's principle
2.2.1 Conservation of mass
2.2.2 Limitations of explanations based on Bernoulli's principle
3 Basic attributes of lift
3.1 Pressure differences
3.2 Angle of attack
3.3 Airfoil shape
3.4 Air speed and density
3.5 Lift coefficient
3.6 Pressure integration
4 A more comprehensive physical explanation
4.1 Lift involves action and reaction at the airfoil surface and is felt as a pressure difference
4.2 The airfoil affects the flow over a wide area around it
4.3 The pressure differences and the changes in flow speed and direction support each other in a mutual interaction
5 The understanding of lift as a physical phenomenon
6 Mathematical theories of lift
6.1 Navier-Stokes (NS) equations
6.2 Reynolds-Averaged Navier-Stokes (RANS) equations
6.3 Inviscid-flow equations (Euler or potential)
6.4 Linearized potential flow
6.5 Circulation and the Kutta-Joukowski theorem
6.6 Momentum balance in lifting flows
7 Lift of three-dimensional wings
8 Viscous effects: Profile drag and stalling

# Moving knowhow



# Migration

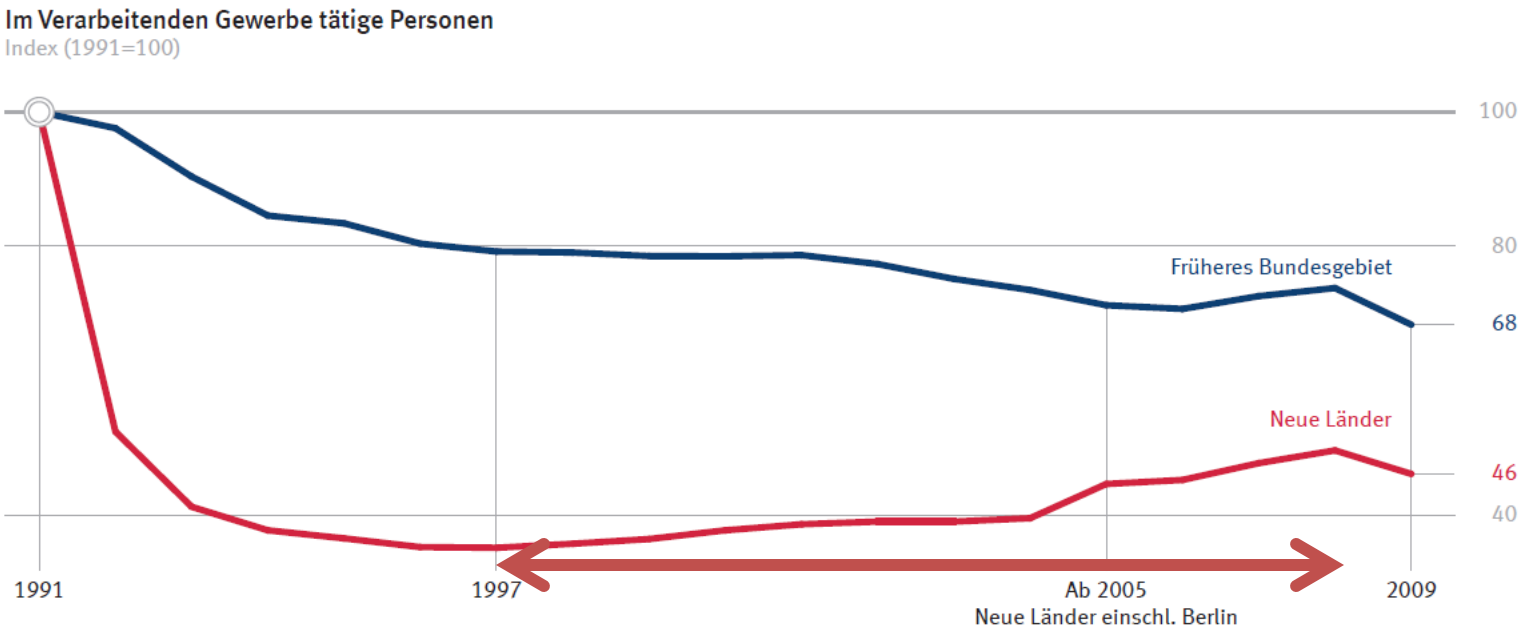
*Moving letters*

By Germany,_Federal_Republic_of_location_map_January_1957_-_October_1990.svg: TUBS Flag_of_East_Germany.svg: derivative work: Fry1989 (talk) 00:25, 26 January 2011 (UTC) [CC BY-SA 3.0 (http://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons

