NEW

Els Opuscles del CREI

num. 48

May 2023

Trade and Urbanization: Evidence from Hungary

Dávid Krisztián Nagy

CREi

Centre de Recerca
en Economia Internacional

The Centre de Recerca en Economia Internacional (CREI) is a research centre sponsored by the Universitat Pompeu Fabra (UPF) and the Generalitat de Catalunya. It is located at the Ciutadella campus of the UPF in Barcelona.

CREI's objective is to promote research in international economics and macroeconomics subject to the highest standards of academic scholarship.

Els *Opuscles del CREI* are the instruments for the diffusion of CREI's research beyond the academic world. Each *Opuscle*, aimed at a general public, gathers together conclusions and observations of specialized papers published, or about to be published, in professional journals. The opinions stated in *Els Opuscles del CREI* are the sole responsibility of the authors.

Pdf version of this *Opuscle* and all the others *Opuscles del CREI* can be downloaded at: www.crei.cat/opuscles.

Editor:
Luca Fornaro

Published by: CREI
Ramon Trias Fargas, 25-27 - 08005 Barcelona
Tel. 93 542 26 68

Design: NordGràfic

ISSN: 2604-2266

Trade and Urbanization: Evidence from Hungary

Dávid Krisztián Nagy

Introduction

Urbanization can foster country development and increase welfare, as various papers have argued. It has also been shown that these advantageous effects of urbanization might be more pronounced in early stages of a country's development. Thus, urbanization may have major implications for individuals' wellbeing, particularly in the developing world. But what are the factors that lead to urbanization? One obvious candidate is industrialization. There are, in fact, first-order empirical facts supporting the link between industrialization and urbanization. In Europe, the share of population living in cities started to grow rapidly at the time of the industrial revolution, while it hardly changed for centuries before industrialization. Other first-order facts, however, go against the theory of urbanization induced by industrialization. The last few decades saw dramatic urbanization but little industrialization in various developing countries. Mumbai is the 9th largest city of the world today. Lagos is the 14th, while Cairo is the 16th.

These three cities have something in common, besides the fact that they are located in developing countries. In particular, all three of them are at places where major trading routes intersect. Trade naturally fosters the concentration of people as exchanging goods necessitates physical contact. As the scale of trade increases, people have an increasing incentive to not only go to the market every week, but move to where the market is. This is how cities can form around markets; this is how trade can foster urbanization.

The effect of trade on urbanization: An empirical challenge

Measuring the extent to which trade can foster urbanization is challenging, however. This is because the reverse relationship also holds: urbanization can foster trade. Mumbai may have become a city for different reasons than trade. But now that it is a city of several million people, these people will start trading with each other. In other words, trade can be a consequence, not a cause, of urbanization.

To address this challenge, one needs to find a historical episode characterized by large-scale changes in trade that are not due to urbanization. What could be such an episode? In economic geography, it is a well-known fact that country borders have large effects on trade. John McCallum documented in 1995 that Canadian provinces trade 20 times as much with each other as with the United States, simply because Canada and the U.S. are separated by a border. As a result, changes in country borders can be used to isolate the effect of trade on urbanization from its reverse since they induce large-scale changes in trade that are not due to urbanization.

A useful historical episode: Hungary's border changes

In my paper (Nagy, 2022), I argue that the border changes of Hungary after the First World War offer such a historical episode. Hungary's borders were completely redrawn by the Allied Powers in 1920, and the country's new border did not correspond to prior political, economic or ethnic boundaries. Therefore, it is reasonable to assume that trade between the opposite sides of the new border was widespread before 1920. At the same time, political conflict between Hungary and its new neighbors led to little trade across the border in the years after 1920. As a result, Hungarian counties in the new border's close proximity experienced a dramatic decrease in trade with nearby locations that ended up on the opposite side of the border.

