Switching, Lock-in and Competition in China's Banking Market

中国借贷市场转换、锁定与竞争行为研究

（英文版）

尹威 著

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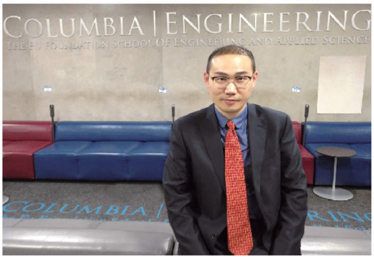

尹威（1983-），男，博士，东南大学金融学副教授，硕士研究生导师，江苏省2016年“双创计划”引进人才。2014年获得英国卡迪夫大学（Cardiff University）经济学博士学位后到东南大学任教至今。研究领域包括大数据经济学、大数据风控体系、互联网金融、借贷平台、银行与金融市场等。当前主持国家自然科学基金课题1项、江苏省哲学社会科学基金课题1项和江苏省金融工程重点实验室课题研究1项，在*Applied Economics*（SSCI），*Emerging Markets Finance and Trade*（SSCI），*Singapore Economics Review*（SSCI），*Applied Economics Letters*（SSCI），《管理科学》《管理世界》《世界经济》《国际经济评论》《金融评论》等期刊发表论文20余篇，成果被引用累计达200余次。获得2017年东南大学微课竞赛二等奖，第24届东南大学青年教师授课竞赛三等奖（前15%）等荣誉。

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内容提要

本书共分 6 章。第 1 章介绍了全书的研究背景、动机、目标、主要贡献，以及框架结构。第 2 章对中国银行业的发展和现状进行了简要的回顾和介绍。第 3 章从理论和实证两个层面研究了市场竞争下转换成本的决定因素及其对银行利润的影响。第 4 章基于微观贷款合同层面，探讨了银企关系中的转换成本以及企业转换银行借贷行为的决定因素。第 5 章从理论上探讨了保持单一和多重银企关系的利弊以及最优选择，并通过实证研究分析了其决定因素。第 6 章总结了全书的主要研究结论，从应用视角提出了相关对策建议，以及未来潜在的研究话题。

本书可供金融学方向研究人员、从业人员、学生等阅读。

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Preface

This book is based on my PhD. thesis, which is titled as *Switching Costs in China's Banking Market*. Switching costs can bring extra profit to the side that make use of them. It means quite a lot for both banks and firms in China's banking market. However, in the case of China, the topic about "switching, lock-in and market competition" is a relatively unexplored area of research. The book try to fill the gap and give a hint to following studies.

This book analyzes switching costs in China's banking market in three main aspects. First, the book examines a model that investigates the effect of switching costs in the Chinese loan market on banking profitability. In keeping with the extant empirical literature it reports a positive relationship between bank profitability and switching costs. Furthermore it reports the estimation of a systems model of switching costs determination and profitability determination. The main result is that bank size measured by total assets is positively related to switching costs, while the ratio of deposits to assets is negatively related. The study also finds that banks that have higher cost-income ratios have a negative impact on switching cost. Second, this research examines the drives of firms switching from one bank relationship to another. The results show that the principal drive of a switching action is the credit needs of the firm and a mixture of firm and bank characteristics. The findings support the extant literature that less opaque firms are able to switch more readily than opaque firms. The results also suggest that banks that develop their fee income services are more effective in locking-in their borrowers. Third, this book determines the factors that decisions of firms to keep single bank loan providers or multiple bank loan providers. The results show that large firms are more likely to switch from single to multiple lending relationships. This study also finds that medium size and small firms with high quality prefer a single borrowing relationship while larger and higher quality firms are more likely to be involved in a large number of banking relationships. Increasing market competition decreases the probability of single bank-firm relationship.

It is my great honour to express my deeply-felt gratitude to my PhD supervisor, Professor Kent Matthews, who provides me with inspiration, guidance and insight into my research. He has supported me throughout my thesis with his patience, motivation, enthusiasm and immense knowledge. Without his encouragement and effort, this book would not have been possible to complete. I have benefitted incredibly from those regular and irregular meetings I have had with him. I would never reach where I am today without his continuous advice, comments and critiques.

Much appreciation and sincere thanks must go to Professor Patrick Minford for the generous scholarship and teaching opportunities, as well as many other types of support during my PhD studies. I would also like to thank Professor Kul Luintel, Professor Gerald Makepeace, Professor Jason Xiao, Professor Bin Qiu, Dr. Yan Yang and Dr. Zhirong Ou who were kind enough to give comments and share their knowledge with me.

Lastly, I am very much indebted to my beloved parents, Mr Xianzhang Yin and Ms Ling Zhu for their continuous support and encouragement.

Special thanks to my wife, Xuan Zhou. She has been there for me throughout the academic years enjoying all the highs and supporting me throughout the lows.

