Statement of Research Interests

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My research interests lie on empirical Macroeconomics with theoretical and empirical I.O. elements and empirical I.O., especially focusing on the banking/financial intermediary industry. My research usually uses empirical I.O. tools to investigate effects of imperfections and competition in the banking industry on welfare and macroeconomic variables. The banking industry plays an important role in the determination of aggregate economic activity. Recent theoretical studies (see Bernanke, Gertler and Gilchrist (1998) and Olivero and Aliaga-Diaz (2006) among others) provide the theoretical foundation for the real effects of the imperfect competition of banking industry in macroeconomics. Their work suggests that market power, competition and market structure in the banking industry are likely to affect macroeconomic performance. Those arguments motivate my research to find empirical evidence showing that imperfections in the banking industry have relevant macroeconomic implications. Banks' behavior, such as entry/exit and branching, also affect social welfare, and have policy implications for anti-trust and regulation. These implications also motivate my research in empirical I.O. of the banking industry.

Current Research

My job market paper (with Maria Olivero), entitled “Switching Costs for Bank-Dependent Borrowers: Do They Matter for the Bank Lending Channel of Monetary Policy?”, studies the relationship between switching costs for bank-dependent borrowers and the effectiveness of monetary policy through the bank lending channel. Bernanke and Gertler (1995) argue that a necessary condition for the existence of the bank lending channel of monetary policy is that bank-dependent firms are not able to costlessly switch to alternative sources of finance when the cost of bank credit rises. Stein (1998) considers the lack of knowledge on how switching costs impact monetary policy as an important limitation to the literature. Our paper is aimed at addressing this limitation by finding empirical evidence of those arguments. In this paper, we first apply the structural I.O. model of Kim, Kliger and Vale (2003) to provide structural estimates of switching costs in the market for bank credit in the United States. Second, we introduce the switching costs into a modified version of the Kashyap and Stein (2000) bank lending channel function to evaluate the impact of those costs on the effectiveness of the monetary policy via the bank lending channel.

Our findings are two-fold. First, we find that switching costs have followed a downward trend until 1999 and have remained pretty stable since then. Second, we show that these costs have an important effect on the environment in which monetary policy is conducted, and that this effect is independent from that of financial constraints of the banking industry itself. Specifically, the
higher switching costs, the larger the impact of monetary policy shocks on the real side of the economy. Our work uncovers policy implications particularly relevant at a time when monetary policy is being heavily used to address recessions around the world, while the financial crisis is leading the magnitude of the switching costs to change.

The 2nd essay of my dissertation, entitled “Switching Costs for Borrowers and Macroeconomic Performance: Are They Correlated?”, asks whether the switching costs for borrowers are correlated with a country’s financial conditions, macroeconomic performance and the market structure of the banking industry. In this paper, I apply the I.O. model developed by Kim, Kliger and Vale (2003) to cross-country bank-level panel data to extract the information of the magnitude of the switching costs for borrowers in the banking industry across a set of countries. I then evaluate the effects of country-level macroeconomic variables and market structural indicators in the banking industry on the estimated switching costs. The preliminary results show that switching costs are significantly higher in developing countries relative to developed countries. These results are not surprising because developed countries have more developed capital markets and financial systems. In well developed financial markets, lenders can monitor borrowers more efficiently and accurately and borrowers can better signal their quality. The asymmetric information problem is less severe in developed markets. As a result, lenders have lower “information monopoly” on their old borrowers against other lenders in the market. I also find that the real GDP growth rate, market concentration in the banking industry and a country’s financial deepening are negatively associated with the magnitude of the switching costs, and that the switching costs are likely to increase during a debt or currency crisis.

The 3rd essay (with Mian Dai), entitled “Does the Deregulation Lead to Over-Entry in Local Deposit Markets?”, evaluates whether free entry to the local banking market in the U.S. results in social inefficiencies. After the Riegle-Neil Act in 1994, banks in the U.S. are allowed to branch in any local market. Economic theories predict that free-entry may result in social inefficiencies if entry bears sunk costs. Whether social inefficiencies exist depends on the values of parameters of entry costs and demand- and supply- side functions (Berry and Waldfogel, 1999). To answer this question, we develop an empirical general equilibrium model to estimate the demand system for banks’ financial services, banks’ supply-side revenue function and banks’ entry costs function. Based on the model, we then use the bank level and branch level data to recover the values of those primitive parameters. Those primitives allow us to simulate the social optimal number of banks in each local market. By comparing the simulated optimal numbers with the actual observed numbers we are able to address the issue that whether social inefficiencies exist in the banking industry in the U.S. The results would be useful for policymakers to evaluate the deregulation and the effects of entry barrier to local banking markets.
Future research

My research agenda focuses on both the macroeconomic implications of entry/exit and switching costs for borrowers in the banking industry, and other issues related to the effects of market structure developments in the banking and financial sectors on social welfare.

Below I present some of the future research projects that I hope to be able to conduct.

Olivero and Aliaga-Diaz (2007) argues that banks’ price-cost margins are countercyclical because of banks market power due to the switching costs for borrowers. Those countercyclical price-cost margins act as “financial accelerators” to propagate the business cycles. My objective is to estimate the structural parameters of the Dynamic Stochastic General Equilibrium (DSGE) model developed in the paper. Fernandez-Villaverde (2009) shows that the reduced form of DSGE can be represented by a state-space model. Therefore the structural parameters of the DSGE model can be estimated via a state-space based Bayesian method. Knowing the values of the structural parameters of the model helps us understand the quantitative effects of the “financial accelerators” suggested by the countercyclical net interest margins.

Another objective in my agenda is to explore the existence of the transmission of the business cycles through the NIMs. Olivero (forthcoming) argues that the countercyclical NIMs in banking are an additional channel through which business cycles can be transmitted from one country to the other. No existing empirical studies ever address this issue. To answer this question, I plan to simplify Olivero (forthcoming) model into a version with explicit empirical predictions, and apply either empirical I.O. tools or time series techniques to test the predictions of the model.

My future research also includes exploring banks’ entry and branching behavior in a dynamic environment. I plan to extend banks’ entry decisions examined in my dissertation into a dynamic framework. Recently Pakes, Ostrovsky and Berry (2004) and Bajari, Benkard and Levin (2007) have considerably reduced the computational burden of estimating the structural parameters of dynamic model incorporating entry and exit. My objective is to recover the sunk costs of entry to local deposit market assuming banks maximize the net present value of their post-entry life time profits. With the assumption of unique equilibrium the observed probability of entry/exit reveals banks’ sunk costs and revenue function.

Meanwhile, the optimal branching strategy of national banks such as Bank of America and Wellsfargo Bank has not been explored yet in existing literature. An additional branch of such chained banks benefits their own existing branches through the network effects but also hurts the branches of their own and their competitors through business stealing effects. Meanwhile, particular banks are likely to cluster their branches in some areas. Hence the competition among banks in different areas is likely to have different patterns. Understanding the competition among banks through their branching decisions has special policy implications for anti-trust and regulation. I
am planning to construct a structural competition model based on reduced-form bank-specific profit functions to investigate the branching behavior. The major challenge of the model is the state space of branching strategy which includes almost infinite possible branching choices. To deal with this challenge, I plan to apply the maximum scores method of Fox (2008) to estimate the model. The maximum scores method identifies parameters based on the assumption that a slight deviation from observed equilibrium will decrease firms’ (banks’) profits. This identification strategy reduces the dimension of the state space of branching strategy and makes the structural model tractable.

References


