Mariagrazia Cavallo

📍 University of Bristol, School of Economics, Priory Road, Bristol, BS8 1TU, UK

✉ mariagrazia.cavallo@bristol.ac.uk

🌐 https://mariagrazia-cavallo.github.io/WebPage/

Research Interests

Economics of Education, Labor Economics, Market Design, Computational Methods

Doctoral Studies

2019 – 2024   🔖 **Ph.D. in Economics**, University of Bristol, UK
Thesis: *Essays on Education Market Design*
Advisors: *Simon Burgess* and *Hans Henrik Sievertsen*
Committee: *Gregory Jolivet* and *Camille Terrier*

Education

2018 – 2019   🔖 **Master in Analysis and Policy in Economics**, École des hautes études en sciences sociales (EHESS), Paris, France
Dissertation in *Economics of Social Interactions*

2016 – 2017   🔖 **Post Graduate Master in Economics and Finance**, University of Naples, Federico II, Italy
Dissertation in *Development Economics*

2014 – 2016   🔖 **M.Sc. in Economics and Finance**, University of Salerno, Italy (*Summa cum Laude*)
Dissertation in *Macroeconomics*

2011 – 2014   🔖 **B.A. in Economics and Business Administration** , University of Salerno, Italy (*Summa cum Laude*)
Dissertation in *Macroeconomics*

Research Experience

2022 – current   🔖 **Research Assistant**, University of Bristol, UK
Research assistant for Prof. Simon Burgess, Prof. Estelle Cantillon, and Dr. Ellen Greaves

Working Papers

🔖 **When Geography Shapes Preferences: Redesigning Teacher Assignment in Italy** with Battal Dogan
Abstract

We investigate Italy's centralized teacher assignment system where teachers can rank "geographical regions", leading to ties in their rank order lists (ROLs). We show that the way ties in teachers' ROLs are resolved in the current assignment mechanism systematically violates teachers' priority rights and results in justified envy. We propose a new mechanism, Deferred Acceptance with Hierarchical Choice (DA-HC), which is strategy-proof, eliminates justified envy, and Pareto improves over the benchmark deferred acceptance mechanism with simple tie-breaking (DA-STB). Using administrative data, we provide evidence that DA-HC can potentially bring significant welfare improvements over the benchmark DA-STB.

Working Papers (continued)

🔖 **Age at School Entry: What Do We Know So Far?** with Elizabeth Dhuey, Luca Fumarco, Levi Halewyck, Simon ter Meulen
Abstract

How does age at school entry affect children's and adults' outcomes? Historically, this question has received attention from a range of disciplines including education, medicine, psychology, sociology, and sports, remaining largely overlooked in economics. However, in the last two decades economists became increasingly interested in understanding the impact of school-entry ages on human capital development. This paper is the first systematic review of age-at-school entry literature in economics. We address four main issues. First, we discuss the methods to identify age-at-school entry effects. Second, we synthesize three major channels: (i) maturity, (ii) investments, and (iii) peers' externalities. Then, we discuss how age-at-school entry has an impact on test scores, cognitive skills and education trajectories, and how this impact is mediated by country-specific educational settings. Third, we discuss the effects on labor market outcomes. Fourth, we summarize the vast literature on age-at-school entry effects on physical and mental health, social relationships, and self-esteem. Furthermore, we discuss the rising literature on age-at-school entry effects on juvenile crime, family formation, and parents' behaviors. For all these aspects, we review the research frontier, identify gaps in the literature, and summarize some potential explanations.

Work in Progress

🔖 **Modifying school choice for more equitable outcomes in England** with Simon Burgess, Estelle Cantillon, and Ellen Greaves
Abstract

How do the priority rules chosen by schools affect pupils' outcome? This paper studies the effect of school admissions priority rules on the equitable access of students to high-performing schools and the level of segregation across schools. Using the universe of school choice applications to secondary schools in England, we build and estimate a model of school choice. Through a counterfactual analysis we study the potential impact of three policy reforms: (i) quotas for free-school-meal (FSM) students; (ii) marginal ballots; and (iii) fair banding.

🔖 **Retention Policies in Teacher Reassignment**
Abstract

Workers typically change positions multiple times throughout their career. As a result, in many labor markets, commitment constraints are widely adopted to force workers staying in their current position and reduce turnover. However, these constraints can be detrimental for workers' welfare. Motivated by retention policy schemes adopted in the Italian teacher assignment system, I quantitatively evaluate the trade-off between teacher retention and teacher welfare under different policies. Using administrative data on tenured teacher mobility applications, I build and estimate a tractable dynamic model of teacher application behavior, where teachers are allowed to reapply across years and respond to dynamic incentives. Through counterfactual exercises, I show that policies offering score bonuses for remaining in a position can outperform those requiring teachers to wait before moving. However, I show that these bonus-based policies may be less effective in contexts like Italy, where geographical priorities are in place along with a point-based score system.