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Contents

Chapter 1
Introduction

Switching costs, which arise from the asymmetry of information between firms and banks, cement the bank-firm relationship (Shy, 2002; Kim et al., 2003; Vesala, 2007). Banks manage to gain the extra rent from their customers based on the lock-in power that is generated by switching costs, which weaken the substitutability of loans provided by different banks. However, since long and close bank-firm relationships have high likelihood to make firms involved in lock-in problems, a number of previous researches have pointed out that a large proportion of firms have considered switching to another bank to overcome the financial constraint when being dissatisfied with their existing lending relationship. Meanwhile, firms are also more likely to be locked-in by the relationship bank and face higher switching costs, when they are borrowing from a single bank with lower monitoring costs and collateral requirements (Farinha and Santos, 2002). The decisions of firms to keep single or multiple banking relationships are based on the dual of externality of efficient single lending or anti-informational lock-in and less liquidity risk multiple lending.

Focusing on the above three points, this book analyzes switching costs[①] in China's banking market. First, the book examines the magnitude of switching costs and the effect of switching costs in the Chinese loan market on banking profitability. Second, the bank-firm relationship and the

① This thesis focuses on the switching costs caused by information asymmetry.

drives of firms switching from one bank relationship to another are investigated. Finally, it investigates the determinants of firms' choice on single or multiple banking relationships.

1.1 Background and Motivation

Switching costs in banking represents a source of rent that reduces the competitiveness of the market. In addition to the administrative costs of changing a bank account, it is conjectured that in the loan market there are additional costs associated with informational asymmetries that the existing lender is more informed about the quality of the borrower than a potential new lender. It is argued that a borrower may face non-negligible switching costs when switching between banks in the Chinese banking market. High enough switching costs may completely prevent borrowers from switching and lock them in with their incumbent banks.

The confidentiality associated with the customer-loan relationship allows banks to exploit their informational advantage over competitors and lock-in their incumbent customers to earn higher positive expected profits on repeated lending. Previous research has pointed out that a large proportion of firms have considered switching to another bank to overcome the financial constraint when dissatisfied with their existing lending relationship. However, a strong bank-firm relationship gives banks a monopoly power through information collecting, which can result in negative effects on firms. Firms will face a non-favourable loan offer with higher interest rate from "outside" banks because of incomplete information about the firms' financial condition. For "outside" banks it is hard to distinguish "good" and "bad" firms. That means the informational disadvantage and lock-in problems can limit the ability of firms access to external finance resulting in financial constraints. Yet, firms switching their relationship banks have also been widely observed in the lending market.

Plainly a long-term and stable bank-firm relationship is not the only choice for firms. They have a high probability to switch when they face severe financial constraints which cannot be solved by the existing bank. The longer the existence of the incumbent relationship, the higher the probability is that the borrower will more easily find another lender (Greenbaum et al., 1989). Since the switching costs arising from asymmetric information makes the switching action costly, the switching behaviour is observed heterogeneously across firms. Firms' transparency, external fund requirement and financial characteristics are the factors that drive the decision to switch lenders. Banks' lending decisions are not homogenous either, which significantly affects a borrower's access to external financial resources.

Other than switching or non-switching, firms need to make the decision on single or multiple banking relationships based on their characteristics. Whether a firm maintains a single or multiple lending relationships with a credit provider is the outcome of a company's strategic financial policy. Models of single or dual firm-banking relationships have been developed by Bolton and Scharfstein (1996) and Von Thadden (1998), but the literature is less clear on the single versus multiple firm-bank relationships. While firms borrowing from a single bank face lower monitoring costs and collateral requirements (Farinha and Santos, 2002), they are also more likely to be locked-in by the relationship bank and face higher switching costs. However, multiple firm-banking relationships can reduce the probability of liquidity risk and informational lock-in. But at the same time a multiple firm-bank relationship can involve significant transaction and monitoring costs.

A number of studies claim that firm size has a significant influence on the number of bank relationships. Large firms usually require a wide range of banking relationship in order to satisfy firm-specific credit needs (Ongena and Smith, 2000; Detragiache et al., 2000). While it is a standard finding that multiple bank relationships are usually associated with large firms, medium size and small enterprises are widely observed borrowing from more than one bank in countries like US, Portugal and Germany (Petersen and Rajan, 1994; Farinha and Santos, 2002; Brunner and Krahnen, 2013). A firms' quality is also another key variable that affects the number of bank relationships (Petersen and Rajan, 1994). Low quality firms are usually unable to increase the credit requirements from incumbent banks and needs to seek outside banks for help. From a lender's perspective, banks are willing to share bad credit clients with others in order to decrease their risk. Besides, banking market competition has been suggested as a main factor that could interpret the number of bank relationships. Single or multiple banking relationships can also reflect the level of competition from the credit demand side. A multiple firm-bank relationship is also more likely in an environment of competition between banks (Machauer and Weber, 2000).

The Chinese banking market is large and expanding. By the end of 2012 there were over 400 banks operating in China. However, there has been little in the way of research papers that investigate the topics of switching costs in the banking sector. What has been published focuses on the credit card or deposit market with the use of survey data or macro data. While these studies recognize the significance of switching costs on banks' market share and profits, there has been no study of switching costs in the loan market, or the determination of switching costs.

