

Derivative activities and Asia-Pacific banks' interest rate and exchange rate exposures

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Abstract

In this paper, we investigate whether the level of derivative activities of Asia-Pacific banks is associated with the market's perception of their interest rate and exchange rate risks. The results suggest that the level of derivative activities (especially interest rate derivatives) is positively associated with long-term interest rate exposure (LTIR) but negatively associated with short-term interest rate exposure (STIR). Further investigations reveal that the positive LTIR exposures are driven by banks with extensive derivative activities. We do not find any significant association between banks' derivative activities and exchange rate exposure. The significant positive association between the level of derivative activities and LTIR suggests the need for better management of banks' internal control systems and/or greater derivative disclosure requirements to bring stronger market discipline to banks, particularly for banks with extensive derivative activities.

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1. Introduction

After playing a major role in several highly publicized financial scandals, banks' derivative activities have become increasingly controversial.¹ Indeed, these incidents have sparked debate

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¹ Financial institutions reporting major losses from derivative related transactions in recent years include Baring Securities (U.K.), Daiwa (Japan), Metallgesellschaft AG (Germany), Orange County (California) and Bankers Trust (New York) (Hirtle, 1997).

regarding the value and risks of derivative activities. On the one hand for example, the US Federal Reserve Board Chairman Alan Greenspan argues that derivatives have contributed to the development of a ‘far more flexible, efficient and resilient financial system than existed just a quarter-century ago’. In contrast, noted US investor Warren Buffet views derivatives as ‘time bombs for both the parties that deal in them and the economic system’. Randall Dodd, the director of the Derivatives Study Center, a Washington think tank,² regards derivatives as a ‘double-edged sword’ in that ‘they are extremely useful for risk management but they also create a host of new risks that expose the entire economy to potential financial market disruptions’ (Berry, 2003).

Since derivative-related losses might cause the failure of large banks, precipitating a collapse of the payment and credit system especially in a bank-centered economy, regulators and investors should be, and are, concerned about the potential misuse of derivatives. The fact that many of these derivative activities have traditionally been off-balance sheet has made it very difficult for external stakeholders to assess the level of banks’ risk exposures. Derivative activities can reduce banks’ risk if they are effectively used for hedging purposes or meeting customers’ needs.³ If banks use derivatives for trading purposes, derivative activities can increase banks’ risk. For example, due to an accounting loophole,⁴ concerns were expressed that large Japanese banks were using profits from speculative interest rate swaps to conceal their operating activity losses after the 1998 Big Bang reform (The Economist, 2002).⁵

Financial scandals associated with derivative activities are not confined to the US and European region. For example, in 2004 the National Australia Bank lost approximately AUD360 million when four foreign currency dealers engaged in 3 months of unauthorized derivatives trades, that was undetected due to lack of internal controls (McCallum, 2004). While such financial scandals have motivated the analysis of derivative activities and risk consequences of banks in the US (e.g. Choi and Elyasiani, 1997; Chaudhry et al., 2000), studies of this type are largely absent in the Asia-Pacific region.⁶ In addition, the extensive and rapidly increasing derivative activities of Asia-Pacific banks also warrant an investigation into this issue.⁷ Accordingly, we analyze whether the level of derivative activities is associated with the market’s perception of banks’ interest rate (IR) and exchange rate (ER) risks for a sample of Asia-Pacific banks.

² The Derivatives Study Center (Financial Policy Forum) is a non-profit educational research institution created to improve the public policy debate over financial and economic policy by conducting research into financial markets, financial market regulation and macroeconomic policy.

³ Rogers and Sinkey (1999) suggest that banks’ involvement in non-traditional activities (such as derivative activities) to meet customers’ needs provide them with more diverse sources of income and greater access to financial markets, thereby reducing risk.

⁴ Japanese banks apply “macro-hedge accounting” rules and are not required to value derivatives used for hedging purposes at market prices, or to match them to assets and liabilities of similar maturity.

⁵ In late 1996, the Japanese government implemented a major reform aimed at transforming Japanese financial markets and institutions into a free, fair and global system by 2001. This reform was termed the “Big Bang” due to similarities with the widespread economic reform that took place in London in the 1980s, likewise labeled the “Big Bang” (Dekle, 1998).

⁶ The one exception is Reichert and Shyu (2003)—however, their analysis is quite restricted as they only investigate 10 large Japanese banks.

⁷ In April 2004, the daily turnover of over the counter (OTC) foreign currency and interest rate derivatives in the Asia-Pacific region was US\$ 400,000 million and US\$ 67,341 million, respectively. Relative to year 2001, there has been a 40% increase in OTC foreign currency derivative turnover and a 110% increase in OTC interest rate derivative turnover (Bank for International Settlements, 2005).

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