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The influence of government intervention on the trajectory of bank performance during the global financial crisis: A comparative study among Asian economies☆

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ABSTRACT

The global financial crisis that started from 2007 onwards spread around the world and impacted the performance of banks in major economies. Many governments have used a variety of intervention policies to recover their financial systems. By examining the dynamic changes in bank performance before and after government intervention, this study demonstrates the use of the piecewise latent trajectory model. We used the data collected from Bloomberg for banks of five major Asian economies, Japan, South Korea, Hong Kong, Singapore and Taiwan, over the eleven-quarter period from the 4th quarter of 2007 to the 2nd quarter of 2010 on six financial performance indicators reflecting solvency, credit risk and profitability. The change patterns of bank performance before/after government intervention during the global financial crisis have been compared among the five economies. Our empirical results indicate that, on average, the bank performance in terms of solvency, credit risk, and profitability improves after government intervention. Moreover, the influence of government intervention on bank performance depends on the evaluative financial indicator, the economy, and whether banks are internationalized. South Korea and Hong Kong have been identified to be the economies with stronger bank performance after government intervention. Policies demonstrated useful in South Korea and Hong Kong have been summarized and discussed.

1. Introduction

In 1929, the U.S. financial system collapsed, the stock market crashed and in less than two weeks, more than 300 billion USD worth of wealth disappeared. This economic crisis quickly spread to other economies also, resulting in the Great Depression. Nearly 80 years later, another financial disaster that began in 2007 because of the U.S. sub-prime mortgage crisis resulted in a snowball effect that has continued to hurt financial markets since then. In 2008, Merrill Lynch was acquired by Bank of America, AIG (American International Group) reported huge losses, the U.S. government took over the management of Fannie Mae and Freddie Mac, and Lehman Brothers Holdings Inc. and Washington Mutual, the largest savings and loan institution in America, announced bankruptcy, making the Federal Reserve Board provide emergency relief.

The global financial crisis in 2008 was a chain reaction of credit risk inherent in engineered financial instruments. It was the combination of three financial products, Residential Mortgage Backed Securities (RMBSs), Collateralized Debt Obligations (CDOs), and Credit Default Swaps (CDSs), in addition to some other major products, that caused the sub-prime mortgage crisis which later spread across markets. Since many financial products are international and liquid, the American financial crisis had a contagion effect on all economies around the world. The crisis pushed the world economy into a severe recession. It also led to shrinkage of the job market, lack of funds in credit markets, soaring of commercial interest rates, and downturn in the real estate market. American financial institutions reported significant losses in the fourth quarter of 2008 while Europe encountered shortfalls in both domestic and external demands.

The global financial crisis also impacted Japan and the "Four Asian Dragons" (South Korea, Hong Kong, Singapore and Taiwan), which had been rapidly growing export-oriented economies since 1970, until they were hit by the Asian financial crisis of 1997. They were inevitably affected by this global financial crisis as well. Asian banks' earnings suffered from the crisis and their existing financial

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problems were worsened. They were faced with many unexpected challenges.

At the most critical moment during the financial crisis, nine U.S. financial institutions that were on the verge of collapsing received government's financial aid. They had a combined total loss of close to 100 billion USD in 2008, forcing the U.S. government to inject 175 billion USD into the Troubled Asset Relief Program (TARP), making this a pioneering act of government intervention in an effort to stave off an even more massive financial crisis. Most European bailout programs combined government guaranteed debt issuance programs with direct equity injections. National governments around the world were trying to save stock markets from collapsing, in an effort to resolve the worsening financial crisis. Issues regarding regulation in response to the financial crisis have been discussed (e.g., Goodhart, 2008; Krimminger, 2008; Praet and Nguyen, 2008).

Now that we have faced a global financial crisis not seen in a century, we need to assess whether the Asian governments intervened properly. Since the bank industry, with high financial leverage, is closely connected with the financial system, and bank performance reflects directly financial stability, the bank industry should receive particular attention. Has bank performance improved after intervention during the global financial crisis? The focus of this study is to examine whether government intervention can exert influence on the trajectory of bank performance, and to compare the effects of intervention among different economies. Specifically, there are three research purposes of this study. First, we analyze the changes in bank performance over time for five Asian economies (Japan, South Korea, Hong Kong, Singapore and Taiwan) before and after government intervention during the financial crisis. These five economies are chosen because of their similarities in openness, geography and the preponderance of their financial markets. Second, we compare the differences among these economies. Third, we summarize remedial devices that have been demonstrated useful and discuss some policy implications.

