WEI QIAO

Personal Data

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Education

August 2016- -July 2022 — Ph.D in Economics (expected), **Pennsylvania State University**, US
Committee: Shouyong Shi (Chair), Neil Wallace, Qi Li
Fields of Interest: Macroeconomics, Monetary Economics, Financial Economics

April 2013- -April 2015 — M.A. in Economics, **Kyoto University**, Japan
Committee: Kazuo Mino (Chair), Akihisa Shibata, Tomoyuki Nakajima

July 2012 — B.A. in Economics, **Chongqing Technology and Business University**, China

Research

An Anatomy of the Repo Market Crash
Job Market Paper

The repo market crash was a catalyst for the great recession in 2008-2009. I evaluate the quantitative importance of the following three factors in that crash: a drop in the price of residential mortgage-backed securities (RMBS), the liquidity drying up caused by asymmetric information in the RMBS market, and the run by repo lenders induced by changes in the fundamentals. On the theoretical side, the main contribution is to construct a tractable and parsimonious model to integrate the RMBS market with asymmetric information and the repo market with strategic complementary lenders. The two markets are connected by buyers in the RMBS market who use RMBS as collateral for borrowing in the repo market. I characterize the stochastic equilibrium of the economy where the quality of RMBS follows a Markov process. With calibration and simulation, the model yields the following quantitative results. First, besides the contribution of the price factor, the liquidity drying up caused by asymmetric information plays a crucial role in every aspect of the repo market crash. It explains 30% of the increase in haircut, 13% of the drop in total repo outstanding, and a large part of the increase in repo spread. Second, throughout the crisis, the fundamental-based run significantly affects the repo rate but only has a small effect on the repo haircut. Third, in addition to the three factors, the general equilibrium effect generated from the interactions between the RMBS market and the repo market explains 33% of the drop in total repo outstanding. I discuss the policy implications of these findings.

Optimal Provision of Costly Currency
with Neil Wallace
Journal of Money, Credit and Banking, vol. 53(2-3), pages 535-554, March 2021

Items of currency wear out and must be replaced. In "The Mechanism of Exchange", Jevons recommended that the government bear the cost of replacing worn gold coins with new coins instead of having the holders of worn coins bear the cost. We study the optima of a minimally interesting model: money is essential and indivisible so that physical depreciation is not neutral; and there are alternative ways of financing the costly replacement of worn currency. The optima contradict the Jevons proposal. People with worn currency bear a cost

that makes them indifferent between getting a new unit and discarding the useless worn unit, a cost that exceeds the physical cost of replacement.

'Conventional' Monetary Policy in OLG Models: Revisiting the Asset-substitution Channel
with Guanliang Hu, Guoxuan Ma and Neil Wallace

Conventional monetary policy involves actions by the monetary and fiscal authorities: the former sets a nominal interest rate and the latter sets lump-sum taxes to finance the implied flow of interest payments on government debt. We model such a policy within an overlapping generations framework and show that absent any other frictions the magnitude of the nominal interest rate gives rise to asset substitution between government debt and either private debt or capital—substitution which has both real and nominal effects. Such substitution is not in standard New Keynesian models because those models use a dynastic specification in which government debt is not net wealth.

State-dependent Wage Bargaining and Inflation Dynamics

I integrate the state-dependent wage adjustment mechanism in Dotsey, King, and Wolman (1999) with a standard random search model. While positive steady-state inflation continuously erodes the nominal wage, a random menu cost on the re-bargaining prevents the wage from changing too often. The trade-off between these two factors endogenously decides the timing of wage re-bargaining and hence the degree of wage rigidity. With the model, I investigate and compare the role of state-dependent wage bargain and period-by-period wage bargain in inflation dynamics. I conclude that they typically deliver very similar impulse response functions. Without any other elements, adding wage rigidity in a state-dependent way cannot alleviate the inflation persistent problem.

Scholarship and Assistantships

2016-2021	Teaching Assistant at the Pennsylvania State University, US Undergraduate Level: International Economics , Economics of Financial Crisis, Intermediate Microeconomics Ph.D Level: Advanced Microeconomics, Advanced Macroeconomics
Spring 2016	Foreign Student Scholarship Nomura Foundation, Japan
Fall 2015	Teaching Assistant at Kyoto University, Japan Advanced Macroeconomics (graduate)

Skills

Languages:	Chinese (Mother-tongue), English (Fluent), Japanese (Fluent, N1)
Computer Skills:	Julia, LaTeX, Matlab, Gams

Reference

Shouyong Shi	sus67@psu.edu Liberal Arts Professor of Economics Phone: (814) 865-2745
Neil Wallace	neilw@psu.edu Distinguished Professor of Economics Phone: (814) 863-3805
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