Ji Shen

Department of Finance, Financial Market Group
Houghton Street
London WC2A 2AE, UK

shenjitoq@gmail.com
(+44)7424246924

Education

London School of Economics & Political Science, London, UK
Ph.D. in Financial Economics, expected Sept. 2015

Yale University, New Haven, CT
M.A. in Economics, June 2011

Peking University, Beijing, China
M. A. in Economics, June 2007

Fudan University, Shanghai, China
B.S. in Physics , June 2004

Research Interests

Asset Pricing with Frictions, Financial Intermediation, Over-the-Counter Markets, Liquidity

Working Paper

Exchange or Over-the-Counter Market: A Search-Based Model of Market Fragmentation and Liquidity

Abstract: Investors trade assets or commodities in different venues: exchange means high immediacy and high cost while OTC market corresponds to low immediacy and low cost. For example, a recent trend in the global equity market is the rise of off-exchange trading. Chinese enterprise bonds are traded in two partially-separated markets, the exchange and the interbank market. This paper presents a model where a long-lived asset can be traded both in an exchange and an OTC market. In the exchange, transactions are intermediated by market-makers who post bid-ask prices publicly. In the OTC market, dealers search for trading partners on behalf of investors. Investors with urgent trading needs enter the exchange while investors with moderate valuations enter the OTC market. As search friction decreases, more investors enter the OTC market, the bid-ask spread narrows and the trading volume in the OTC market increases. This helps understand the historical pattern why most trading in corporate and municipal bonds on the NYSE migrated to OTC markets after WWII with the development of communication technology.

Working Paper

A Search Model of the Aggregate Demand for Safe and Liquid Assets (with Hongjun Yan)

Abstract: Safe and liquid assets, such as Treasury bonds, are money-like instruments that command a convenience yield. We analyze this in a search model of two assets that differ in liquidity and safety. In contrast to the reduced-form approach, which puts the safe and liquid asset in utility function, we explicitly model investors' trading needs and the trading friction. One new implication from this approach is that the marginal investor's preference for safety and liquidity is not enough in determining

the premium. Instead, the distribution of investors' preferences plays a direct role. Our model implies that an increase in the supply of the liquid asset may increase or decrease the liquidity premium, depending on the distribution of investors' liquidity preference. Our model shows that investors may over- or underinvest in the search technology relative to a central planner, and that overinvestment occurs when investors' expected trading frequency is in the intermediate region.

Working Paper

Financial Intermediation Chains in an OTC Market (with Bin Wei and Hongjun Yan)

Abstract: More and more layers of intermediaries arise in modern financial markets. What determines this chain of intermediation? What are the consequences? We analyze these questions in a stylized search model with an endogenous intermediary sector and intermediation chains. We show that the chain length and the price dispersion among inter-dealer trades are decreasing in search cost, search speed, and market size, but increasing in investors' trading needs. Using data from the U.S. corporate bond market, we find evidence broadly consistent with these predictions. Moreover, as the search speed goes to infinity, our search-market equilibrium does not always converge to the centralized-market equilibrium. In the case with an intermediary sector, prices and allocations converge, but the trading volume remains higher than that in centralized-market equilibrium. This volume difference goes to infinity when the search cost approaches zero.

Publications

Collateral-Motivated Financial Innovation (with Hongjun Yan and Jinfan Zhang)
Review of Financial Studies, 2014, 27 (10): 2961-2997.

Abstract: Collateral frictions have a profound effect on our economic landscape, ranging from the design of financial securities, laws, and institutions, to various rules and regulations. We analyze a model with disagreement, where securities and collateral requirements are endogenous. It shows that the security that isolates the variable with disagreement is "optimal" in the sense that alternative securities cannot generate any trading. In an economy with N states, investors may introduce more than N securities, and markets are still incomplete. The model has several novel predictions on the behavior of basis—the spread between the prices of an asset and its replicating portfolio.

Work in Progress

Multiplicity and Stability of OTC Market Equilibrium (with Hongjun Yan)

Abstract: The paper explores the equilibria in a stylized search model where investors' trading needs are due to time-varying valuations. There always exists a trivial equilibrium where no investor chooses to trade. When search cost is small, there exists another equilibrium in which traders with medium trading needs serve the role of intermediary in the market. However, when search cost is large, there exists the other equilibrium where all traders stay outside the market after trade. When search friction is sufficiently small, only the second equilibrium is stable, in the sense that investors' trading behavior is robust to some exogenous perturbations on the side of their trading partners.

Strategic Price Dispersion in OTC Market (with Sergei Glebkin)

Abstract: Traders in OTC markets "shop around" for the best deal: buyers do not necessarily trade with the first seller they call and the same for sellers. We embed the "shopping around" feature into the standard OTC framework. Instead of bargaining over the price in a bilateral meeting, each trade can make several calls to get competitive quotes and choose the best offer. All sellers (or buyers) have the same valuation for the asset, but they bid different prices in equilibrium because they are uncertain about the number of active bidders. This generates a non-degenerate dispersion in transaction prices which is not induced by traders' different valuations, but due to investors' strategic considerations.

Other Publications

"Multi-Dimensional Mechanism Design with Limited Information," 2012, *Conference Proceedings of the ACM-EC 2012*, (with Dirk Bergemann, Yun Xu and Edmund Yeh)

"Mechanism Design with Limited Information: The Case of Nonlinear Pricing," *2012 2nd International ICST Conference on Game Theory for Networks,* Shanghai, 2011, Lecture Notes of the Institute for Computer Sciences, Volume 75, 2012, pp 1—10, Springer Verlag, Berlin (with Dirk Bergemann, Yun Xu and Edmund Yeh)

Professional Services

Referee: Games and Economic Behavior, Journal of Mathematical Economics

Teaching

Department of Economics, Yale University, New Haven, CT, USA
Teaching Assistant, Econ521b (Advanced Microeconomic Theory), PhD Level, spring 2009
Teaching Assistant, Econ 501b (Microeconomic Theory 2: Game Theory), PhD Level, spring 2010
Teaching Assistant, Econ121b (Intermediate Microeconomics), Undergraduate Level, fall 2009

Department of Finance, LSE, London, UK
Class Teacher, FM250 (Finance), LSE Summer School, July 2012
Class Teacher, FM212 (Principles of Finance), Undergraduate Level, Michaelmas Term 2012
Class Teacher, FM350 (Advanced Corporate Finance), July—August 2013
Class Teacher, FM350 (Advanced Corporate Finance), July—August 2014