RACHAEL MEAGER
rmeager@mit.edu

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

OFFICE CONTACT INFORMATION
MIT Department of Economics
77 Massachusetts Avenue, E52-301
Cambridge, MA 02139

617-803-3008
rmeager@mit.edu

http://economics.mit.edu/grad/rmeager

HOME CONTACT INFORMATION
15 Dana Street, Apt. 912
Cambridge, MA 02138
Mobile: 617-803-3008

MIT PLACEMENT OFFICER
Professor Benjamin Olken bolken@mit.edu
617-253-6833

MIT PLACEMENT ADMINISTRATOR
Ms. Eva Konomi evako@mit.edu
617-253-8787

Mr. Thomas Dattilo dattilo@mit.edu
617-324-5857

DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2017
DISSERTATION: "Essays on Evidence Aggregation in Development Economics"

DISSERTATION COMMITTEE AND REFERENCES

Professor Esther Duflo
MIT Department of Economics
77 Massachusetts Avenue, E52-544
Cambridge, MA 02139
617-258-7013
eduflo@mit.edu

Professor Abhijit Banerjee
MIT Department of Economics
77 Massachusetts Avenue, E52-540
Cambridge, MA 02139
617-253-8855
banerjee@mit.edu

Professor Anna Mikusheva
MIT Department of Economics
77 Massachusetts Avenue, E52-526
Cambridge, MA 02139
617-324-5459
amikushe@mit.edu

Professor Robert Townsend
MIT Department of Economics
77 Massachusetts Avenue, E53-449
Cambridge, MA 02139
617-452-3722
rtownsen@mit.edu

PRIOR EDUCATION

University of Melbourne, Australia 2011
B.Comm. *Honours*, Economics
B.A. History and French

CITIZENSHIP Australia, Ireland

GENDER Female

LANGUAGES English (fluent), French (conversational)

FIELDS Primary Field: Development Economics
Secondary Field: Econometrics

TEACHING EXPERIENCE

14.382 Econometrics (Graduate, MIT)	Spring 2016
Teaching Assistant to Professor Victor Chernozhukov	
Average Student Rating: 6.5/7	
14.32 Econometrics (Undergraduate, MIT)	Fall 2015
Instructor	
Average Student Rating: 6.5/7	
14.772 Development Economics: Macroeconomics (Graduate, MIT)	Spring 2015
Teaching Assistant to Professor Abhijit Banerjee	
Teaching Assistant to Professor Esther Duflo	
Average Student Rating: 6.3/7	
14.32 Econometrics (Undergraduate, MIT)	Fall 2014
Teaching Assistant to Professor Anna Mikusheva	
Average Student Rating: 6.0/7	
14.384 Time Series Econometrics (Graduate, MIT)	Fall 2014
Teaching Assistant to Professor Anna Mikusheva	
Average Student Rating: 6.7/7	

RELEVANT POSITIONS

Research Assistant to Professor Esther Duflo (MIT)	2013-2015
Research Assistant to Professor Abhijit Banerjee (MIT)	2012-2015
Research Assistant to Professor Peter Bardsley (Melbourne)	2011-2012
Research Assistant to Professor Joshua Gans (Melbourne)	2009-2011

FELLOWSHIPS, HONORS, AND AWARDS

SSMART Grant (BITSS / Arnold Foundation)	2015
Shultz Fund Grant (MIT)	2015
David Finch International Fellowship (MIT)	2012
Jean Polglaze Memorial Prize (University of Melbourne)	2011
Economics Honours Prize (University of Melbourne)	2011
AG Whitlam Prize (University of Melbourne)	2011
Dean's Award (University of Melbourne)	2010
IDP International Education Scholarship	2008
Henry George Foundation Scholarship	2007

PROFESSIONAL ACTIVITIES Referee for *American Economic Review,*
American Economic Journal: Applied,
The European Economic Journal

Inaugural Student Council Member *Institute for Data, Systems, and Society (MIT)*

RESEARCH PAPERS

"Aggregating Distributional Treatment Effects: A Bayesian Hierarchical Approach to the Microcredit Literature" (Job Market Paper)

This paper develops methods to aggregate evidence on distributional treatment effects from multiple studies conducted in different locations, and applies them to the microcredit literature. Several randomized trials of expanding access to microcredit found substantial effects on the tails of household outcome distributions, but the extent to which these findings generalize across different settings is not known. Aggregating the evidence on sets of quantile effects poses additional challenges relative to average effects because distributional effects must imply monotonic aggregate quantiles and pass information across quantiles. Using a Bayesian hierarchical framework, I develop new models to aggregate distributional effects and assess their generalizability to future settings. For continuous outcome variables, this is achieved by applying transformations to the unknown parameters. For variables with discrete mass points, such as business profits, I use the economic structure of the data to build tailored parametric aggregation models. I find generalizable evidence that microcredit has precisely zero impact on the distribution of various household outcomes below the 75th percentile. Above this point there is no generalizable prediction, reconciling findings of no impact on means with some impact on dispersion. Thus, there is strong evidence that microcredit typically does not lead to worse outcomes at the group level, but no generalizable evidence on whether it improves group outcomes.