Work in Progress (continued)

Choosing in the Dark. Information Revelation and Teacher Distribution
Abstract

This paper investigates the effects of revealing partial information about available vacancies on the distribution of teachers across schools. To identify this effect I exploit a quasi-experimental variation provided by the information disclosure policy in Italy's centralized teacher assignment. Information about available vacancies is released by Provincial Offices of Education. However, due to lack of coordination, some offices may not release, or not release in time, this information. Using comprehensive administrative data on tenured teacher applications and webscraped data on public announcements about teacher retirements, I use plausible exogenous variation in announcements across years and provinces in a difference-in-differences strategy. I provide novel evidence on the role of information disclosure in shaping teacher distribution across schools. I show that there are within-province distributional effects (i) within temporary contract teachers and tenured teachers and, (ii) within less experienced tenured teachers and more experienced tenured teachers.

The Italian North-South Divide. Market Design for Balanced Teacher Reassignment
Abstract

Motivated by the unequal geographical distribution of tenured teachers in the Italian teacher labor market, in this project I study a teacher assignment problem allowing for inter-provincial mobility. I show that the current design of the Italian teacher assignment increases the distributional inequality across the country, by providing different incentives in ranking schools or "geographical regions". The objective of this project is to propose a new design that restores a balance between inflows and outflows of tenured teachers across schools and provinces, and to evaluate the effectiveness of this policy change.

Solving High-Dimensional Portfolio Choice Models in School Choice
Abstract

In this project, I study novel solutions to high-dimensional portfolio choice problems in school choice. In many contexts, centralized assignment systems are national, implying that agents' choice set can be potentially very large rendering infeasible traditional solution methods. I explore solutions to the problem offered by machine learning clustering techniques to reduce the dimensionality of the choice set and avoid the curse of dimensionality.

Publications

Lost in Translation: Reading and Math Performance of Second-Generation Immigrant Children in Italy. *Journal of Human Capital*, with Giuseppe Russo (Forthcoming)
Abstract

We study the effect of language proficiency on Math achievement for 10-year-old second-generation immigrant children in Italian primary schools. Proficiency in the host country's language is the prerequisite to acquire any other skill. However, using an instrumental variable strategy that exploits heterogeneity in birth dates and variation in linguistic distances, we find that these children face a trade-off between learning Italian and learning Math. According to results in the linguistic literature, we show that the trade-off occurs when proficiency falls below the threshold ensuring a sufficient command of Italian. We also develop a model of skill production providing a theoretical foundation for our results.

Policy Writing

School admissions in England: The rules schools choose on which pupils to admit (2023)
with Simon Burgess, Estelle Cantillon, Ellen Greaves, Min Zhang (Policy Report)
Abstract

Most secondary schools in England are able to design the rules for which pupils have priority when the school is over-subscribed. This could be positive or negative for inclusivity, depending on schools' choices. In this context, we study the detailed rules for each secondary school in England. Our main findings are that, first, geography (still) determines admission to most over-subscribed schools. This matters for social mobility, as some households are priced out of high performing schools due to higher property prices around the school. Second, despite explicit financial incentives, only a small minority of schools give priority to pupils eligible for the Pupil Premium, and this priority is meaningful only in a few dozen schools. Third, the few schools with 'innovative' admissions arrangements could inspire other schools to implement feasible 'tried and tested' reforms. Free schools appear to be leading these 'innovative' admissions arrangements. Finally, in the complex system of multiple school types and diverse admissions arrangements, parents in some areas lack the required information to make informed school choices.

Refereeing

Social Choice and Welfare

Awards

2024	**Best Paper Award ACM EC 2024**
	Exemplary Track Paper Award in Applied Modeling ACM EC 2024
2019–2023	**School Bursary, School of Economic, University of Bristol**, full scholarship (Ph.D.)
2017	**Antoine Faure-Grimaud Prize** for outstanding student performance, University of Naples, Federico II

Teaching Experience

University of Bristol, UK (Graduate Teaching Assistant)
Probability, Statistics and Econometrics (2019, 2020, 2021, 2022)
Mathematics for Economics (2020, 2021, 2022)

University of Salerno, Italy (Teaching Assistant)
Macroeconomics (2018)

Presentations

2024	**25th ACM Conference on Economics and Computation**
2023	**Economic Seminars Masaryk University (MUES); PhD Seminar University of Bristol**
2022	**PhD Seminar University of Bristol**
2021	**Economic Seminars University of Trieste; PhD Seminar University of Bristol; WEAI 96th Annual Conference**
2020	**PhD Seminar University of Bristol; AIEL 35th National Conference of Labour Economics**

Courses

July, 2019	■	**Equilibria in Financial Markets: General Equilibrium and Game Theoretic Perspectives**
		Summer School, University of Bielefeld, IMW, Germany
2017–18	■	**Topology**
		Department of Mathematics, University of Salerno, Italy
	■	**Mathematical Analysis**
		Department of Mathematics, University of Salerno, Italy

Skills

Programming	■	Python, C++, Cython, Stata, R, Fortran, Julia
Web Dev	■	Html, css, JavaScript
Languages	■	English (fluent), Italian (native), French (basic knowledge)