Photo Credit: Lear 21 at English Wikipedia

# De-industrialization

## Dramatischer Einbruch – Verarbeitendes Gewerbe

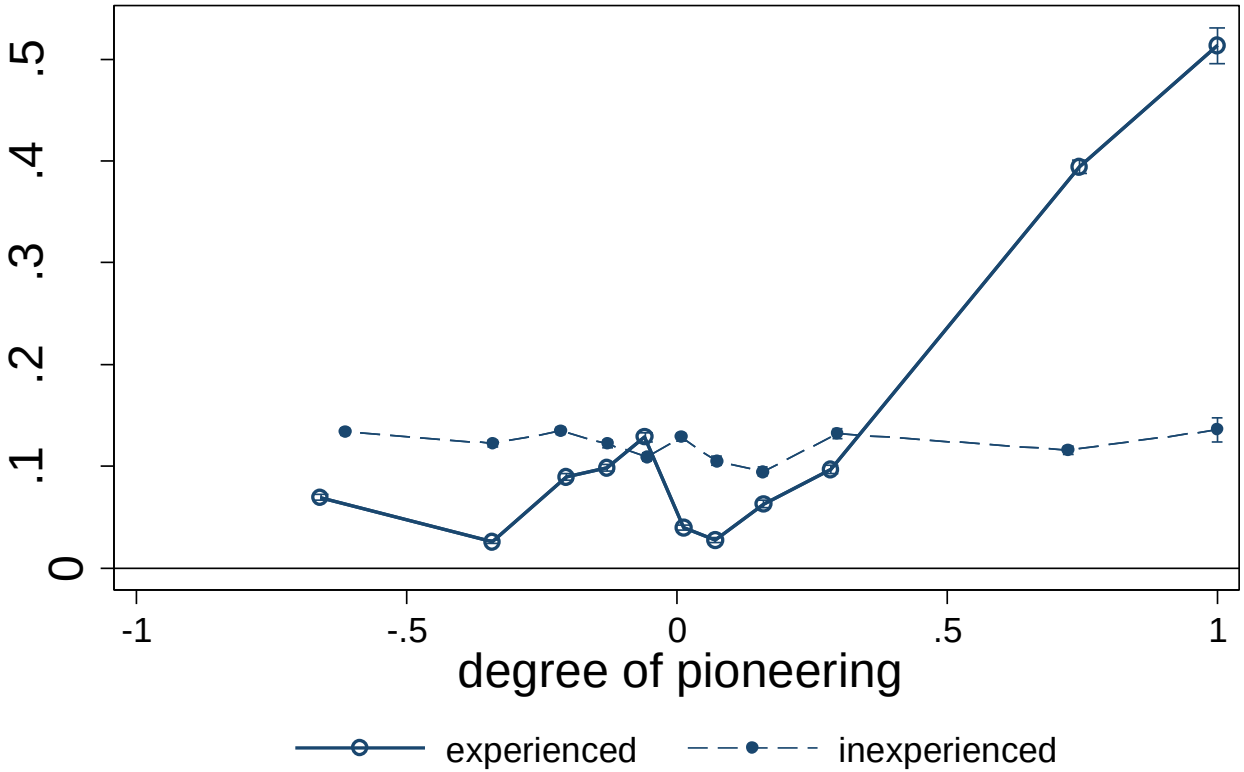



Re-industrialization

**Source:** Statistisches Bundesamt: 20 Jahre Deutsche Einheit

# Reindustrialization of East Germany

## The workforce of manufacturing pioneers in the East




**51% of experienced manufacturing workers were hired from West Germany**

Hausmann & Neffke (2019, RESPOL)

# More evidence from Albania and the former Yugoslavia

## Migration and Post-conflict Reconstruction: The Effect of Returning Refugees on Export Performance in the Former Yugoslavia

No Thumbnail

View/Open
120.pdf (2.852Mb)

Citation
Bahar, Dany, Andreas Hauptmann, Cem Özgüzel, and Hillel Rapoport. "Migration and Post-conflict Reconstruction: The Effect of Returning Refugees on Export Performance in the Former Yugoslavia." CID Research Fellow and Graduate Student Working Paper Series 2019.119, Harvard University, Cambridge, MA, November 2019.

Abstract
During the early 1990s Germany offered temporary protection to over 700,000 Yugoslavian refugees fleeing war. By 2000, many had been repatriated. We exploit this natural experiment to investigate the role of migrants in post-conflict reconstruction in the former Yugoslavia, using exports as outcome. Using confidential social security data to capture intensity of refugee workers to German industries–and exogenous allocation rules for asylum seekers within Germany as instrument—we find an elasticity of exports to return migration between 0.08 to 0.24. Our results are stronger in knowledge-intensive industries and for workers in occupations intensive in

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## Welcome home in a crisis: Effects of return migration on the non-migrants' wages and employment

CrossMark

Ricardo Hausmann[a], Ljubica Nedelkoska[b,*]

[a] Center for International Development at Harvard University and Santa Fe Institute, USA
[b] Center for International Development at Harvard University, 79 JFK St., Center for International Development at Harvard University, 02138 MA, USA

# Transient mobility

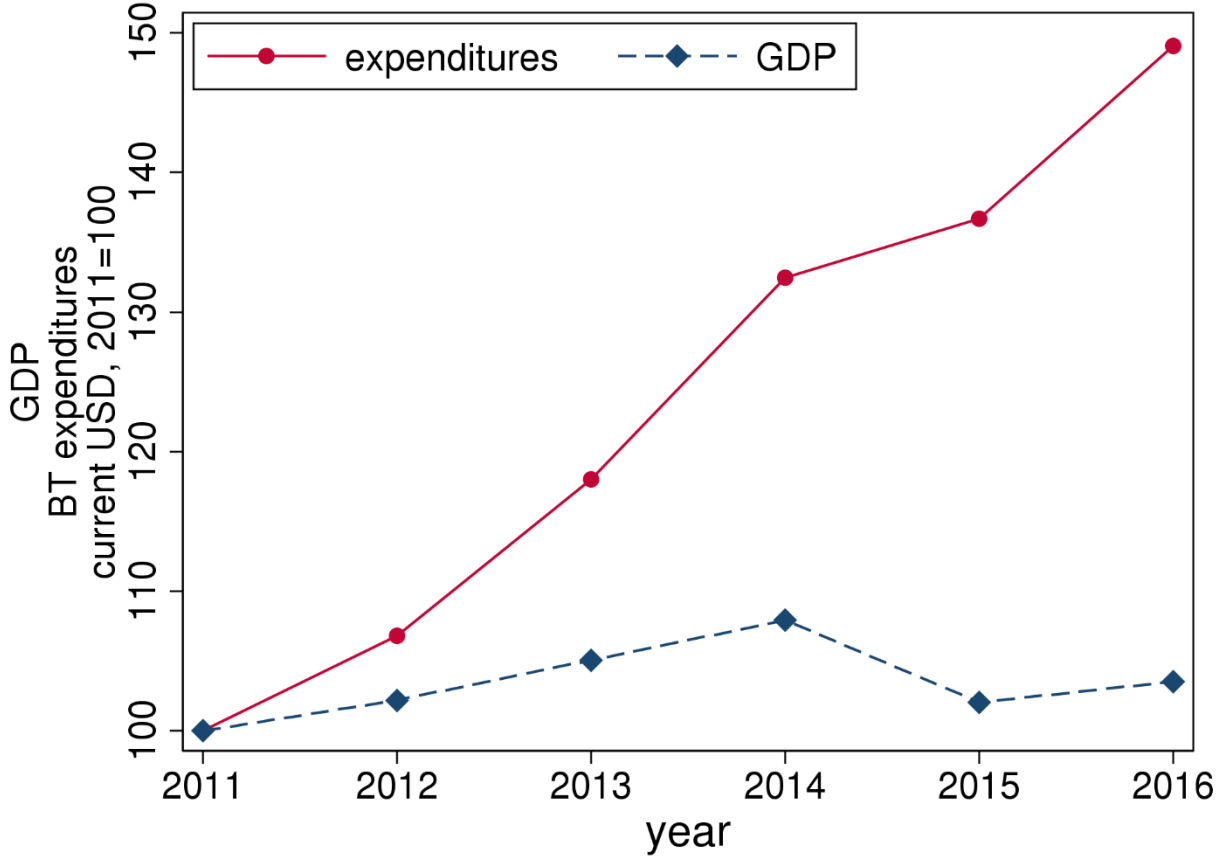
Business Travel as a conduit of knowledge transfer: evidence from foreign expenditures by corporate payment cards

