FINANCIAL CENTRALITY AND LIQUIDITY PROVISION

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ABSTRACT. We study an endowment economy in which agents face income risk, as if uncertain returns on a portfolio, and agents can only make transfers in states when they are actively participating in the market. Besides income risk, agents also have limited and stochastic market access, with a probability distribution governed by an underlying social network. While network connections may serve to dissipate shocks, they may also provide obstacles to the sharing of risk, as when participation frictions are generated through the network.

We identify and quantify the value of key players in terms of whether they are likely to be able to smooth the resulting market participation risk and how valuable that smoothing would be when they are there. We define financial centrality in economic terms, given the model, as the ex ante marginal social value of injecting an infinitesimal amount of liquidity to the agent.

We show that the most financially central agents are not only those who trade often -- as in standard network models -- but are more likely to trade when there are few traders, when income risk is high, when income shocks are positively correlated, when attitudes toward risk are more sensitive in the aggregate, when there are distressed institutions, and when there are tail risks. We extend our framework to allow for endogenous market participation. Observational evidence from village risk sharing network data is consistent with our model.

JEL Classification Codes: D14, E44, G01, L14, O16

Keywords: Financial networks, networks, market participation, liquidity injection

1. INTRODUCTION

We focus on a measure of financial centrality and the identification of key players in financial markets in environments in which disruptions to markets take the form of shocks to market participation.

These shocks are consistent with the foundations of several types of models that are widely used to think about financial markets. The first class of models include search frictions with bilateral and stochastic matching as in Duffie et al. (2005), and, in particular, directed search models in which subsets of agents group together facing a tradeoff between offers and matching rates as in Armenter and Lester (2015). The second class of models include market participation models used in finance and monetary economics, in particular, when the number and

Date: March 6, 2018.
We thank Ben Golub, Matthew Jackson, and Juan Passadore for helpful discussions as well as seminar participants at NYU, Princeton, SAET Faro, Minnesota, MIT, and various other seminars and conferences. Chandrasekhar is grateful for support from the National Science Foundation GFRP.

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