The reform period beginning from 2001 has made remarkable improvements in the performance of the banks, especially for the large commercial banks. The average non-performing loan ratio of the major commercial banks in China decreased from 17.9% in 2003 to 0.9% in 2011. Unlike the past where the banks served only to the socialist plan, Chinese commercial banks have focussed on credit quality when making lending decisions (Chang et al., 2009). Banks collect more information about firms' private financial information in order to lower the associated lending risk. As with many emerging economics bank credit remains the main funding source for firms in China (Allen et al., 2005). The opacity of business in China, and information asymmetry are viewed by some as the key impact variables that define the lending relationship (Chang et al., 2009; Cao et al., 2010). But it is not simply the characteristics of the firm that matter, the lending bank's identity influences the lending decision and determines the quality of the bank-firm relationship (Hao et al., 2013).

Modern credit risk management methods and risk pricing since 2004 is standard practice (He and Wang, 2013). Loan quality is an important factor in the lending decision. Banks reduce their loan exposure to individual enterprises and widen the loan portfolio to more firms in order to diversify the risk. Large firms are more attractive for banks since they are less likely to default (Chang et al., 2009). Single firm-bank relationship is associated with SMEs (small and medium size enterprises). Relevant research has suggested that keeping a large number of banking relationships is not an optimal choice for them (He and Wang, 2009).

1.2 Objectives and Contribution

The three main objectives and contribution of this study are as follows:

First, this study seeks to fill a gap in the applied literature and enhance the understanding of the magnitude of switching costs in the loan market and its influence on profits in China's banks. The objective of this part is twofold. Since switching costs are heterogeneous across banks and cannot be observed, this research applies the structural model developed by Shy (2002) to measure the switching costs for each bank in the data sample, and analyse the determinants of the magnitudes of switching costs in the Chinese banking sector and their effects on banks' profits in a simultaneous equations system. Consistent with previous studies with other countries' data, this research finds that bank size shows a positive relationship with switching costs; and switching costs enhance the profit banks earn from their consumers in the Chinese banking market. However, a particular Chinese feature is that this positive relationship is non-linear so that switching costs increase at a decreasing rate such that very large banks (the state-owned banks) exhibit lower switching costs than smaller banks. The principal new findings highlight that switching costs increase with the efficiency level of banks; and foreign banks implement low switching costs and profits because they are in a weak position relative to domestic banks.

Second, the topic of why firms switch banks is a relatively unexplored area of research, especially in China's banking market. This book attempts to make a contribution to fill this gap. The research findings are that firms usually switch banks for larger amount of loans and longer lending durations; and large firms, that are usually more transparent, have a higher probability to switch than small firms. These two findings are new in China's banking research and consistent with the results of previous studies with other countries' samples. The principle new findings in this research are that ① strong financial conditions of the firm increase the likelihood of forming a new bank relationship; ② firms are more likely to switch to small market share banks, or low profitability banks, to seek more favourable lending contracts; ③ firms are less likely to switch banks that offer a bundled service of loan and bank services in order to avoid the lock-in problem.

The topic of single versus multiple banking relationships in the Chinese lending market is also an unexplored area of research. This book also attempts to fill this gap. The principal findings, conform with the general findings of the literature, which are that ① the probability of a firm having multiple banking relationships increases with firm size; ② among all samples, firms with higher cash flow ratios (high quality) are more likely to maintain a single relationship; ③ increasing market competition level reduces the probability of single bank-firm relationship; ④ firms that have a relationship with large banks are more likely to be involved in multiple lending relationships. The new finding of this research is that medium size and small firms of high quality tend to have a single relationship as well as large and high quality firms are more likely to have a large number of lending relationships.

1.3 Outline

The following part of this book includes five chapters. The remainder of the book is organized as follows:

Chapter 2 discusses institutional details about recent banking reforms, the Chinese banking system; the improvement of banks' credit quality and loan distribution of firms in recent years.

Chapter 3 introduces the characteristics of the Chinese banking industry and reviews the relevant theoretical foundation and the literature on switching costs. It goes on to describe the methodology of the relationship between switching costs and competition, and develops the empirical model based on the framework. Using a sample of 151 banks over the period 2003 to 2010, this chapter examines the effect of switching costs in the Chinese loan market on banking profitability.

Chapter 4 firstly reviews the relevant theoretical foundation and empirical research on asymmetric information, bank-firm relationships and the determinants of firms switching decisions. Then it describes the methodology and summarizes the main hypotheses of this study. A framework of firms' switching decision is developed. Based on this framework, an empirical model is derived. Lastly, this chapter uses a sample of matched data on firm-bank lending in China over the period 1999—2012 to examine the drivers of firms switching from one bank relationship to another.

Chapter 5 firstly reviews the relevant theoretical foundation and empirical research on the topics of single or multiple banking relationships and the optimal number of banking relationships for firms. Then it describes the methodology of firms' banking relationship decisions and summarizes the main hypotheses of this study and introduces the models for empirical studies. In the empirical part, this study examines 1639 firms' single and multiple borrowing data during the period 2003—2012.

Chapter 6 is the conclusion. It provides a discussion of the overall findings and implications of this research and highlights the confirmatory aspects of the research that is already known about the Chinese banking market as well as the novel features of the research about what is not generally known about the Chinese banking.