**Michele Coscia, Frank Neffke, Ricardo Hausmann**

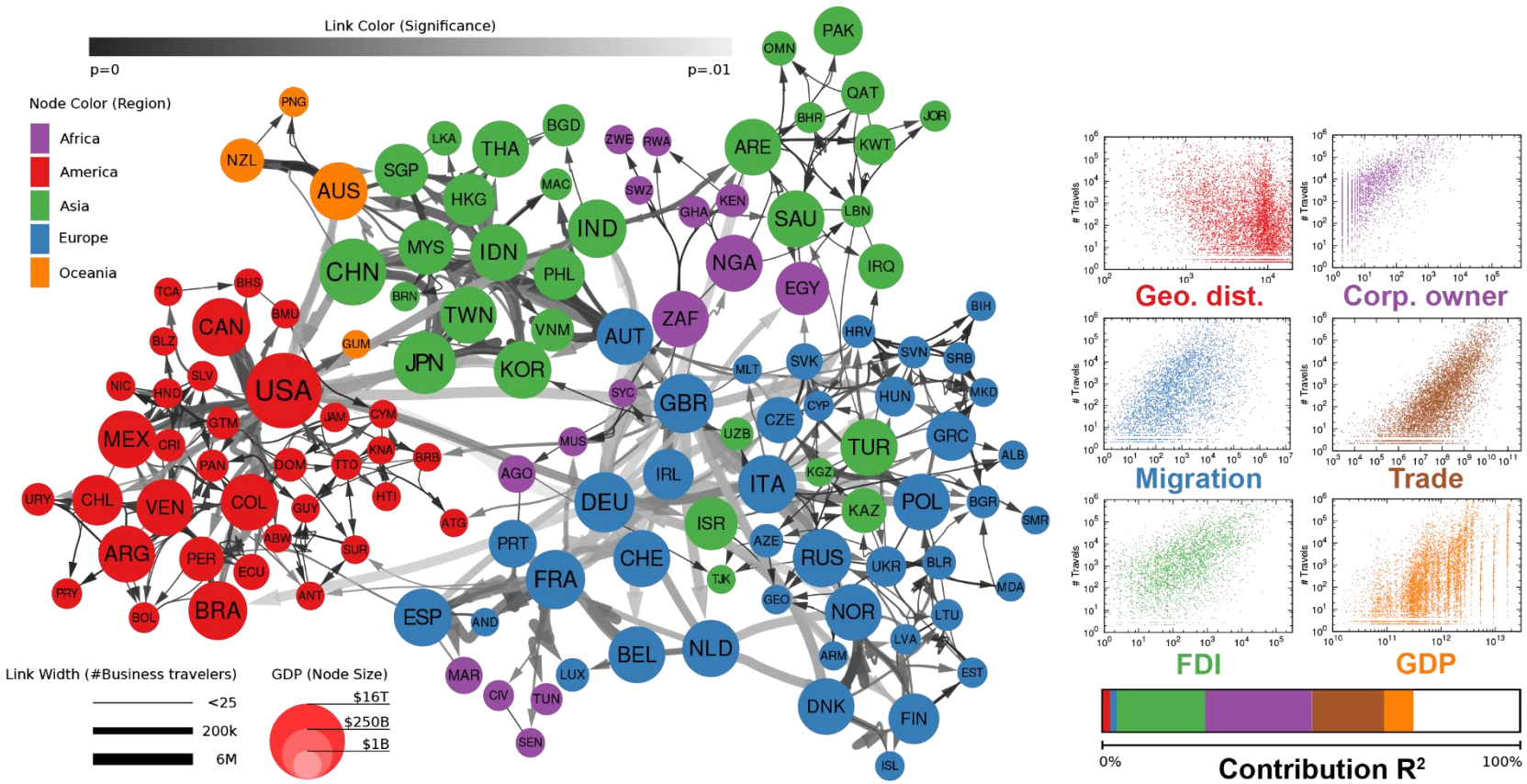
**(2020, Nature Human Behavior)**

Credits: Left: thinkpanama @ www.flickr.com/photos/23065375@N05/2247355466
Right: Image by naalexander from Pixabay

