

Monetary Policy and Shadow Bank Money Creation

■ Economists have traditionally focused on the role of commercial banks in the transmission of monetary policy. Over the past thirty years, however, a group of non-bank financial intermediaries, collectively known as the shadow banking system, have become increasingly important in the economy. Similar to commercial banks, shadow banks transform long-term illiquid assets into short-term, money-like liabilities, but they operate without deposit insurance and regulatory oversight. The amount of shadow bank money has grown rapidly over the past three decades. In the 2008-09 financial crisis, shadow bank money became a major source of systemic risk. In contrast to its importance, we still know little about how the shadow banking system works.

I study the impact of monetary policy on shadow bank money creation. Unlike commercial banks that combine money creation and loan origination under one roof, the shadow banking system breaks down the intermediation process into multiple steps. Each step is conducted by one type of specialized shadow bank. Money market funds (MMFs) stand in the first step of shadow banking intermediation process: they create money-like deposits for households and businesses, and then pass the proceeds to other shadow banks that specialize in loan origination. In this paper, I focus on MMFs because their liabilities consist of the dominant part of shadow bank money in the official money supply statistics.

Using the U.S. money supply data over the past thirty years, I first document a new transmission channel of monetary policy in the shadow banking system. Contrary to the conventional wisdom that high interest rates reduce money supply, I find that shadow banks create more money-like liabilities when the Federal Reserve increases interest rates. This “shadow money channel” partially offsets the reduction of money creation by commercial banks and attenuates the impact of monetary

tightening. Given that the two types of banks are engaging in similar liquidity transformation businesses, it is surprising to see such different responses to monetary policy.

To understand the underlying mechanism, I develop a structural model of bank competition following the industrial organization literature on oligopoly markets.¹ I show that this channel is a result of deposit competition between commercial and shadow banks in a market with heterogeneous depositors.

In the model, commercial and shadow banks provide differentiated depository services to a group of heterogeneous depositors. Commercial banks mainly attract depositors who value transaction convenience. Shadow banks, however, mainly attract depositors who are very sensitive to yields. Depending on their depositor clientele, commercial and shadow banks strategically set their deposit rates to

maximize profits. When the Fed Funds rates are low, both types of banks offer similar rates. This is because commercial banks cannot offer rates much lower than zero given the competition from cash while shadow banks cannot offer rates much higher than zero given the low returns on assets. However, when the Fed raises interest rates, deposit rates of the two banking sectors start to diverge. Commercial banks keep paying low deposit rates because their main clientele, the transaction-oriented depositors, are attached to their transaction services. In contrast, shadow banks raise deposit rates to keep their yield-sensitive depositors from switching to bonds. As a result, monetary tightening widens the spread between shadow and commercial bank deposit rates, inducing some of the depositors from commercial banks switch to shadow banks. This gives rise to the shadow money channel in which shadow bank deposits expand when the Fed tightens monetary policy.

“I STUDY THE IMPACT OF MONETARY POLICY ON SHADOW BANK MONEY CREATION.”

KAIRONG XIAO



BIOGRAPHY

KAIRONG XIAO is a PhD student in finance at the Sauder School of Business, University of British Columbia. His research interests are in banking, financial regulation, and political economy. In particular, he studied how monetary policy affects a group of unregulated financial intermediaries, collectively known as the shadow banks. He has studied whether post-crisis financial regulations such as the Dodd-Frank Act and Basel III have caused liquidity depletion in the U.S. fixed income markets. Mr. Xiao has presented his work at a variety of prestigious academic conferences and institutions around the world, such as the SEC Third Annual Conference on Financial Market Regulation, the Financial Conduct Authority at UK, the Financial Intermediation Research Society Conference, China International Conference in Finance, Northern Financial Association and Financial Management Association annual meetings.

I received the PhD Scholarship from the Canadian Securities Institute Research Foundation in the fifth year of my PhD study. This scholarship provided me valuable financial resources for me to complete my study, and allowed me to present my work in various academic conferences. During the award tenure, I made great progress on my dissertation. I am very honoured to become an awardee of this prestige scholarship.

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To access the quantitative importance of this channel, I estimate the model using institutional level data of U.S. commercial banks and MMFs. The estimation result shows that depositors exhibit significant dispersion in their sensitivity to deposit spreads, and this heterogeneity can quantitatively explain the difference in both prices and quantities of deposits of the two banking sectors.

I further use the structural model to conduct a set of counterfactual analyses. Comparing the actual economy with a counterfactual economy with no MMFs, I find that depositors gain on average 50 billion dollars per year because shadow banks reduce the market power of commercial banks. At the same time, the presence of the shadow banking sector reduces the impact of monetary policy on money supply by 40%.

This finding has important implications for macro-prudential policies. In recent years, many argue that central banks should use monetary tightening as a tool to promote financial stability because monetary tightening can reduce money creation by the banking system which is a key source of financial vulnerability. My findings show that this policy may back-fire because monetary tightening unintentionally drives deposits into the unregulated shadow banking sector, which may create more systemic risk. ■



¹ Berry (1994), Berry, Levinsohn and Pakes (1995) and Nevo (2001).