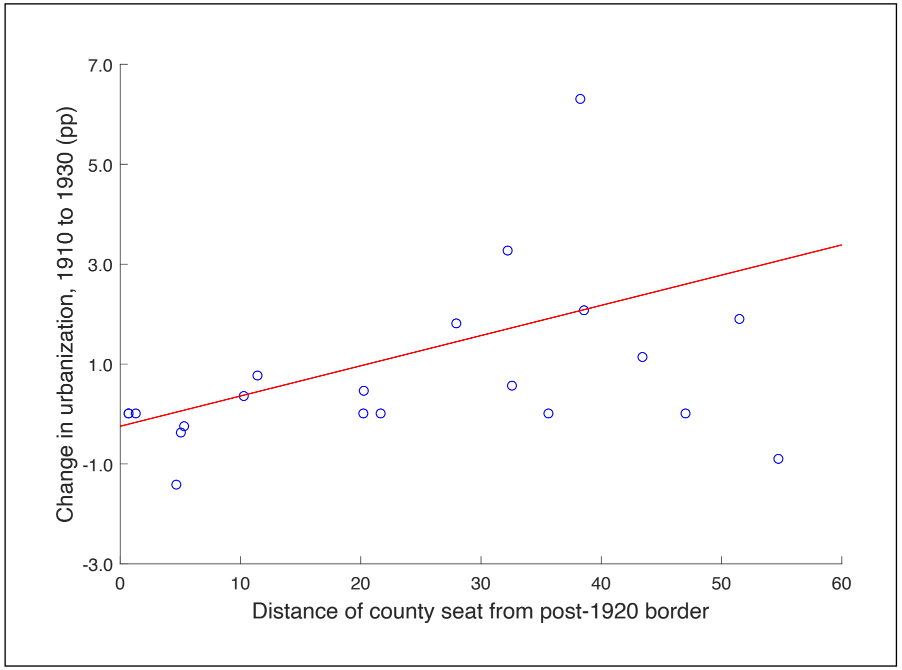
If trade fosters the process of urbanization, then decreases in trade must slow down this process. Did counties near the new border experience a slowdown in urbanization? To see whether this is the case, I use population data from the censuses of 1910 and 1930 to compute how much the share of population living in cities changed in each Hungarian county between these two years. Figure 1 plots this change in urbanization against distance between the *county seat* (the seat of the county's government) and the new border. Each dot in the figure corresponds to a county. It is clear from the figure that urbanization became slower in counties closer to the new border; in fact, urbanization even decreased in some of these counties. This is despite the fact that, before 1910, the average increase in urbanization was the same in these counties as in counties farther away from the new border.

A model of trade and urbanization

How did this slowdown in urbanization affect the economy? Unfortunately, the censuses do not provide information on economic output. Therefore, I develop a structural model in Nagy (2022) to measure the economic impact of the border change. In the model, people choose where to live based on two factors. The first factor is proximity to markets. Markets are available at a given set of locations, and trade can only happen at markets. If one chooses a location far from a market, it will be costly to go to the market and trade. The other factor influencing people's location decisions is where they like to live. This is driven by idiosyncratic considerations, such as people enjoying certain natural amenities or wanting to live near their family. If trade plays little role in the economy, then this second force dominates the first, implying that people disperse across space. As trading opportunities improve, however, the first factor starts playing a larger and larger role. People move closer to markets, which fosters urbanization around these locations. However, this is less true near borders, where trading opportunities are worse in general. Thus, urbanization will be less pronounced near borders, just like in the data.

The model can be used to measure the economic impact of the border change on any Hungarian location. The results show that the border change decreased Hungarian residents' real income by 15.55% on average. As expected, the losses were more severe near the new border, where trade and urbanization fell the most. These findings confirm that imposing barriers on trade can dramatically decrease both urbanization and individuals' well-being. An important warning at a time when policies aimed at cutting trade are regularly on the table among policymakers.