# Growth of business travel



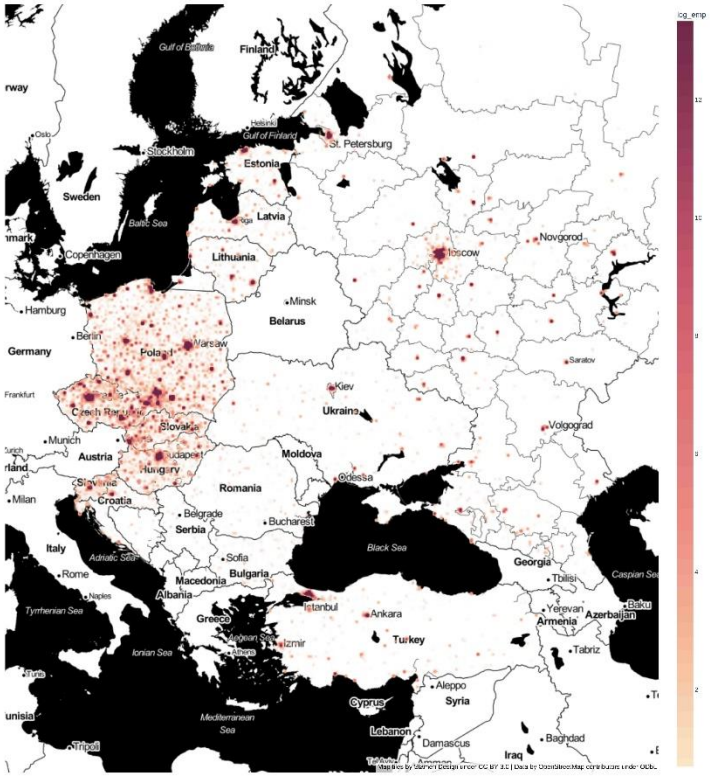
# Business travel network



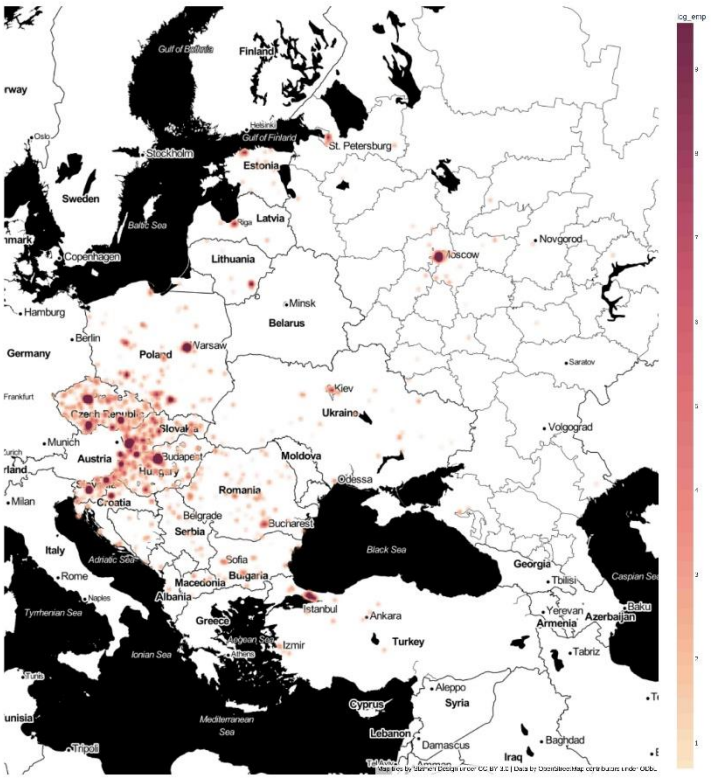
# Geographic implications

What does this mean for the CESEE region?

# All economic activity

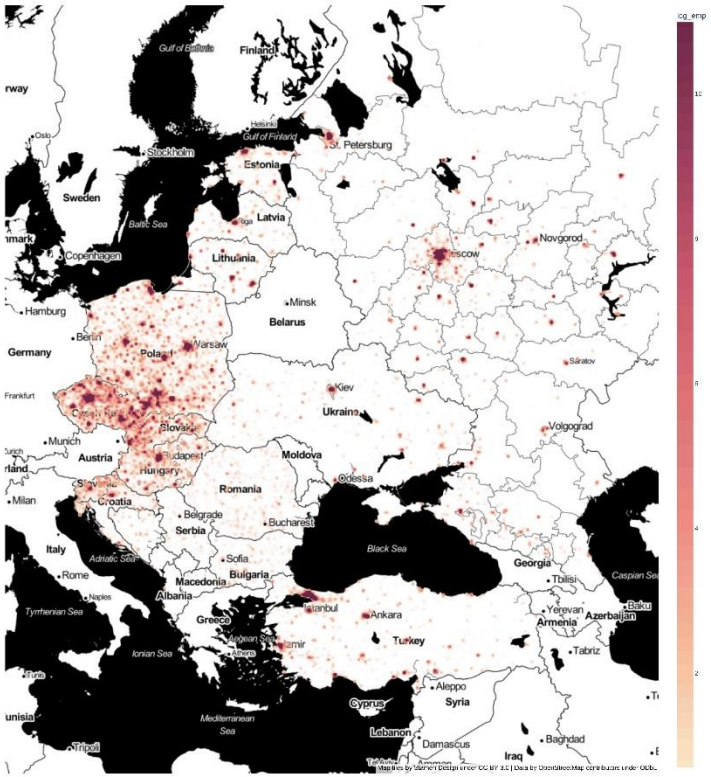



# FDI Austria




Hartog, Hausmann and Neffke, 2021

# Manufacturing

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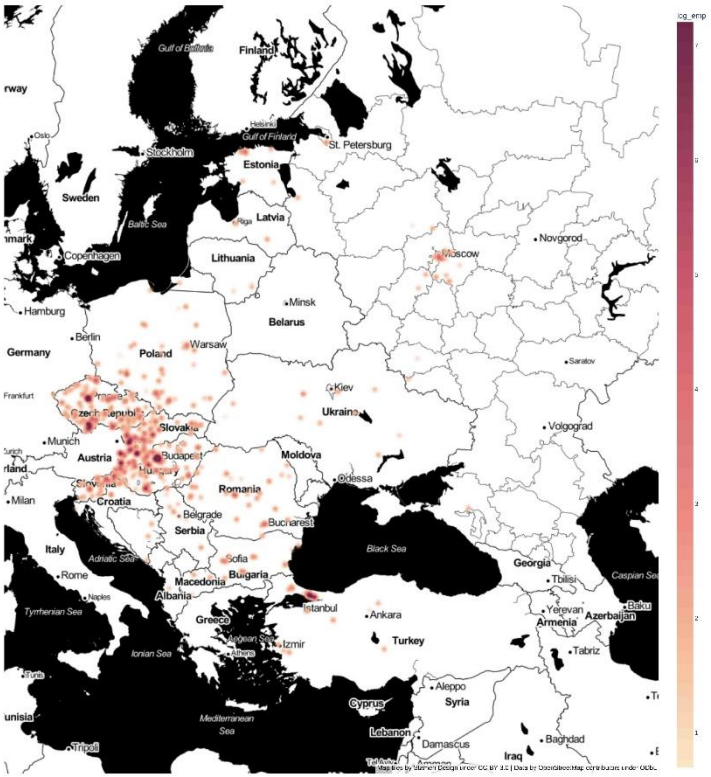
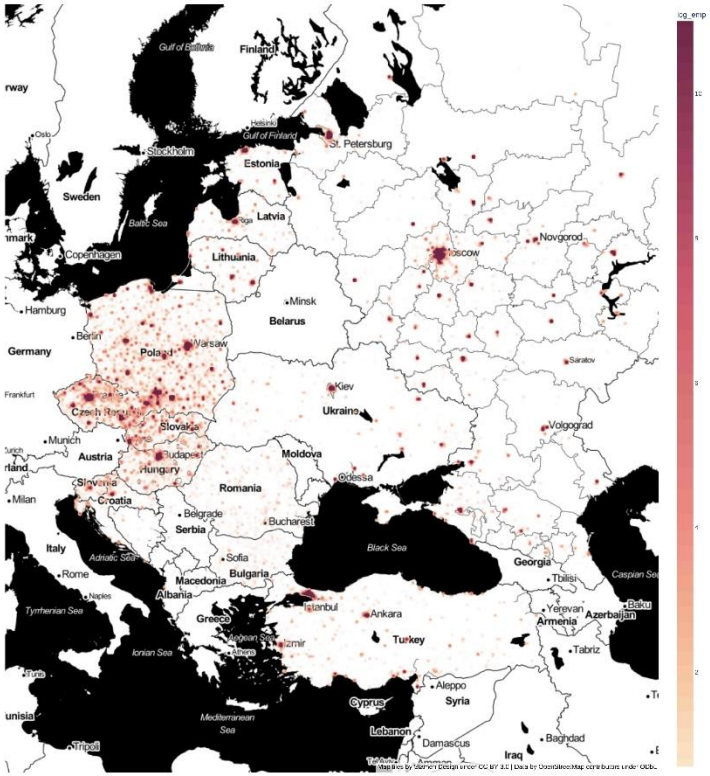



