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Fields

Economics of Innovation, Labor Economics, Economic History

References

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Prof. Joseph Ferrie
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Position

Postdoctoral Researcher, Northwestern University, since 2023

Education

Ph.D., Economics, Bocconi University, 2023
Dissertation: Essays in the Economics of Innovation
Committee: Mara P. Squicciarini (Chair), Erika Deserranno, Joseph-Simon Görlach
M.A., Economics, Scuola Superiore Sant'Anna, 2019
M.Sc., Economics, Scuola Superiore Sant'Anna and University of Pisa, 2018
B.A., Economics, University of Pisa, 2016

Job Market Paper

Return Innovation. The Knowledge Spillovers of the British Migration to the United States, 1870–1940, with Gaia Dossi

How does innovation diffuse across countries? In this paper, we document that out-migration generates a flow of technology from the country of destination to the country of origin of migrants. During the Age of Mass Migration, nearly four million British immigrants settled in the US. We construct a novel individual-level dataset linking British immigrants in the US to the UK census, and we digitize the universe of UK patents over 1853–1899. Through a new shift-share instrument for bilateral migration and a triple-differences design, we document that exposure to US technology through migrant ties contributes to the diffusion of innovation to the UK in 1870–1940. Using high-dimensional text analysis, we find that migrant ties promote technology transfer, but they also nurture the production of original innovation. The individual-level analysis indicates that this “return innovation” effect does not require the physical return of emigrants. Instead, we find that migration linkages generate information flows that facilitate the cross-border diffusion of knowledge.

Working papers

Emigration Restrictions and Economic Development: Evidence from the Italian Mass Migration to the United States, with Lorenzo Spadavecchia

This article studies the impact of immigration restriction policies on technology adoption in countries sending migrants. Between 1920 and 1921, the number of Italian emigrants to the United States dropped by 85% after Congress passed the Emergency Quota Act, a severely restrictive immigration law. In a difference-in-differences setting, we exploit variation in exposure across Italian districts to this large restriction on human mobility. Using novel individual-level data on Italian emigration to the US and newly digitized historical censuses, we show that this policy substantially hampered technology adoption and capital investment. This evidence is consistent with directed technology adoption theory: an increase in the labor supply dampens the incentive for firms to adopt labor-saving technologies. To validate this mechanism, we show that more exposed districts display a sizable increase in overall population and employment in manufacturing. We provide evidence that “missing migrants,” whose migration was inhibited by the Act, drive this result.

Dealing with Adversity: Religiosity or Science? Evidence from the Great Influenza Pandemic, with Enrico Berkes, Gaia Dossi, and Mara P. Squicciarini

How do societies respond to adversity? After a negative shock, separate strands of research document either an increase in religiosity or a boost in innovation efforts. In this paper, we show that both reactions can occur at the same time, driven by different individuals within society. The setting of our study is the 1918–1919 influenza pandemic in the United States. To measure religiosity, we construct a novel indicator based on the naming patterns of newborns. We measure innovation through the universe of granted patents. Exploiting plausibly exogenous county-level variation in exposure to the pandemic, we provide evidence that more affected counties become both more religious and more innovative. Looking within counties, we uncover heterogeneous responses: individuals from more religious backgrounds further embrace religion, while those from less religious backgrounds become more likely to choose a scientific occupation. Facing adversity widens the distance in religiosity between science-oriented individuals and the rest of the population, and it fuels the polarization of religious beliefs.

Racial Discrimination and Lost Innovation, with Gaia Dossi and Sebastian Ottinger

Can racial discrimination harm innovation? We study this question using data on US inventors linked to population censuses in 1895–1925. Our novel identification strategy leverages plausibly exogenous variation in the timing of lynchings and the name of the victims. We find an immediate and persistent decrease in patents granted to inventors who share their names with the victims of lynchings, but only when victims are Black. We hypothesize that lynchings accentuate the racial content of the victim’s name to patent examiners, who cannot observe the inventors’ race from patent applications. We interpret these findings as evidence of discrimination by patent examiners and provide results against alternative mechanisms.

Durable Goods and Monetary Policy in a Menu-Cost Economy

This paper studies the distinctive pricing dynamics of durable goods and analyzes their implications for the conduct of monetary policy in a menu-cost economy. Using price microdata, I document the following new facts: (i) the dispersion of price changes in durables is higher than in nondurables; (ii) the frequency of price adjustment is countercyclical, however durable prices get relatively rigid in recessions; (iii) the dispersion of price changes is countercyclical for durables, and procyclical for nondurables. I develop a menu-cost model embedding durable consumption and calibrate it to match new and consolidated empirical evidence. I use the model to challenge the prevailing view holding that durable goods dampen the real effectiveness of monetary policy. I find that even though durable goods prices are relatively flexible, the model generates substantial monetary non-neutrality. Moreover, this paper puts forward a new channel whereby durable consumption can amplify the real effects of monetary policy. This result is driven by heterogeneous demand pass-through of aggregate shocks across sectors. Higher durable consumption enhances the sensitivity of nondurable output to interest rate shocks, thus amplifying monetary non-neutrality.

Works in Progress**Natural Disasters, Industrial Policy, and the Direction of Innovation**, with Mara P. Squicciarini

Natural disasters—including climate change—catalyze innovative activity. This paper asks whether industrial policy can direct this activity to generate innovation that mitigates the adverse effects of such disasters. We draw on two historical episodes: the great fires in Chicago (1871) and Boston (1872). In Chicago, the municipal authority forbade wooden constructions after the fire, while no such policy was enacted in Boston. We find that innovation, employment, and output of construction firms increased in both cities. In Chicago, however, these effects are concentrated in firms that operate in non-wood construction. In Boston, instead, they are diluted across all construction firms. In Chicago, we estimate positive spillover effects in sectors that were technically closer to non-wood construction, such as metallurgy and chemistry, while no such effect is present in Boston.