Figure 1. Urbanization decreased near the new border



Opuscles already published

1. **Reconsidering Spanish unemployment**
Ramon Marimon (June 97)
2. **Reducing unemployment. At any cost?**
Fabrizio Zilibotti (December 97)
3. **Capital and labor taxes, macroeconomic activity, and redistribution**
Albert Marcet (November 98)
4. **The lender of last resort in today's financial environment**
Xavier Freixas (November 99)
5. **Why does the public sector grow? The role of economic development, trade and democracy**
Carles Boix (November 99)
6. **Gerontocracy and social security**
Xavier Sala-i-Martin (July 2000)
7. **The political viability of labour market reform**
Gilles Saint-Paul (December 2000)
8. **Are EU policies fostering growth and reducing regional inequalities?**
Fabio Canova (May 2001)
9. **Agglomeration effects in Europe and the USA**
Antonio Ciccone (September 2001)
10. **Economic polarization in the Mediterranean basin**
Joan Esteban (May 2002)
11. **How do households invest their wealth?**
Miquel Faig (October 2002)
12. **Macroeconomic and distributional effects of social security**
Luisa Fuster (April 2003)
13. **Educating intuition: A challenge for the 21st century**
Robin M. Hogarth (September 2003)
14. **Capital controls in post-war Europe**
Hans-Joachim Voth (April 2004)
15. **Taxation of financial intermediaries**
Ramon Caminal (September 2004)
16. **Ready to take risks? Experimental evidence on risk aversion and attraction**
Antoni Bosch-Domènech / Joaquim Silvestre i Benach (November 2005)
17. **Social networks and labour market outcomes**
Antoni Calvó-Armengol (January 2006)
18. **The effects of employment protection in Europe and the USA**
Adriana D. Kugler (February 2007)
19. **Urban sprawl: Causes and consequences**
Diego Puga (January 2008)
20. **Western European long term growth, 1830-2000: Facts and issues**
Albert Carreras and Xavier Tafunell (June 2008)
21. **Overcoming coordination failure in firms and organizations: Experimental evidence**
Jordi Brandts (March 2009)
22. **The misallocation of talent**
José V. Rodríguez Mora (May 2009)
23. **Complementarities in innovation strategy and the link to science**
Bruno Cassiman (September 2009)
24. **Simple mechanisms to resolve conflicting interests and to share the gains**
David Pérez-Castrillo (November 2009)
25. **Transfer of university innovations**
Inés Macho-Stadler (January 2010)
26. **Firing costs, dismissal conflicts and labour market outcomes**
Maia Güell (June 2010)
27. **Inequality and tax progressivity**
Juan Carlos Conesa (October 2010)
28. **Happiness economics**
Ada Ferrer-i-Carbonell (May 2011)
29. **School choice in Spain: Theory and evidence**
Caterina Calsamiglia (September 2011)
30. **Corporate social responsibility and social welfare. How to promote socially responsible business strategies**
Juan-José Ganuza (March 2012)
31. **The effectiveness of foreign aid: From the macroeconomic perspective to the experimental evaluation**
José G. Montalvo / Marta Reynal-Querol (June2012)
32. **Fiscal policy in the European Monetary Union**
Evi Pappa (September 2012)
33. **How important are capital markets Imperfections in determining firm decisions and aggregate fluctuations?**
Andrea Caggese (November 2012)
34. **Globalization, technology and inequality**
Gino Gancia (April 2013)
35. **Credit cycles and systemic risk**
José-Luis Peydró (December 2013)
36. **The labour market impact of immigration**
Albrecht Glitz (June 2014)
37. **Density forecasts in economics and policymaking**
Barbara Rossi (September 2014)
38. **Local labor markets**
Jan Eeckhout (December 2014)
39. **Globalization and aggregate fluctuations: The role of international trade and large firms**
Julian di Giovanni (February 2015)
40. **The social effects of divorce laws**
Libertad González (June 2015)
41. **Why do people buy private health insurance in the presence of a public option?**
Pau Olivella (July 2016)
42. **Health interventions in low income countries: A (not so) low hanging fruit?**
Alessandro Tarozzi (October 2016)
43. **Media failures and media markets**
Fabrizio Germano (January 2017)
44. **Mass media and its influence on behaviour**
Ruben Enikolopov and Maria Petrova (December 2017)
45. **Measures of rationality and welfare for behavioural decision-makers**
Jose Apesteguia (July 2018)
46. **Optimal transport network in spatial equilibrium**
Edouard Schaal (December 2019)
47. **Ratings, securitization, and credit supply**
By Brendan Daley, Brett Green, and Victoria Vanasco (February 2022)
48. **Trade and urbanization: Evidence from Hungary**
Dávid Krisztián Nagy (May 2023)

Dávid Krisztián Nagy is a Junior Researcher at Centre de Recerca en Economia Internacional (CREI), an Adjunct Professor at Universitat Pompeu Fabra (UPF) and an Affiliated Professor at the Barcelona School of Economics (BSE). He has been a Visiting Scholar at the Minneapolis Fed Opportunity and Inclusive Growth Institute, a Visiting Professor at Columbia University, and a Peter B. Kenen Fellow at Princeton University. He obtained his PhD in Economics from Princeton University in 2016, under the supervision of Esteban Rossi-Hansberg. His research focuses on international trade and economic geography. In his papers, he aims at developing quantitative structural tools and combining them with data to examine the drivers of the spatial distribution of economic activity. He has received the Robert E. Lucas Jr. Prize for his paper The Geography of Developmen*t* (joint with Klaus Desmet and Esteban Rossi-Hansberg). He is a Co-Editor of the *Regional Science and Urban Economics*, a Research Affiliate at CEPR and a Research Network Affiliate at CESifo.

CREi
Centre de Recerca
en Economia Internacional

Academic Unit of the BSE Barcelona School of Economics

Ramon Trias Fargas, 25-27 - 08005 Barcelona
Tel: 93 542 26 68
E-mail: crei@crei.cat
http://www.crei.cat

upf. Universitat Pompeu Fabra Barcelona

CERCA Research Centres of Catalonia

Generalitat de Catalunya