Hartog, Hausmann and Neffke, 2021

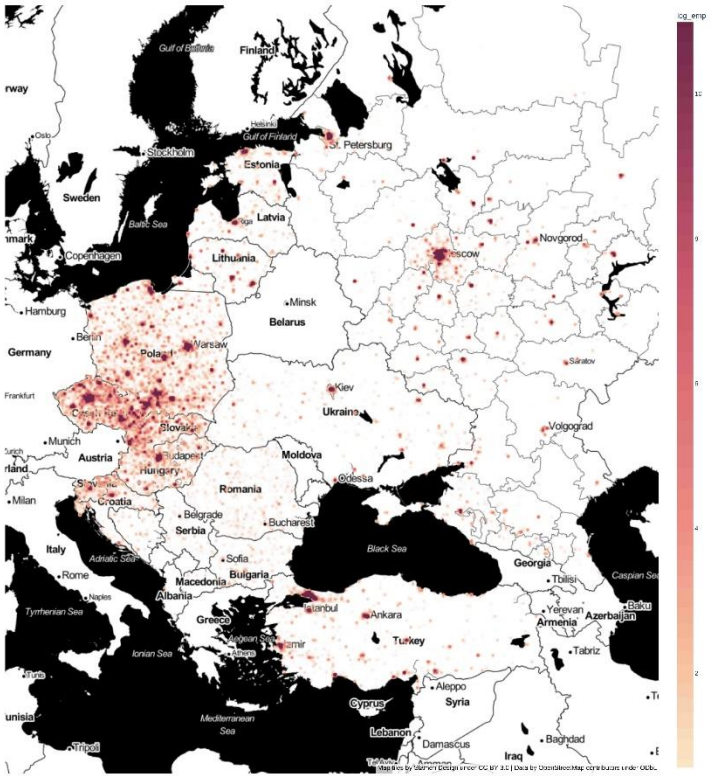
Retail & wholesale



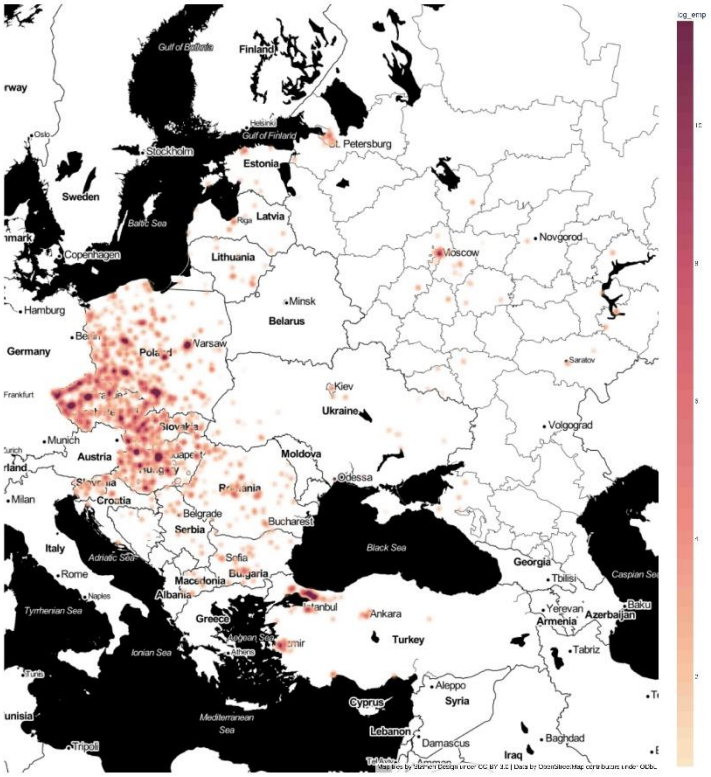

FDI Austria

Hartog, Hausmann and Neffke, 2021

# Manufacturing

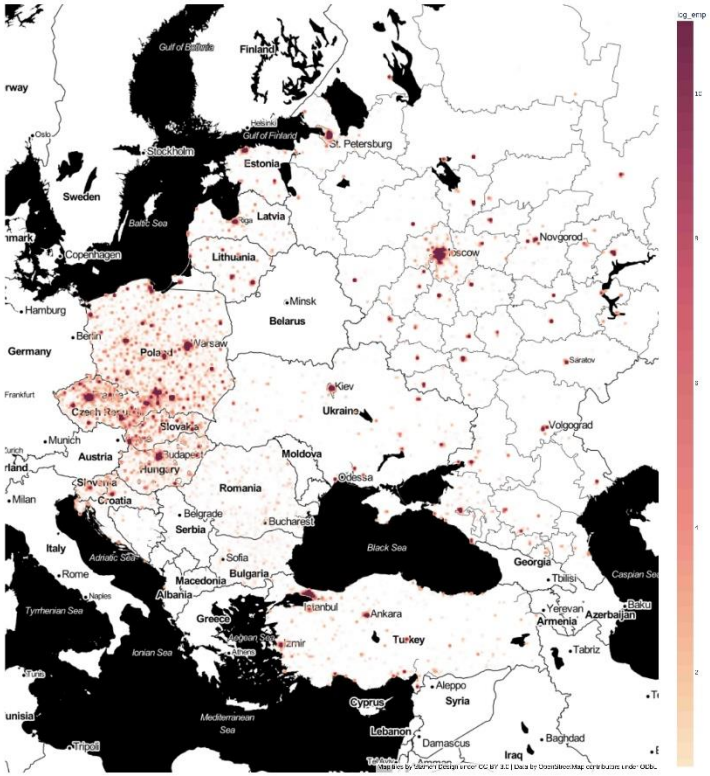



# FDI Germany

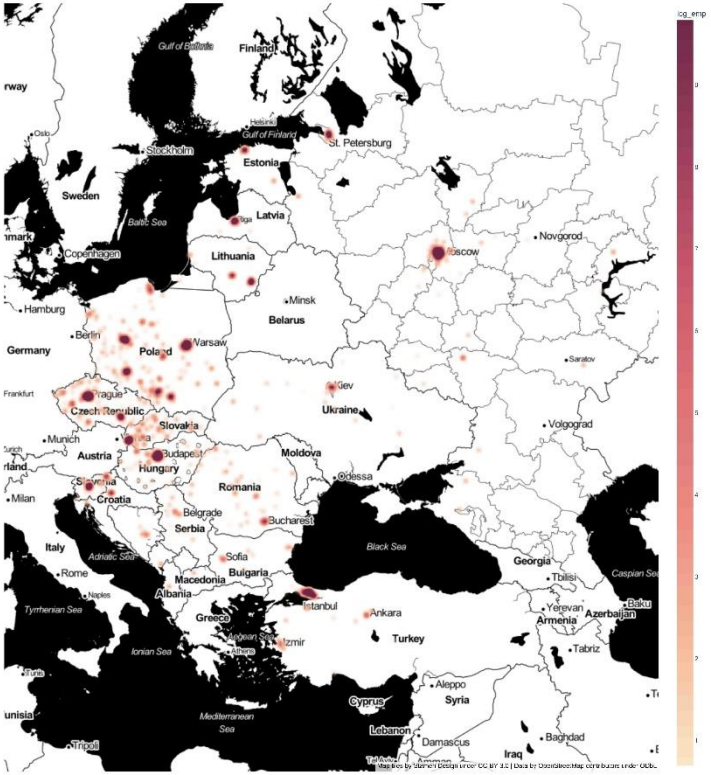



Hartog, Hausmann and Neffke, 2021

## Retail & wholesale

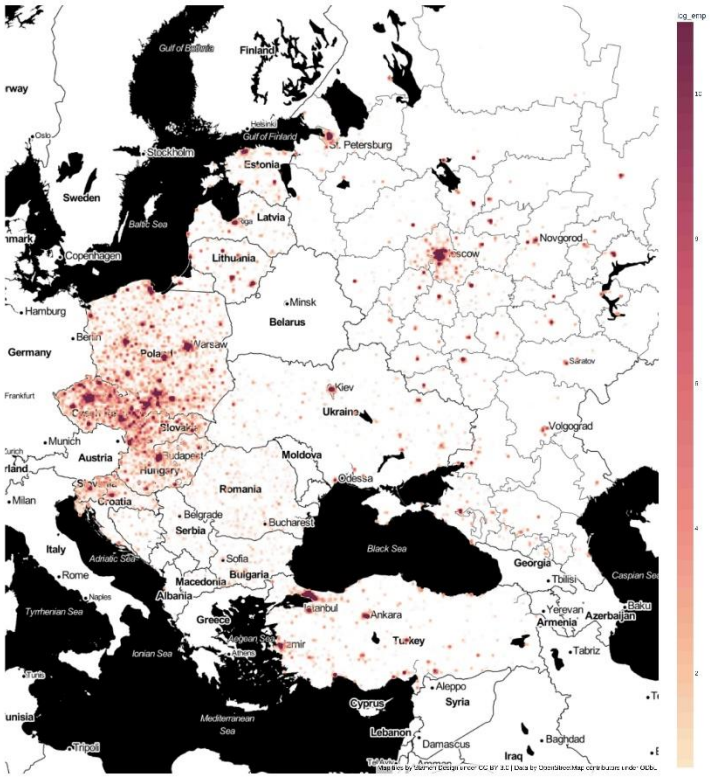



