

DAVID DELACRETAZ

PhD Candidate
Department of Economics
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Undergraduate Studies:

B.Sc., Economics, University of Lausanne, 2009

Graduate Studies:

M.Sc., Economics, University of Lausanne, 2011

Thesis Title: “Matching in the Context of an Exchange Program”

Thesis Advisor: Prof. Bettina Klaus

Ph.D. Candidate in Economics, University of Melbourne, 2012 to present

Thesis Title: “Complements and Markets: Essays in Matching Theory”

Expected Completion Date: January 2018

Advisors: Prof. Simon Loertscher, Prof. Claudio Mezzetti, Dr. Jun Xiao

References:

Prof. Simon Loertscher
University of Melbourne
simonl@unimelb.edu.au

Prof. Claudio Mezzetti
University of Queensland
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Prof. Scott Duke Kominers
Harvard Business School
kominers@fas.harvard.edu

Prof. M. Utku Ünver
Boston College
unver@bc.edu

Teaching and Research Fields:

Applied Microeconomic Theory, Market Design, Matching Theory, Mechanism Design

Teaching Experience:

- 2015 – 2016 Price Theory (second year microeconomics), Royal Melbourne Institute of Technology (RMIT). Instructor at RMIT and Singapore Institute of Management (SIM), course coordinated by Dr. Martin Byford.
- 2014 Victorian Competition and Efficiency Commission (VCEC) Executive Education Program, University of Melbourne and Centre for Market Design (CMD). Lecture on matching theory and applications.
- 2014 Microeconomics (third year), University of Melbourne. T.A. for Prof. Simon Loertscher.

Research Experience:

- 2013 – Present University of Melbourne, Researcher for the Centre for Market Design (CMD). Design of various matching markets, including the allocation of child care and kindergarten places in the State of Victoria, the placement of Australian Commonwealth Treasury graduates to their final position and a job mobility program at the Department of Treasury and Finance (DTF) in the State of Victoria.
- 2012 – 2013 University of Melbourne, R.A. for Dr. Georgy Artemov. Project on University Admission in Australia.

Honors and Scholarships:

2016	Student with the most potential in Economics, 29 th Ph.D. Conference in Economics and Business
2016	Best presentation in Economics, 29 th Ph.D. Conference in Economics and Business
2016 – 2017	Faculty of Business and Economics Travelling Scholarship, University of Melbourne
2015	Centre for Market Design Ph.D. Scholarship, University of Melbourne
2013	Kilmany Scholarship for highest result in Economics Ph.D. Coursework, University of Melbourne
2012 – 2016	Melbourne Research Scholarship, University of Melbourne
2012 – 2016	Research Higher Degrees Studentship, University of Melbourne

Presentations:

Seminars:

2017	Australian National University HEC Lausanne Toulouse School of Economics
2016	Department of Treasury and Finance, State of Victoria
2015	University of Queensland

Conferences:

2017	Australasian Public Choice Conference (Deakin University, scheduled) Conference on Economic Design (University of York) Swiss Society of Economics and Statistics Annual Congress (University of Lausanne) Australasian Economic Theory Workshop (Auckland University of Technology) MATCH-UP (Poster, Microsoft Research New England)
2016	University of Melbourne – Toulouse School of Economics Workshop (Melbourne) Ph.D. Conference in Economics and Business (University of Western Australia) NBER Market Design Working Group Meeting (Stanford University) Econometric Society Australasia Meeting (University of Technology Sydney) Australasian Economic Theory Workshop (Monash University)
2015	Australasian Economic Theory Workshop (Deakin University)
2014	Econometric Society European Meeting (Toulouse)

Personal:

Citizenship:	Australia, Switzerland
Languages:	French (native), English (fluent), German (intermediate), Italian (intermediate)

Research Papers:**“Stability in Matching Markets with Sizes” (Job Market Paper)**

Abstract: Matching markets such as day care, tuition exchange, couples problems and refugee resettlement involve agents of different *sizes*. The size of an agent is the amount of capacity that he uses. In matching markets where all agents have the same size, there exists an agent-optimal stable matching. This structure disappears when agents have different sizes: the set of stable matchings may not contain an agent-optimal element and may even be empty. In this paper, we study a matching market where the size of an agent is either one or two. We propose a novel and constructive algorithm to find an agent-undominated stable matching whenever one exists. We introduce a novel relaxation of stability: *size-stability*. Size-stable matchings are non-wasteful but allow size-two agents to envy multiple size-one agents. We show that the set of size-stable matchings is nonempty. We adapt our algorithm to find a size-stable matching that is undominated from the point of view of size-two agents, thus compensating them for envying size-one agents. In the process, we outline a new trade-off between eliminating waste and bounding envy: at any non-wasteful matching, an agent may envy arbitrarily many other agents.

“Two-Sided Allocation Problems, Matching with Transfers, and the Impossibility of Ex Post Efficiency”
(with Simon Loertscher, Leslie M. Marx, and Tom Wilkening)

Revise and Resubmit: *Journal of Economic Theory*

Abstract: Calling a two-sided allocation problem a matching problem if it can be represented as an assignment game, we show that ex post efficient trade is impossible for all matching problems. Generalizing Shapley’s (1962) theorem, we show that a necessary and sufficient condition for a two-sided allocation problem to be a matching problem is that each agent can be decomposed into constituents with unit capacities. The family of rank-dependent discounts payoff functions, which we introduce, nests many important specifications, is sufficient for decomposability and, therefore, for impossibility of ex post efficient trade.

“Refugee Resettlement” (with Scott Duke Kominers and Alexander Teytelboym)

Abstract: Over 100,000 refugees are permanently resettled from refugee camps to hosting countries every year. Nevertheless, refugee resettlement processes in most countries are *ad hoc* accounting for neither the priorities of hosting communities nor the preferences of refugees themselves. Building on models from two-sided matching theory, we introduce a new framework for *matching with multidimensional constraints* that models refugee families’ needs for multiple units of different services, as well as the service capacities of local areas. We propose several refugee resettlement mechanisms that can be used by hosting countries under various institutional and informational constraints. Our mechanisms can improve match efficiency, incentivize refugees to report where they would like to settle, and respect priorities of local areas thereby encouraging them to accept more refugees overall. Beyond the refugee resettlement context, our model has applications ranging from the allocation of daycare slots to the incorporation of complex diversity constraints in public school assignment.

Research Papers in Progress:**“Uncontrolled Immigration and Refugee Matching”** (with Ellen Muir)**“Efficient and Essentially Stable Assignments”** (with Andrew Kloosterman and Peter Troyan)¹

¹ A draft of this paper already exists. I am collaborating on the next version.