Liberation Technology? The Labor Market Impact of the Sewing Machine on Women, with Philipp Ager

This paper examines the impact of sewing machines on female labor force participation, fertility, and marriage market outcomes. Historians regard sewing machines as a significant technical breakthrough affecting women's role at work and at home. We leverage industry-level exposure to sewing machines and novel data on sewing machine retailers in the United States. In a difference-in-differences design, we show that the diffusion of sewing machines between 1860 and 1880 substantially increased female labor force participation while fertility and marriages decreased. The effects of the sewing machines are vastly heterogeneous across income groups. Our results suggest that poor women drive the bulk of the increase in female labor force participation and fertility decline. Wealthy women, on the other hand, respond to the establishment of sewing machine retailers. This suggests that the impact of sewing machines as household appliances is concentrated at the top of the income distribution. Finally, we quantify large intergenerational spillovers of women's exposure to sewing machines.

Uniting Diversity: Urban Infrastructure and Innovation in the United States, with Eleonora Patacchini

Innovation by and for individuals from socio-economically disadvantaged groups is relatively underprovided. In this paper, we explore whether exposure to diversity through urban infrastructure directs innovation to target such groups. We assemble a new dataset listing the universe of bridges built in 20 major US cities between 1920 and 1940. We leverage cross-neighborhood variation in exposure to diversity through bridge construction in an individual-level difference-in-differences setting. We estimate a significant effect of exposure to Blacks on the number of Black-related patents. Importantly, we find that the effect is larger for inventors who reside in relatively less diverse neighborhoods. We interpret this result as novel evidence that exposure to diverse neighborhoods shifts the volume and the direction of innovation activity to target under-represented minority groups.

A Penny for Your Patent? The 1883 Patent Reform Act and Innovation Dynamics in England

The mandate of intellectual property offices across the world is to increase the volume of innovation. This paper explores how patent fees influence patenting activity. In 1883, a reform decreased patent fees in England by 75%. Using the newly digitized universe of patents filed between 1853 and 1899 and linked to the individual-level population census, we document several facts. After 1883, (i) the volume of produced patents tripled; (ii) the average age of inventors decreased by 10%; (iii) the share of patents produced by women doubled; (iv) the share of patents produced by inventors in low- and mid-skill occupations increased; (v) the average quality of patents did not change, but (vi) the number of breakthrough patents increased; and (vii) the share of patents from inventors living in socio-economically disadvantaged areas increased. Overall, we conclude that more affordable patents increase the diversity of the inventor pool and facilitate patenting activity of high-impact innovations.

Sticky Intergenerational Political Preferences

This paper examines the persistence of political preferences across generations and quantifies its contribution to political segregation. After the election of prominent government officials—such as the President or state governors—their name becomes politically connoted. I conjecture that the name of

an individual born close to an election year is informative of the political preferences of their parents. I leverage this insight to construct and validate a new individual-level measure of intergenerational transmission of political preferences between 1865 and 1940. I find that political preferences are substantially persistent across generations: the son of a Republican (resp. Democrat) is five times more likely to be a Republican (resp. Democrat) than the son of a Democrat (resp. Republican). Individuals with “politicized names” are more likely to sort in politically homogeneous neighborhoods, thereby increasing their political segregation.

Conferences

*: Presented by co-author

2023: University of Milan, Workshop in Economic History (Uppsala University), European Economic Association Annual Meeting, 10th CEPR Economic History Symposium, Political Economy Workshop (Cologne University), Economic History Association Annual Meeting, NBER Summer Institute (Development of the American Economy)*, Harvard University*, Stanford University*, UC Berkeley*, University of British Columbia*, Northwestern University*, Brown University*, Association for the Study of Religion, Economics, and Culture Conference (Harvard)*

2022: European Winter Meeting of the Econometric Society, European Economic Association Annual Meeting, Economic History Association Annual Meeting, Economic History Society Annual Conference (Poster Session), University of Barcelona, Northwestern University Applied Micro Lunch, Northwestern University Economic History Lunch (×2, one *), Workshop in the Economics of Religion (SIEPR)*, KU Leuven*, University of Bergen*, University of Bolzano*, University of Geneva*, PSE/Sciences Po*, Association for the Study of Religion, Economics, and Culture Conference*, Marco Fanno Alumni Workshop*

2021: IZA Annual Migration Meeting, OECD Annual International Conference, CESifo Workshop on Migration Research, Italian Economic Association Annual Conference, University of Bari, Bocconi Applied Micro Brown Bag, Annual Warwick Economics PhD Conference*, Parthenope University*, EDGE Jamboree*

Refereeing

European Journal of Political Economy, Journal of Economic Geography

Teaching Experience

Teaching Assistant, Bocconi University University, 2018–2023

Monetary Theory and Policy
Culture, Institutions, and Development
Economics of Institutions and Culture
History of Political Institutions

Fellowships & Awards

Fondazione Invernizzi Fellowship, 2023

Northwestern Visiting Student Fellowship, 2022

Bocconi PhD Scholarship, 2018–2022

Scuola Superiore Sant’Anna “Honors Students” Program, 2013–2018

Further Experiences

Summer School in Macroeconomic Analysis, Paris School of Economics, 2018

Research Assistant, Bank of England, 2017

Summer School in Money and Banking, London School of Economics, 2016

Policy Intern, Italian Mission at the WTO, UNCTAD, and UNECE in Geneva

Languages

English (fluent), Italian (native), Spanish (good)