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What Caused the Soaring Non-Performing Loans in Taiwan from the Late 1990s to the Beginning of 2000s? Evidence from Panel Data of Domestic Banks

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Abstract

This study investigates the causes of soaring non-performing loans (NPLs) in Taiwan so as to prevent its reoccurrence. Five economic and financial factors are employed to examine their impacts on the increasing NPLs which led to the banking crisis in the late 1990s and the early 2000s. Empirical evidence indicates that financial deregulation, soundness of bank management, and changes in land prices have significant impacts on the financial instability in Taiwan by applying both Hierarchical Cluster Analysis and Panel Data Analysis. Among the lessons that emerge from this study is the obvious case for strong banking regulations and supervision to avoid the perilous waters of financial liberalizations. Furthermore, it is important to strengthen the efficiency of bank management and improve the quality of loans and asset portfolios by reducing the dependency on land-secured loans. This also may be applied to the subprime mortgage crises in 2008.

Keywords: Non-performing loans, Banking Crisis, Panel Data, Taiwan.

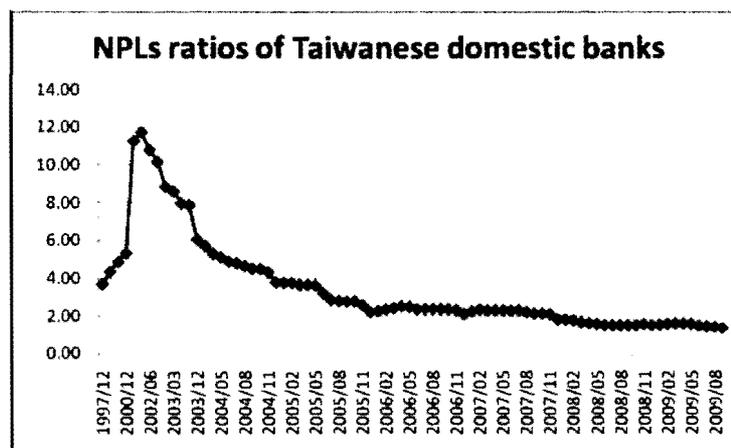
1. Introduction

Asian financial crises caused by East Asian countries were heavily dependent on the borrowings from foreign lenders. The sudden withdraw of foreign capital and the consistent current account deficits in these countries attributed to the crises. Higher current account surplus and saving ratios, the lower saving-investment gap, and the prudent exchange rate policy were the major buttresses that enabled Taiwan to withstand the Asian Financial Crisis in 1997 (Kuo and Liu) [15]. In addition, the economic growth rate remained above 6% in Taiwan in 1997 so Asian financial crises had less negative impact on Taiwan. On the other hand, the continuous declines on return of assets (*ROA*) and return on equity (*ROE*) of Taiwanese banking industry in the late 1990s

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provoked the Economist [10] and Montgomery [22] to make precautionary alerts of “a looming banking crisis in Taiwan.” Huang et al. [12] suggested the above two papers caused competent authorities in Taiwan to take prompt preventive measures to avoid further deterioration of the banking crisis. Taiwan weathered the Asian Financial Crisis in 1997 remarkably well. It also considerably lowered the non-performing loans (NPLs) ratios of domestic banks from nearly 12% in 2002 to around 2% in 2006.

However, there is little attention paid to the causes of the rising NPLs in Taiwan. As Lin et al. [20] stressed, “What was the fundamental cause of the past NPL problem? Was it caused by the overly aggressive extending of loans? Or was it caused by lax scrutiny of credit applications?” Also, Huang et al. [12] regard: “.the challenge faced by policymakers in this regard is to address the fundamental quality issue of banking and particularly lending operations”. It is still important to identify what the determinants are of the banking crisis in Taiwan so as to prevent its reoccurrence, though the very high NPL ratios were brought down to normal levels in 2006. In fact, it was estimated that the NPLs of all financial institutions in Taiwan once exceeded more than one trillion New Taiwan dollars (around thirty billion US dollars). Most state-run banks were forced to be restructured. For instance, the merger of Chiao-Tung Banks and International Commercial Bank of China became the largest banks in terms of assets in Taiwan in 2006. Also, most of the banks were established after the government lifted the ban of setting up new banks in 1991, and the banks which were originally regional until the government relaxed their business operation areas in 1992, were merged together or acquisitioned during this period. Later, in 2006 and 2007 there was a credit card loans crisis in Taiwan. Tsai [31] provide in-depth research on the problems of Taiwanese banks during this time. The average NPLs ratios of all banks still remain below 2.5% in 2006 and 2007. This is less significant in comparison to the banking crisis in the late 1990s and the early 2000s (see Figure 1).



Data source: Taiwan Economic Journal (TEJ)

Figure 1. NPLs ratios of Taiwanese domestic banks.

The banking crisis during the late 1990s and the early 21st century was the worst in Taiwan in the fifty years. However, little has been discussed and few studies have been conducted about what caused the soaring NPLs and the banking crisis in Taiwan. An understanding of the factors related to a financial institution's rising non-performing loans and failures will enable us to manage and regulate banks more efficiently. In other words, if examiners and regulators can detect problems early enough, regulatory actions can be taken either to prevent a bank from failing or to minimize the costs for the competent authorities and the taxpayers. Therefore, a study on the causes of rising non-performing loans and banking failures is very important. This motivates our investigation into the underlying causes of the rising NPLs in Taiwan.

We only focus on the period of 1987 to 2005 because the government started a series of financial deregulation in the late 1980s and the NPL hit an all time high, nearly 12% in 2002. Also, economic growth rates gradually rebounded by 6.2% high in 2004 from -1.65% in 2001. The GDPs sustain a reasonable growth rates at 4.7%, 5.4% and 6% from 2005 to 2007 according to the data released by National Statistics, Taiwan. In addition, the data of many nation-wide and most regional banks are not consistent due to mergers and acquisitions after 2005.

We hope to identify variables that are of relevance to the causes of the banking crisis in Taiwan. Five macroeconomic and financial factors closely related to the NPL problems in Taiwan are adopted according to the findings of previous literature and empirical studies. We first employ Hierarchical Cluster Analysis and two groups of banks are identified. The two groups include nation-wide banks and regional banks. Panel Data Analysis is used to evaluate the significance of the five variables to the banks' NPLs. The results of Cluster Analysis are consistent with those of using Panel Data Analysis. Both results imply that the lift of the ban of establishing new banks in the early 1990s resulted in the increasing competition of making loans and led to soaring NPLs and the banking crisis in Taiwan.

The paper is organized as follows: Section 2 reviews early literature and attempts to identify the possible causes of the non-performing loans problem in Taiwan. Section 3 describes the data and the methodology used in the empirical analysis. Section 4 reports the results of the research for transferability to Taiwan. Section 5 concludes our paper.

2. Literature Review on the Causes of Non-performing Loans

We review previous literature of banking of crisis in general and the early studies specifically focused on the case in Taiwan. We attempt to identify the determinants of banking crises in general and those that can be applied to the case in Taiwan.

Various formal aggregate studies (Altman [1], Altman & Eisenbeis [2], Ohlson [23], Zmijewski [35], Thomson [30], Tam & Kiang [28], Olmeda & Fernandez [24], Rahman, L.H. Tan, Hew & Y. S. Tan [26], Ozkan-Gunay & Ozkan [25]) are devoted to the analysis of a firm's (or bank's) conditions prior to financial difficulties. These works established certain important generalizations regarding the performance and trends of particular measurements and the adaptation of their results from assessing bankruptcy potential