This paper is, to the best of our knowledge, the first study that applies the piecewise latent trajectory model to analyze the change in bank performance over time, before and after government intervention. The model is useful for describing the change of trajectory that occurs after a particular important point in time and conducting comparisons (Flora, 2008). Section 2 reviews related literature. Section 3 presents the method. Section 4 shows the empirical results and discusses some policy implications, and Section 5 gives the conclusion.

2. Related literature and hypotheses

2.1. Financial performance indicators for banks

Mishkin (1999) indicates that a bank is a financial intermediary and makes a profit through transactional processes, such as the selling of debt (accepts customers' deposits) and purchasing of properties (extending loans to customers). When the U.S. Financial Supervisory Authority evaluates the financial position of a bank, it uses the CAMEL standard, which is an internationally recognized rating system for financial institutions, and uses the indicators for capital adequacy, credit risk, management, earnings and liquidity. Solvency is a key factor to financial market efficiency and stability (Barrell et al., 2010; Raddatz, 2006); in the event of the market worsening, the crisis is then attributed to a lack of liquidity and insolvency.

Stojanovic et al. (2008) analyze whether banks underwriting mortgages increase their risk, by using CAMEL financial and economic variables regarding capital adequacy, credit risk, profitability, liquidity risk, and sensitivity. Arena (2008) find that bank fundamentals significantly affect the likelihood of bank failures for the banks in East Asia and Latin America, based on the indicators of asset quality, solvency, liquidity, return on assets, and interest rates and deposits. Zopounidis (1998) uses the principal component factor analysis to conduct dimension reduction for financial indicators. The resulting factors included solvency, investment activity, capital structure, and profitability. Raveh (2000) uses the co-plot method, a two dimensional graphic display technique, to evaluate a bank's performance by analyzing liquidity, investment activity, capital structure, and profitability of the bank.

2.2. Effects of government intervention

When President Reagan assumed the Presidency in 1981, the U.S. economy was caught in an extremely unusual dilemma comprising severe inflation and rising unemployment. It was in this environment that the economic policies that came to be known as "Reaganomics" were born. At the time, it was considered to be a strategy that actively faced reality and quickly adopted counter measures to address the dilemma. On one hand, the government adopted a fiscal policy of reducing taxes and tax rates while increasing government spending (such as a substantial increase in military spending); on the other hand, the Federal Reserve adopted a policy of reducing interest rates to increase money supply for encouraging investment and stimulating economic development. As a result, there was significant improvement in terms of inflation and the unemployment rate and financial markets were once again active, implying that government intervention can lift economy and financial markets.

Research on changes in performance of the various types of banks has shown differences between public sector and private banks in the Indian commercial banking system, indicating that the average efficiency was higher among public sector banks because of their higher credibility and competitiveness supported by government (Bhattacharyya et al., 1997). Ongena et al. (2003) analyze the Norwegian banking crisis during the period 1988–1991 and find that both Norway and Japan started facing the financial crisis roughly at the same time. However, because of intervention by the government, Norway overcame its financial crisis in four years while Japan continued to suffer. In the 1980s, Japan faced a highly risky mortgage market, endless problems with the financial institutions, and relentless appreciation of the Yen because of foreign pressure. After a couple of failed rescue attempts by the Ministry of Finance, Japan subsequently experienced a financial disaster. During the Asian financial crisis (1997–1999), capital injections by the Japanese government were meant to save the banks. However, the result was ineffective due to insufficient funding. Hoshi and Kashyap (2010) have described in detail the three phases of the Japanese crisis. They also examine major responses by the Japanese government to the financial crisis and show the success or failure of various government interventions. They conclude that government interventions are only partially successful in recapitalizing the banks. The Japanese government intervention seems to be unsatisfactory. The drag the Japanese economy has experienced might be because of improper handling of banks during the entire decade in the 1990s. Drawing some lessons from this, the Taiwanese government started a financial revolution of sorts in 2001 when it aggressively started eliminating idle banking accounts and re-establishing active financial motivations. By joint efforts of all concerned parties, all idle banking accounts were closed and more funds were released into the market, and nonperforming loans ratio was significantly reduced. This was taken as a successful effect of the 1st financial reform, but the huge cost was paid by the whole society (Hsiao et al., 2010). South Korea also