## FDI Germany

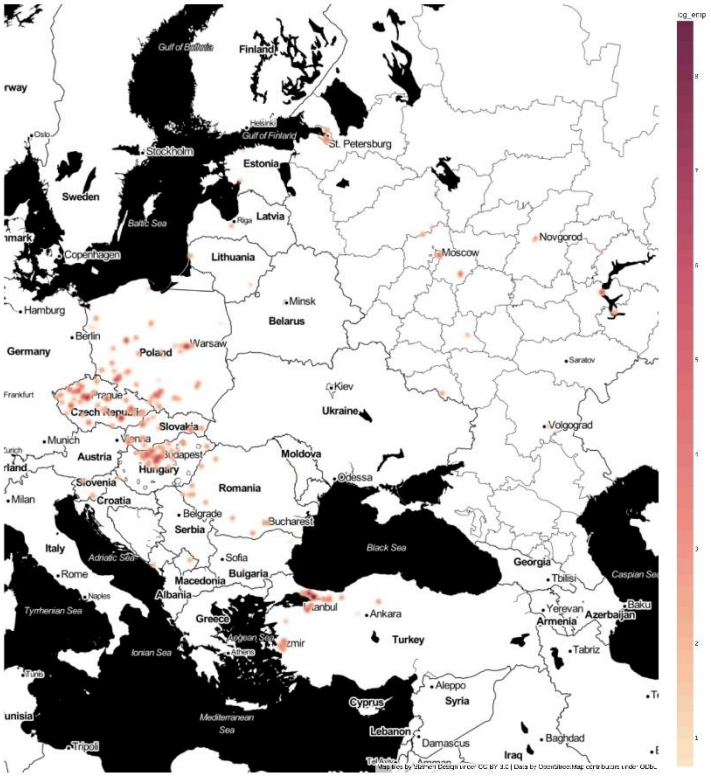



Hartog, Hausmann and Neffke, 2021

Manufacturing

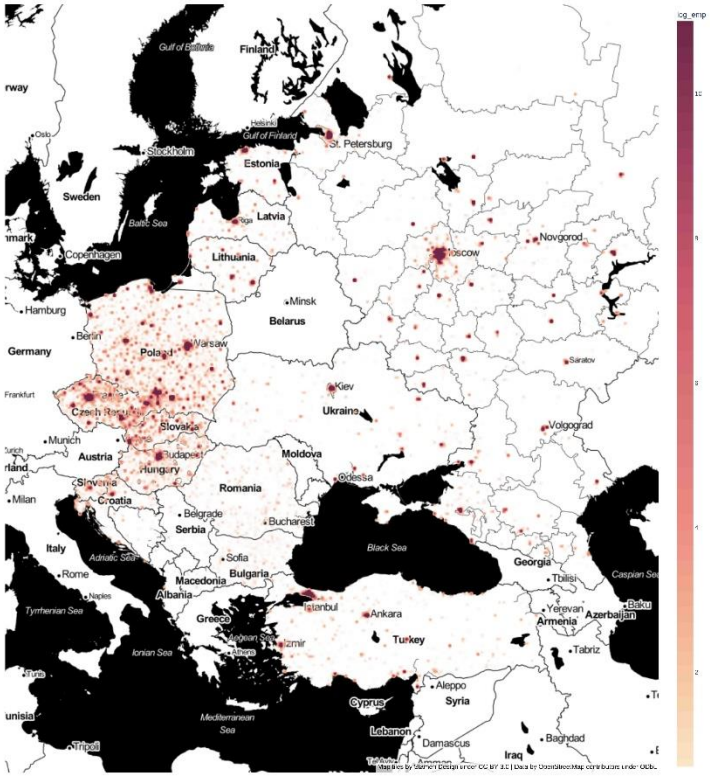



FDI Japan



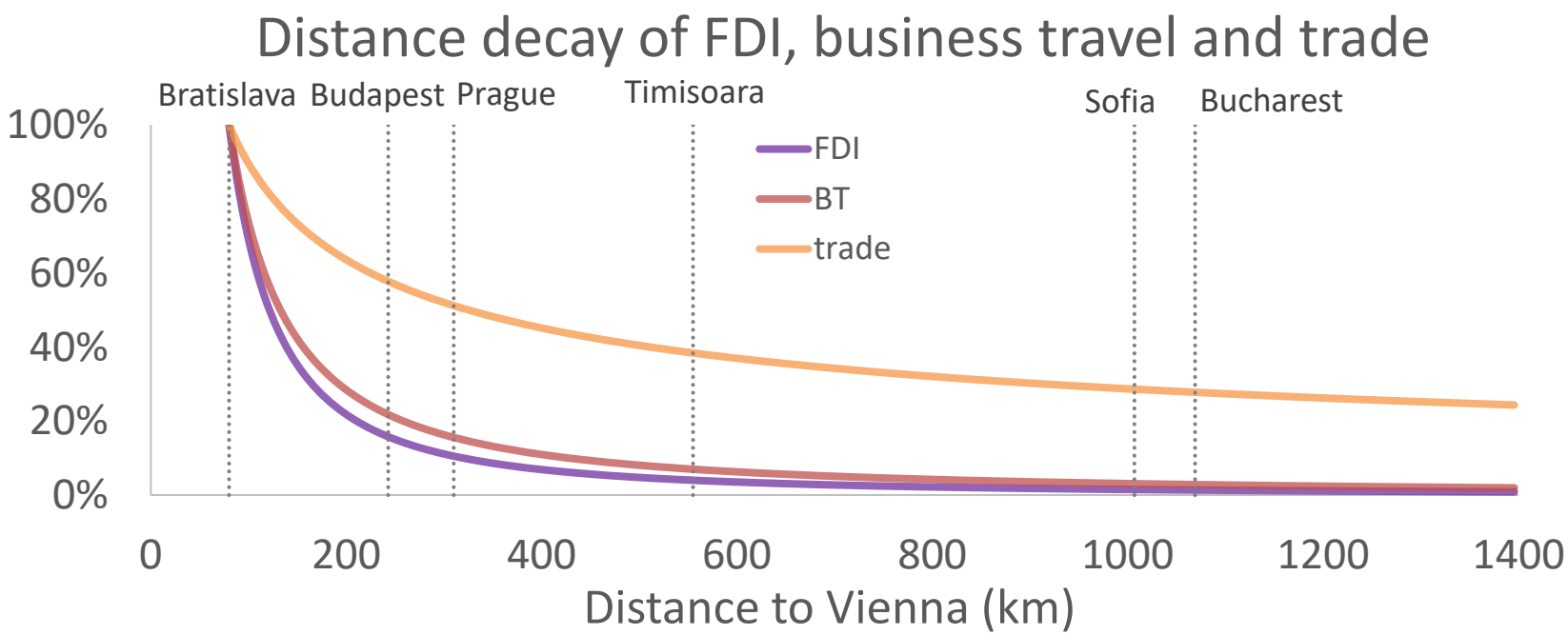

Hartog, Hausmann and Neffke, 2021

## Retail & wholesale




## FDI Japan

Hartog, Hausmann and Neffke, 2021


Distance decay of FDI, business travel and trade
Bratislava
Budapest
Prague
Timisoara
Sofia
Bucharest
FDI
BT
trade
100%
80%
60%
40%
20%
0%
0
200
400
600
800
1000
1200
1400
Distance to Vienna (km)

# This is true for the whole world and more serious for more complex industries

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Journal of International Economics

Volume 125, July 2020, 103311

Full length articles

## The hardships of long distance relationships: time zone proximity and the location of MNC's knowledge-intensive activities ☆

