

MARTIN ROTEMBERG

<http://scholar.harvard.edu/mrotemberg>

mrotemberg@fas.harvard.edu

Research Statement

My research seeks to understand and measure the key determinants of economic growth and development. When agents undertake new economic activities, they can create economic growth, but might instead crowd-out the economic activities of other agents. My research focuses on these issues. What types of changes in economic environments lead agents to undertake new activities? Which of those activities lead to aggregate growth and which to reallocation? From whom does the reallocation come from? What can this tell us about the appropriate design of industrial policies? So far, I have focused my research on two places and times: the United States in the 19th century, and modern India, and I plan to leverage my experience with these settings as I continue to pursue my research agenda.

My job market paper, “Equilibrium Effects of Firm Subsidies,” focuses on targeted industrial policies in India: programs which give preferential treatment to a particular set of firms. In addition to understanding how and why those programs were helpful to their beneficiaries, I am primarily interested in estimating the aggregate consequences of these programs, and the channels through which equilibrium effects operate. I develop a model which shows how to estimate of the elasticity of aggregate growth with respect to firm growth, and apply it to a particularly important setting, a weakening of the eligibility requirements for small firm subsidies in 2006. I find that eligible firms benefit substantially from the program, but that their competitors suffer, and the aggregate output gains were limited. The crowd-out was concentrated for non-traded goods. I also find gains in aggregate TFP due to the relaxation of small-firm eligibility requirements: if the old eligibility requirements were reinstated, I estimate that there would be a 5% loss in TFP.

The second chapter in my dissertation, “Communication and Investment: Evidence from the Expansion of Postal Services,” studies the role that communication can play in encouraging structural transformation. In the 19th century, the United States government introduced free delivery of letters to rural areas. James Feigenbaum, a PhD candidate at Harvard, and I have collected information about the roll-out, and find that, due to resource constraints, the timing of when particular communities gained access to free delivery was reasonably arbitrary, providing a valuable natural experiment for understanding the role of communication technologies. We show that in a model of production with information frictions, decreasing communication costs will increase the relative profitability of the manufacturing sector. Furthermore, improved communication and improved transportation are complements. Using an instrumental variables strategy to leverage the timing of roll-out, we test these theoretical predictions, and find that postal services played an important role in the development and structural transformation of the American economy.

In addition to research on growth and development; I also work on extending machine learning techniques in order to shed light on key economic questions. I am working with Michael Egedal and Michael Gill, respectively PhD candidates in Economics and Government at Harvard, on several projects related to generating measures of similarity. There are many settings where understanding how the similarity of agents evolves is crucial to analysis, such as friends’ social networks, competitors’ product choices, investments of trade partners, and language use.

Our first contribution to this literature focuses on using text as data. The third chapter in my dissertation, “Here Comes the Sunshine Act,” focuses on understanding how the topics discussed in FOMC

meetings changed after the statutory enforcement of transparency. We propose a new method for estimating topics from text data, which overcomes many of the issues plaguing existing methods. We apply Bayesian clustering models to dictionaries and textbooks in order to create a common set of topics which can then be applied to a variety of settings and are comparable across research projects. In doing so, we are able to generate similarity measures of documents which take into account that those documents may use different words while expressing similar sentiments. We are working on showing how to use this technique to show how to relate multiple documents released by the Federal Reserve Board.

Our second project, “How Does Similarity Evolve,” shows how to decompose the similarity measures into their constituent parts. A common criticism of research on similarity is that merely showing that two agents become more “similar” (for instance, start using more similar language) is not enough to explain the underlying mechanisms: are the agents losing dissimilarity, or adding similarity? Is one agent’s behavior driving the change, or are they converging together? We have developed a method for this decomposition, and are working on applying it to a variety of settings.

For future projects, my short-term goal is to use the data set I have assembled on India to answer a diverse range of questions about fundamental determinants of economic growth. Alex Segura, a PhD candidate at Harvard, Stephen O’Connell, a PhD candidate at the City University of New York, and I have collected firm-level data in India covering 1989-2012. In particular, our data covers both the formal and informal sectors.

One project tries to understand how much the existence of the informal sector is a function of demand. That is to say, if there is a positive shock to formal manufacturing in a region, what happens to the informal sector and the agricultural sector? From where does labor come from in order to allow for the expansion of formal sector manufacturing? The same question applies in the other direction – what happens if there is a positive shock to the informal sector? Furthermore, we are also interested on cross-industry relationships, in particular the formation of industrial clusters and the effects of industry-specific trade shocks.

As a professional service, we are also hoping to make public a comprehensive set of documentation on the available firm-level data in India. For instance, the paper “Are We Undercounting Reallocation's Contribution to Growth?” (with Mitsukuni Nishida, Amil Petrin, and T. Kirk White), which documents that reallocation across firms was responsible for 2/3 of the growth in Indian manufacturing over the last decade, came from my emailing the authors when I noticed that they were writing an interesting paper about India, but lacked the appropriate data. I spent much of my third year of graduate school collecting the dataset used in my job market paper, and I hope to continue to help researchers work on questions related to manufacturing in India without needing to suffer through acquiring, understanding, and putting together the data.

My research agenda focuses on structural transformation and growth. Through the careful study of detailed data, it is possible to discover policy-relevant mechanisms which cause regions to grow, and the aim of my research is to bring new perspectives and insight to what generates economic prosperity.