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The impact of bank capital on profitability and risk in Asian banking

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A B S T R A C T

This article applies the Generalized Method of Moments technique for dynamic panels using bank-level data for 42 Asian countries over the period 1994 to 2008 to investigate the impacts of bank capital on profitability and risk. Ignoring influence factors, the extant literature presents an ambiguous impact of bank capital on profitability (risk), however, when the effects from the influencing factors are taken into consideration, three conclusions are reached. First, along with the change in the categories of banks, investment banks have the lowest and positive capital effect on profitability, whereas commercial banks reveal the highest reverse capital effect on risk. Second, banks in low-income countries have a higher capital effect on profitability; banks in lower-middle income countries have the highest reverse capital effect on risk, while banks in high-income countries have the lowest values. Third, banks in Middle Eastern countries own the highest and positive capital effect on profitability. Far East & Central Asian banks have the largest reverse capital effect on risk, while the lowest value occurs in Middle Eastern countries' banks. Finally, our results also reveal that persistence of profit is greatly affected by different profitability variables, and all risk variables show persistence from one year to the next.

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1. Introduction

How does bank capital affect risk? In response to the recent global financial crisis, the Basel Committee on Banking Supervision (BCBS) set forth to update the guidelines for capital and banking regulations. Basel III proposes many new capital, leverage, and liquidity standards to strengthen regulation, supervision, and risk management in the banking sector. The capital standards and new capital buffers will require banks to hold more capital and a higher quality of capital than under current Basel II rules.

Regulators in most jurisdictions around the world are still planning to implement the new accord (Basel II), but have widely varying timelines and are restricting the use of varying methodologies. For instance, in 2008 the Federal Reserve Board of the U.S. proposed a rule for public comment that would institute certain less-complex approaches for calculating risk-based capital requirements. The proposal, known as the standardized framework, would be available for banks, bank holding companies, and savings associations not subject to the advanced approaches of Basel II.[1] More importantly, the recent credit crisis has emphasized the need to further understand the determinants of bank risk in an environment of lower bank capital (Festic et al., 2011).

The European Union has already implemented the Basel II accord via the EU Capital Requirements Directives, and many European banks have already reported their capital adequacy ratios according to the new system. All credit institutions in the EU adopted Basel II at the beginning of 2008. The Monetary Authority of Singapore (MAS) also implemented Basel II for all Singapore-incorporated banks on January 01, 2008.[2] The Reserve Bank of India (RBI) implemented the Basel II standardized norms on 31 March 2009 and is moving to internal credit ratings for operational risks in banks.

It is thus no surprise that the relationship between bank capital and risk (profitability) has recently become a cause for concern, especially as the level of capital may give rise to both beneficial and adverse effects on bank profitability. Despite this, empirical work on the topic is either scant or mixed, particularly in Asia. For example, Barth et al. (2008) find notably that some Asian countries, such as Philippines, Singapore, and Indonesia, are strengthening capital requirements, while some are easing their capital requirements, such as South Korea and Japan, in the aftermath of their crises. This differs from Argentina, which made the same move, but in advance of the crisis. At the same time, South Korea, Malaysia, Singapore, and Thailand provided supervisors with more explicit power. Unfortunately, an increase in supervisors' powers was found to be not helpful in bank performance and stability (Barth et al., 2006). Worse, according to Barth et al. (2008) and their simulation results, some Asian countries have increased banking-system fragility by intensifying regulatory restrictions.

The Asian banking industry therefore provides an interesting laboratory for investigation. Against the current background of change in Asian banking, we aim to shed some crucial light on the determinants of bank risk-taking and analyze its relationship with capital and profitability. This is, to our knowledge, the first study of bank capital's impacts on profitability and risk for different income levels, specializations, and geographic regions in the Asia banking industry.

Previous studies focusing on the relationship between capital and risk have mixed results (Aggarwal and Jacques, 1998). Some studies find a positive relationship between capital and risk, meaning regulators encourage banks to increase their capital commensurably with the amount of risk taken, which refers to the '*regulatory hypothesis*' (Pettway, 1976; Shrieves and Dahl, 1992; Berger, 1995; Demirgüç-Kunt and Huizinga, 2000; Iannotta et al., 2007; etc.). Nevertheless, opposite results are found in some studies. A negative relationship between capital and risk may refer to the '*moral hazard hypothesis*' whereby banks have incentives to exploit existing flat deposit insurance schemes (Demirgüç-Kunt and Kane, 2002). For instance, Jahankhani and Lynge (1980), Brewer and Lee (1986), Karels et al. (1989), Jacques and Nigro (1997), and Agusman et al. (2008) show that equity-to-total-assets is negatively related to risk. As also indicated by Kahane (1977), Koehn and Santomero (1980), and Kim and Santomero (1988), banks could respond to regulatory actions, forcing them to increase their capital by increasing asset risk (Altunbas et al., 2007). However, the puzzle between capital and

[1] http://www.federalreserve.gov/newsevents/press/bcreg/20080626b.htm.
[2] http://www.mas.gov.sg/fin_development/banking/Basel_II.html.