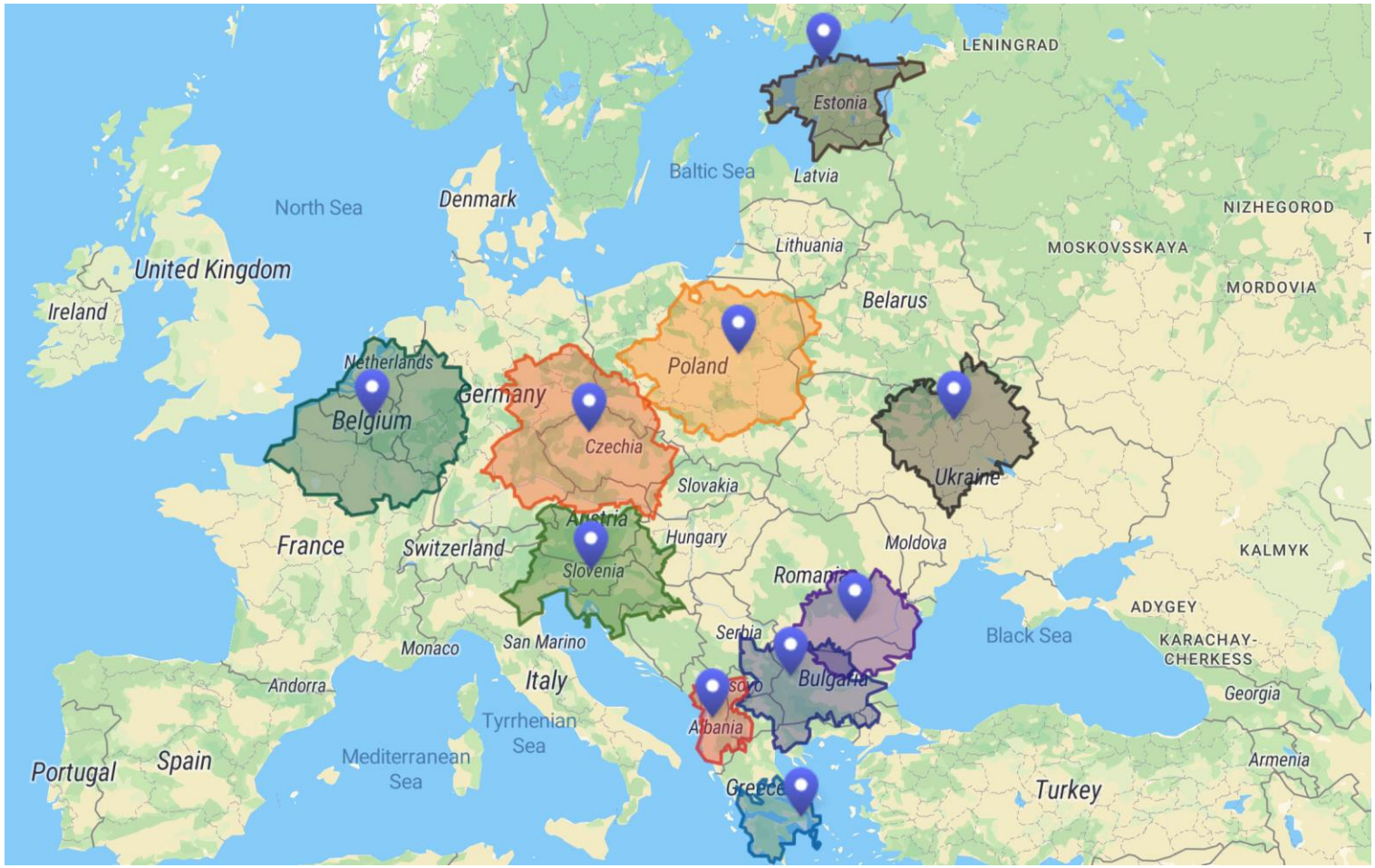
Dany Bahar ✉

# Spatial reach of Vienna

*driving distance: 2/4/8 hours*

# Spatial reach of selected cities

*driving distance: 4 hours*



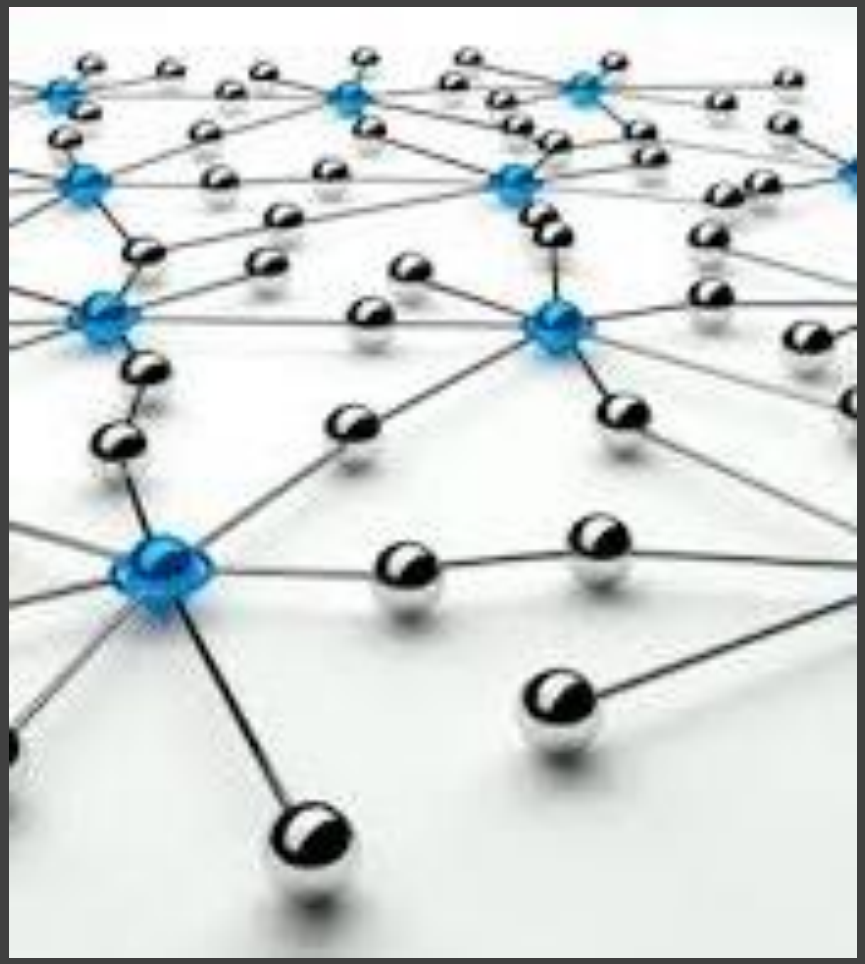
# Policy implications

- GVCs allow for the growth of complexity without its downsides
  - It allows for trade in syllables
  - Makes progress easier for less developed places
    - They can participate in production with fewer capabilities
    - They can accumulate capabilities more parsimoniously

# Policy implications

- But GVCs require more coordination
  - More complexity, more coordination
- Participation requires moving the brains of experienced workers – i.e., workers with know-how
  - Migration policies are key:
- Coordination requires business travel, which decays rapidly with distance
- FDI declines rapidly with distance, especially in manufacturing and in more complex activities

# Policy implications

- Distance is not dead. It is more important for GVCs than for trade
  - Transport infrastructure is key, especially East and South of Vienna
- Industries think of their chains, but places must think of being a node in many chains.
  - They should focus on their position in the network, not just in individual value chains

# Value chains or value networks?