

Analysis of Regional Financial Institutions in the Environment of Structural Changes

戴, 建中

<https://doi.org/10.15017/1500490>

出版情報：九州大学, 2014, 博士（経済学）, 課程博士
バージョン：
権利関係：全文ファイル公表済

氏 名 : 戴 建中 (Dai Jianzhong)

論 文 名 : Analysis of Regional Financial Institutions in the Environment of
Structural Changes
(経済の構造変化に直面する地域金融機関に関する分析)

区 分 : 甲

論 文 内 容 の 要 旨

Regional banks play a very important role in the economy. Thus many countries have implemented varied forms of programs to restructure the regional banks when they try to reform their economies. This dissertation tries to explore the effect of these financial restructuring on the regional banks. The dissertation focuses on the effects of financial restructuring on three important areas of the regional banks: credit supply, risk and efficiency of the banks itself. Compared to the previous studies in this field, the dissertation touched upon more areas connected with the healthy operation of a banking system. It also used many updated statistical and econometric techniques. Hence it is a more thorough and robust analysis in this topics.

The dissertation uses Shinkin banks in Japan and city commercial banks in China as the object of the research. The first three chapters of the dissertation analyze the measurement and determination of efficiency and productivity changes of Shinkin banks in Japan during the period of 2001-2008 (Fiscal Year). The dissertation tries to find how the efficiency and productivity of Shinkin banks changed during the period and how these changes related to the financial restructuring in the same time.

The dissertation uses a two-stage approach to achieve this aim. At first stage, based on the theoretical background explained in Chapter 3, Chapter 4 offers a robust estimation of the efficiency and productivity changes in Japanese Shinkin banks from 2001 to 2008 (Fiscal Year). A measurement called hyperbolic-oriented distance is used to measure the efficiency. A non-parametric method called Data Envelopment Analysis (DEA) is used to estimate the distances. Based on the estimated efficiency scores, a widely used index called Malmquist index is employed to measure productivity changes in Shinkin banks. To overcome the shortcomings of the DEA method, a non-parametric, smooth bootstrapping method is used to establish the confidence intervals and significance levels for the estimated results. The efficiency scores and Malmquist index are decomposed to examine the sources of the trends of efficiency and productivity changes. The estimated efficiency scores and index are further grouped according to the asset levels and the market powers of the sample banks to explore the influence of bank scale and market power of the Shinkin banks on their efficiency and productivity changes, respectively.

By analyzing estimated scores, the dissertation identifies the trends in efficiency and productivity changes in Japanese Shinkin banks during the study period. The dissertation finds that on average the efficiency

under the assumption of variable return to scale (*vrs*) significantly declined from 2005 to 2008 (Fiscal Year). But the scale economy (*sc*) significantly increased in the same period. It overcame the negative influence of the *vrs* and let the efficiency measured under the assumption of constant to scale (*crs*) significantly increased. The dissertation also finds that in the latter half of the study period, productivity significantly declined, primarily because of deterioration in technical efficiency, but scale efficiency significantly improved. Grouping the total sample according to the levels of assets and competition reveals more details of the trends of efficiency and productivity changes in Shinkin banks.

Based on the estimated scores obtained in Chapter 4, Chapter 5 further explores the effects of merger and acquisition activities (M&A) occurred in Japan during the period of 2001-2004 (Fiscal Year) on the efficiency and productivity changes in Shinkin banks during the period of 2005-2008 (Fiscal Year). At first, the efficiency scores estimated in Chapter 4 are used as the dependent variables. A truncation model is used to estimate the parameters. Next, the Malmquist index and its components estimated in Chapter 4 are used as the dependent variables. The dissertation utilizes a system of equation approach to analyze the determination of productivity changes. In the analysis, to cope with the non-parametric approach used in estimating the dependent variables as well as to deal with the complex problems involved in the model, the dissertation uses a semi-parametric bootstrapping approach to test the significance of the coefficients in the model.

The dissertation shows that M&A incidents have no significant effects on the Malmquist index. But they have significant effects on the efficiency scores and two components (technical and scale efficiency) of the Malmquist index. It also discovers that some other factors related to M&A have significant positive effects on the efficiency and productivity changes. In addition, the dissertation finds that the medium sized banks are ranked first in scale economy. This empirical result implies that the policy maker should try to find the optimal scale for a regional bank and only encourage M&A among small banks

The last two chapters concern how the implementation of the capital adequacy ratio (CAR) – an important bank risk control policy – affected the loan supply ability and safety of the city commercial banks in China. Chapter 6 surveys the theoretical literature about the endogenous relationship between loan supply, bank capital, NPLs and economic environments. Based on this literature review, the dissertation tries to build a theoretical model to describe this endogenous relationship.

Chapter 7 tries to empirically check the effects of capital regulation on the loan supplies by using a sample of city commercial banks in China during the period of 2005-2008 (Calendar Year). The dissertation develops a simultaneous equation models (SEM) to analyze the endogenous relationship between capital changes, loan growth and non-performing loans (NPL). The dissertation shows that during the sample years, capital condition indeed became a strict constraint for the loan growth of these banks. This constraint also became more and more strict and significant across the sample years as the implementation of the policy carried on.

In conclusion, the dissertation supports the view that restructuring programs are generally beneficial to the improvement of productivity and the soundness of the regional banking systems. This may offer some theoretical supports for the further bank restructuring in these two countries as well as in other countries.