

# Optimal Contracting and Spatial Competition among Financial Service Providers

Gustavo Joaquim \*   Robert Townsend †   Victor Zhorin ‡§

February 11, 2019

## Abstract

We present a contract-based model of industrial organization for markets characterized by information and other frictions (Moral Hazard, Adverse Selection, Limited Commitment etc.) and different market structures (Monopoly, Oligopoly, Competition), the latter driven by spatial costs, logit errors, and number of financial service providers. We show this method can be applied to understand and quantify the impact of spatial and technological changes in the banking sector in emerging market countries. We derive a likelihood estimator for the structural parameters that determine contracting frictions and market structure, but also establish methods, depending on counterfactuals of interest, that do not need to specify both. We illustrate our framework using simulated data, illustrating competition of local, relationship based banks versus less-informed national banks with a spatial cost advantage. Using real data from banks and entrepreneurs in the Townsend Thai Data, our results indicate that reducing spatial costs by 50% is equivalent to increasing consumption by 4.85%, which we compare to other policies. Our larger goal is to develop an operational, broadly applicable toolkit for empirical work.

---

\*MIT, e-mail: gpgj@mit.edu

†MIT and NBER, Corresponding author: rtownsen@mit.edu

‡University of Chicago, e-mail: vzhoring@chicago.edu

§We thank Nikhil Agarwal, Varadarajan Chari, David Donaldson, Glenn Ellison, Amy Finkelstein, Thomas Holmes, Ariel Pakes, Christopher Phelan, Michael Whinston, and seminar participants at Minneapolis Fed, MIT, Harvard, University of California/Berkeley-Haas for very useful comments, ASSA and SAET conferences. This work used the Extreme Science and Engineering Discovery Environment (XSEDE), which is supported by National Science Foundation grant number OCI-1053575. We acknowledge the University of Chicago Research Computing Center for support of this work. We gratefully acknowledge research support from the National Institute of Child Health and Human Development (NICHD), the research initiative "Private Enterprise Development in Low-Income Countries" (funded jointly by the CEPR and the DFID), the John Templeton Foundation, the CFSP at the University of Chicago (funded by Bill & Melinda Gates Foundation), and the BFI through the Macro Financial Modelling Fellowship.