"Understanding the Average Impact of Microcredit Expansions: A Bayesian Hierarchical Analysis of 7 Randomized Experiments"

I perform a Bayesian hierarchical analysis of the evidence from 7 randomized trials of microcredit to assess the general impact on household outcomes and the heterogeneity in this impact across sites. Across all outcomes, the results suggest that the average effect of microcredit is positive but small relative to control group average levels, with a reasonably high chance of effectively zero impact. Standard pooling metrics for the studies indicate on average 60% pooling on the treatment effects, suggesting that the site-specific effects have substantial external validity. The cross-study heterogeneity is almost entirely generated by heterogeneous effects for the 27% households who previously operated businesses before microcredit expansion, and impacts on this group appear to be much larger overall. A Ridge regression procedure to assess the correlations between site-specific covariates and treatment effects indicates that the remaining heterogeneity is strongly correlated with differences in economic variables, but not with differences in study design protocols. The average interest rate and the average loan size have the strongest correlation with the treatment effects, and both are negative.

"Fast Robustness Quantification with Variational Bayes" (2016 ICML Workshop on Data4Good: Machine Learning in Social Good Applications, New York)

(joint with Ryan Giordano, Tamara Broderick, Jonathan Huggins, Michael Jordan)

Bayesian hierarchical models are increasingly popular in economics. When using hierarchical models, it is useful not only to calculate posterior expectations, but also to measure the robustness of these expectations to reasonable alternative prior choices.

We use Variational Bayes and linear response methods to provide fast, accurate posterior means and robustness measures with an application to measuring the effectiveness of microcredit in the developing world.

"Vitamin A Supplements and Child Mortality: Resolving a Controversy in Meta-analysis"

Vitamin A supplementation is generally considered one of the most effective interventions to reduce child mortality in developing nations (Imbdad et al, 2011) but recent meta-analyses have produced much lower point estimates than prior evidence (Awasthi et al 2013). This paper shows that this is due less to any new data and more to different methodological choices in aggregation methods, and investigates the theoretical and empirical performance of two popular methods, fixed effects versus random effects meta-analytic methods on similar bodies of evidence. The random effects method, implemented using Bayesian hierarchical models, typically outperforms the fixed effects method in terms of mean squared error. The Bayesian hierarchical approach is robust to misspecifications of the likelihood, including the presence of classical outliers and "precision outliers": studies with much larger or smaller standard errors than the rest of the literature. Applied to the vitamin A studies, the hierarchical model estimates that supplementation typically reduces child mortality by 23% of control group risk, contrasting with the fixed effects model's estimated reduction of 11% (found in Awasthi et al 2013). There is substantial underlying heterogeneity across studies: 71% of the cross-site variation in the estimates is attributable to genuine differences in treatment effects. Given this heterogeneity and the presence of a precision outlier study in the literature, the fixed effects method provides misleading results: it underestimates the reduction in mortality yet overestimates the confidence we should have about the general effect of supplementation. These results demonstrate the importance of using methods that can distinguish estimate precision from estimate generalizability when the literature contains heterogeneous treatment effects.

"**Competing Lending Platforms, Endogenous Reputation, and Fragility in Microcredit Markets" (submitted)**

(Joint with Peter Bardsley)

This paper shows that market fragility and mass default can arise in microcredit markets as a result of the strategic interaction between a microlender using a reputation-based mechanism and a traditional lender using physical collateral. In our model, borrowers solve a dynamic programming problem which induces an endogenous equilibrium distribution of reputational capital. Because the quality of each lender's pool of borrowers is affected by both lenders' interest rates, lender reaction curves are non-monotonic and discontinuous. This can result in knife-edge equilibria and mass default on the microlender precipitated by minor parametric perturbations. Fragility is exacerbated by borrower screening and sovereign risk, but ameliorated when microlenders have social welfare goals. Our results highlight the importance of studying the entire credit market rather than microfinance in isolation.

RESEARCH IN PROGRESS

"Combining Experimental and Observational Studies in Meta-Analysis: Leveraging Experimental Structures to Eliminate Selection Bias" (Joint with Michael Gechter)

"Competition and Welfare in Microcredit Markets: a Structural Bayesian Hierarchical Approach" (Joint with Shoshana Vasserman)

A Multifaceted Approach to Poverty Alleviation in Six Countries: A Bayesian Hierarchical Analysis of the Graduation Program (Joint with Andrew Gelman, Dean Karlan, Shira Mitchell and Chris Udry)